NAME
  asmmenu - launch Advanced System Management menu

SYNOPSIS
  asmmenu --ip *IP-address* [**--help**]

DESCRIPTION
  asmmenu launches the Advanced System Management (ASM) interface for a managed system using the browser on the Hardware Management Console (HMC).

OPTIONS
  --ip   The IP address or host name of the service processor for the managed system for which to launch the ASM browser interface.

EXAMPLES
  Launch the ASM browser interface for the managed system's service processor which has the IP address 192.168.131.25:

  asmmenu --ip 192.168.131.25

ENVIRONMENT
  None

BUGS
  None

AUTHOR
  IBM Austin

NAME
>   bkconsdata - back up console data

SYNOPSIS
>   **bkconsdata -r** {**usb** | **ftp** | **sftp** | **nfs** | **none**}
>   [**-h** *host-name*] [**-u** *user-ID*] [**--passwd** *password*] [**-k** *SSH-private-key*]
>   [**-l** *mount-location*] [**-o** "*mount-command-options*"]
>   [**-d** *remote-directory*] [**-f** *file*] [**--force**]
>   [**-i perfmon**] [**--help**]

DESCRIPTION
>   **bkconsdata** backs up critical Hardware Management Console (HMC) data, which is HMC data that is
>   stored on the HMC hard disk. This backup data may be used to restore the HMC if the HMC needs to be
>   reinstalled from the HMC recovery CDs in the event of an HMC hard disk failure.

OPTIONS

>   **-r**   The archive option for the backup data. Valid values are **usb** for a USB flash memory device, **ftp**
>   for a remote FTP site, **sftp** for a remote secure FTP (SFTP) site, **nfs** for an NFS file system, or
>   **none**. The **none** option is used to remove the backup task lock allowing this task to be re-executed
>   immediately.

>   **-h**   The host name or IP address of the remote server.

>   This option is required when backing up the data to a remote FTP site, SFTP site, or NFS file sys-
>   tem. Otherwise, this option is not valid.

>   **-u**   The user ID to use to log in to the remote FTP or SFTP site.

>   This option is required when backing up the data to a remote FTP or SFTP site. Otherwise, this
>   option is not valid.

>   **--passwd**
>   The password to use to log in to the remote FTP or SFTP site.

>   If this option is omitted and the data is being backed up to a remote FTP site, you will be
>   prompted to enter the password. If both this option and the **-k** option are omitted and the data is
>   being backed up to a remote SFTP site, you will be prompted to enter the password. The
>   **--passwd** and **-k** options are mutually exclusive.

>   This option is only valid when backing up the data to a remote FTP or SFTP site.

>   **-k**   The name of the file that contains the SSH private key. If the file name is not fully qualified, the
>   file must exist in the user's home directory on the HMC.

>   Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen**
>   command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so
>   when you run the command on the HMC, you must specify both the directory and the file name
>   for the private key. If you generate a key with a passphrase, you will be prompted to enter the
>   passphrase when you run any HMC command that uses the key.

>   If both this option and the **--passwd** option are omitted and the data is being backed up to a remote
>   SFTP site, you will be prompted to enter the password. The **-k** and **--passwd** options are mutually
>   exclusive.

>   This option is only valid when backing up the data to a remote SFTP site.

>   **-l**   The mount location defined on the NFS server where the backup data will be written.

>   This option is required when backing up the data to an NFS file system. Otherwise, this option is

not valid.

-o   Options to be passed to the **mount** command used to mount the NFS file system where the backup data will be written. The options must be enclosed in double quotes.

The HMC supports NFS versions 3 and 4, and this command uses version 3 by default. To use version 4, include the option **vers=4**.

This option is only valid when backing up the data to an NFS file system.

-d   The name of the directory on the remote server to which to write the backup data. If this option is not specified when backing up the data to a remote FTP or SFTP site, the backup data will be written to the user's home directory. If this option is not specified when backing up the data to an NFS file system, the backup data will be written to the *mount-location* on the NFS server.

This option is only valid when backing up the data to a remote FTP site, SFTP site, or NFS file system.

-f   The name of the file on the remote server to which to write the backup data. The name must start with **HMCBackup_**.

If the specified file already exists, this command will fail unless the **--force** option is specified.

This option is only valid when backing up the data to a remote FTP site, SFTP site, or NFS file system.

--force   When **-f** is specified, specify this option to allow the specified file to be overwritten if it already exists. If it already exists and this option is not specified, the backup will fail.

This option is only valid when **-f** is specified.

-i   Additional data to be included in the backup data. The only valid value is **perfmon** to include performance monitoring data.

--help   Display the help text for this command and exit.

EXAMPLES

Back up critical HMC data to a USB flash memory device:

bkconsdata -r usb

Back up critical HMC data to a remote FTP site:

bkconsdata -r ftp -h ftpserver -u ftpuser --passwd ftppassword

Back up critical HMC data to a remote SFTP site using SSH keys for authentication and include performance monitoring data:

bkconsdata -r sftp -h sftpserver -u sftpuser -i perfmon
-k /home/hmcuser/keys/id_rsa

Back up critical HMC data to an NFS file system using NFS version 4:

bkconsdata -r nfs -h 9.3.145.52 -l /home/hmc/backups -o "vers=4"

ENVIRONMENT

None

BUGS
>   None

AUTHOR
>   IBM Austin

SEE ALSO
>   **rstconsdata**

NAME

bkprofdata - back up profile data

SYNOPSIS

bkprofdata -m *managed-system* **-f** *file* [**--force**] [**--help**]

DESCRIPTION

bkprofdata backs up profile data for the *managed-system*.

The **rstprofdata** command can be used to restore profile data for the *managed-system*.

The **rmprofdata** command can be used to remove a profile data backup file.

OPTIONS

-m   The name of the managed system for which to back up profile data. The name may either be the user-defined name for the managed system, or be in the form *tttt*-*mmm**ssssssss, where *tttt* is the machine type, *mmm* is the model, and *ssssssss* is the serial number of the managed system. The *tttt*-*mmm**ssssssss form must be used if there are multiple managed systems with the same user-defined name.

-f   The name of the backup file where the profile data is to be written. If *file* is not fully qualified, *file* will be written to the **/var/hsc/profiles/***serial-number* directory on the HMC (*serial-number* is the serial number of the managed system).

If *file* already exists, this command will fail unless the **--force** option is specified.

To back up the profile data to removable media, the media must be present in the removable media device and the device must be mounted with the **mount** command before this command is issued. The **lsmediadev** command can be used to display all of the removable media devices on the HMC.

--force   This option allows the specified backup file to be overwritten if it already exists. If the specified backup file already exists and this option is not specified, the backup will fail.

--help   Display the help text for this command and exit.

EXAMPLES

Back up the profile data to a file called **myFile** on a USB flash memory device (a USB flash memory device must already be connected to the HMC):

lsmediadev (to obtain mount points)

mount /media/sdb1

bkprofdata -m mySystem -f /media/sdb1/myFile

Back up the profile data to a file called **backup1** (the file will be written to the **/var/hsc/profiles/3413444** directory on the HMC):

bkprofdata -m 9406-570*3413444 -f backup1

Back up the profile data to a file called **backup1** (the file will be written to the **/var/hsc/profiles/3413444** directory on the HMC). The file **backup1** will be overwritten if it already exists:

bkprofdata -m 9406-570*3413444 -f backup1 --force

ENVIRONMENT

None

BUGS
   None
AUTHOR
   IBM Austin
SEE ALSO
   lsmediadev, **rmprofdata**, **rstprofdata**

NAME
>   chaccfg - change access control configuration

SYNOPSIS
>   **chaccfg -t** {**resourcerole** | **taskrole** | **autoresource** | **autoresourcerole**}
>   [{**-f** *configuration-file* | **-i** "*configuration-data*"}]
>   [**-o** {**enable** | **disable** | **convert** | **remove**}] [**--retain** {**0** | **1**}]
>   [**--help**]

DESCRIPTION
>   **chaccfg** changes the configuration of access control objects.

OPTIONS
>   **-t**   The type of access control objects to change. Valid values are **resourcerole** for managed resource
>   role, **taskrole** for task role, **autoresource** for automatically added managed resource object, and
>   **autoresourcerole** for the automatic managed resource role update setting.
>
>   **-f**   The name of the file containing the configuration data needed to change an access control role.
>   The configuration data consists of attribute name/value pairs, which are in comma separated value
>   (CSV) format. These attribute name/value pairs form a configuration record. A line feed marks
>   the end of a configuration record. There can only be one configuration record in the file.
>
>   The format of a configuration record is as follows:
>
>   *attribute-name*=*value***,***attribute-name*=*value***,**...<LF>
>
>   Note that certain attributes accept a comma separated list of values, as follows:
>
>   "*attribute-name*=*value***,***value***,**...***"***,**...<LF>
>
>   When a list of values is specified, the attribute name/value pair must be enclosed in double quotes.
>   Depending on the shell being used, nested double quote characters may need to be preceded by an
>   escape character, which is usually a '\' character.
>
>   If '+=' is used in the attribute name/value pair instead of '=', then the specified *value* is added to
>   the existing value for the attribute if the attribute is numerical. If the attribute is a list, then the
>   specified *value*(s) is added to the existing list.
>
>   If '-=' is used in the attribute name/value pair instead of '=', then the specified *value* is subtracted
>   from the existing value for the attribute if the attribute is numerical. If the attribute is a list, then
>   the specified *value*(s) is deleted from the existing list.
>
>   The '+=' and '-=' operators can only be used when changing a managed resource role.
>
>   Attribute names for managed resource roles:
>   **name**
>   name of the managed resource role to
>   change (required)
>   **resources**
>   comma separated list of managed resource
>   objects (required)
>
>   Attribute names for task roles:
>   **name**
>   name of the task role to change
>   (required)
>   **resources**

comma separated list of tasks (required)

The **-f** and the **-i** options are mutually exclusive.

Either this option or the **-i** option is required when changing an access control role. This option is not valid for any other operation.

-i   This option allows you to enter configuration data on the command line, instead of using a file. Data entered on the command line must follow the same format as data in a file, and must be enclosed in double quotes.

The **-i** and the **-f** options are mutually exclusive.

Either this option or the **-f** option is required when changing an access control role. This option is not valid for any other operation.

-o   The operation to perform. Valid values are **enable** to enable automatic updates of custom managed resource roles, **disable** to disable automatic updates of custom managed resource roles, **convert** to convert all automatically added managed resource objects to user-added managed resource objects, and **remove** to remove all automatically added managed resource objects.

This option is required when changing automatically added managed resource objects or the automatic managed resource role update setting. This option is not valid for any other operation.

--retain

When disabling automatic updates of custom managed resource roles, specify whether automatically added managed resource objects are to be removed or converted to user-added managed resource objects. Valid values are **0** to remove and **1** to convert.

This option is required when disabling automatic updates of custom managed resource roles. This option is not valid for any other operation.

--help   Display the help text for this command and exit.

EXAMPLES

Change the managed resource objects for the managed resource role **lpar_role** where **XXX** is a resource name returned from **lsaccfg -t resource --script**:

chaccfg -t resourcerole -i "name=lpar_role,resources=XXX"

Add a managed resource object to the managed resource role **mr1** where **XXX** is a resource name returned from **lsaccfg -t resource --script**:

chaccfg -t resourcerole -i "name=mr1,resources+=XXX"

Change the task role **tr1**:

chaccfg -t taskrole -i "name=tr1,"resources=
cec:ChangeCECProperty+CECPowerOn+CECPowerOff,
lpar:ChangeLPARProperty+ChangeProfileProperty""

Change a task role using the configuration data in the file **/tmp/cfgFile**:

chaccfg -t taskrole -f /tmp/cfgFile

Enable the automatic updates of custom managed resource roles:

chaccfg -t autoresourcerole -o enable

Disable the automatic updates of custom managed resource roles and remove all automatically added managed resource objects:

chaccfg -t autoresourcerole -o disable --retain 0

Remove all automatically added managed resource objects:

chaccfg -t autoresource -o remove

ENVIRONMENT
    None

BUGS
    None

AUTHOR
    IBM Austin

SEE ALSO
    lsaccfg, **mkaccfg**, **rmaccfg**

NAME

chbmccert - change BMC certificate

SYNOPSIS

chbmccert -o remove -a *alias* [**--help**]

DESCRIPTION

chbmccert removes a Baseboard Management Controller (BMC) or Enterprise BMC certificate from the Hardware Management Console (HMC).

OPTIONS

-o   The operation to perform. The only valid value is **remove** to remove a BMC or Enterprise BMC certificate from the HMC.

-a   The alias of the BMC or Enterprise BMC certificate to remove.

--help   Display the help text for this command and exit.

EXAMPLES

Remove a BMC certificate from this HMC:

chbmccert -o remove -a bmccert1

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

lsbmccert, **getfile**

NAME
>   chcod - change Capacity on Demand

SYNOPSIS
>   To enter a CoD code:
>   **chcod -o e -m** *managed-system* **-k** *CoD-code*
>
>   To activate or change the amount of Elastic CoD resources:
>   **chcod -o a -m** *managed-system* **-c onoff -r** {**mem** | **proc**}
>   **-q** *quantity-of-resources* **-d** *number-of-days*
>
>   To activate or change the number of Utility CoD processors:
>   **chcod -o a -m** *managed-system* **-c utility -r proc**
>   **-q** *quantity-of-processors*
>
>   To deactivate all Elastic CoD or all Trial CoD resources:
>   **chcod -o d -m** *managed-system* **-c** {**onoff** | **trial**}
>   **-r** {**mem** | **proc**}
>
>   To deactivate all Utility CoD processors:
>   **chcod -o d -m** *managed-system* **-c utility -r proc**
>
>   To set or disable a Utility CoD processor minute usage limit:
>   **chcod -o s -m** *managed-system* **-c utility -r proc**
>   **-l** *number-of-processor-minutes*

DESCRIPTION
>   **chcod** performs Capacity on Demand (CoD) operations on the *managed-system*.
>
>   **chcod** is used to enter a CoD code for the *managed-system*. It is also used to activate Elastic CoD or Utility
>   CoD resources, or to deactivate Elastic CoD, Trial CoD, or Utility CoD resources. CoD resources are either
>   memory or processors.
>
>   **chcod** is also used to set or disable a Utility CoD processor minute usage limit.

OPTIONS
>   **-o**   The CoD operation to perform. Valid values are **e** to enter a CoD code, **a** to activate or change the
>   number of Elastic CoD or Utility CoD resources, **d** to deactivate all Elastic CoD, all Trial CoD, or
>   all Utility CoD resources, and **s** to set or disable a Utility CoD processor minute usage limit.
>
>   To change the number of Elastic CoD resources or days that are currently activated, specify an
>   activate operation with this option, specify the total number of activated Elastic CoD resources that
>   you want with the **-q** option, and specify the number of days that you want them for with the **-d**
>   option. An activate operation is to be used regardless of whether the total number of activated
>   Elastic CoD resources is being increased, decreased, or kept the same. A deactivate operation is to
>   be used only when you no longer want to have any activated Elastic CoD resources.
>
>   To change the number of Utility CoD processors that are currently activated, specify an activate
>   operation with this option, and specify the total number of activated Utility CoD processors that
>   you want with the **-q** option. An activate operation is to be used regardless of whether the total
>   number of activated Utility CoD processors is being increased or decreased. A deactivate opera-
>   tion is to be used only when you no longer want to have any activated Utility CoD processors in
>   the shared processor pool.
>
>   Note that CUoD, and Trial CoD resources are activated by entering a CoD code.

-m   The name of the managed system for which the CoD operation is to be performed. The name may either be the user-defined name for the managed system, or be in the form *tttt*-*mmm*****sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt*-*mmm*****sssssss* form must be used if there are multiple managed systems with the same user-defined name.

-k   The CoD code (key) to enter. Letters may be entered in either upper case or lower case.

-c   The CoD type. Valid values are **onoff** for Elastic CoD, **trial** for Trial CoD, and **utility** for Utility CoD.

-r   The CoD resource type. Valid values are **mem** for memory and **proc** for processors.

-q   The quantity of Elastic CoD or Utility CoD resources requested. The value specified must be a whole number which is greater than 0.

         When requesting Elastic CoD memory, the value specified must be in megabytes, and it must be a multiple of 1024 megabytes.

-d   The number of days for which the Elastic CoD resources are requested.

-l   The number of processor minutes to set as the Utility CoD processor minute usage limit.

         To disable the Utility CoD processor minute usage limit, specify a 0 with this option.

--help   Display the help text for this command and exit.

EXAMPLES
      Enter a CoD code:

      chcod -m sys1 -o e -k AlphaNumericString12345

      Activate 2 GB of Elastic CoD memory for 10 days:

      chcod -m 9406-570*1001CA -o a -c onoff -r mem -q 2048
       -d 10

      Increase to 5 GB of Elastic CoD memory for 3 days:

      chcod -m 9406-570*1001CA -o a -c onoff -r mem -q 5120
       -d 3

      Activate 4 Elastic CoD processors for 5 days:

      chcod -m sys1 -o a -c onoff -r proc -q 4 -d 5

      Decrease to 1 Elastic CoD processor for 5 days:

      chcod -m sys1 -o a -c onoff -r proc -q 1 -d 5

      Activate 1 Utility CoD processor:

      chcod -m 9117-MMA*10BACEC -o a -c utility -r proc -q 1

      Activate 2 more Utility CoD processors for a total of 3 Utility CoD processors:

      chcod -m 9117-MMA*10BACEC -o a -c utility -r proc -q 3

      Decrease the number of activated Utility CoD processors to 2:

chcod -m 9117-MMA*10BACEC -o a -c utility -r proc -q 2

Deactivate all Elastic CoD processors:

chcod -m sys1 -o d -c onoff -r proc

Deactivate all Utility CoD processors:

chcod -m sys1 -o d -c utility -r proc

Deactivate all Trial CoD memory and stop the trial:

chcod -m 9406-570*1001CA -o d -c trial -r mem

Set a Utility CoD processor minute usage limit of 100 processor minutes:

chcod -m sys1 -o s -c utility -r proc -l 100

Disable the Utility CoD processor minute usage limit:

chcod -m sys1 -o s -c utility -r proc -l 0

ENVIRONMENT
   None
BUGS
   None
AUTHOR
   IBM Austin
SEE ALSO
   lscod

NAME

      chcodpool - change a CoD Power enterprise pool

SYNOPSIS

      To update a Power enterprise pool:

          chcodpool -o update {**-p** *pool-name* | **--id** *pool-ID*}
              [**-f** *file*] [**-a "***attributes***"**] [**-v**] [**--help**]

      To add or remove Mobile CoD resources to or from a system in a Power enterprise pool:

          chcodpool -o {**add** | **remove**} {**-p** *pool-name* | **--id** *pool-ID*}
              -m *managed-system* **-r** {**mem** | **proc**} **-q** *quantity*
              [**--force**] [**--help**]

      To add, remove, or reauthenticate a managing Hardware Management Console (HMC):

          chcodpool -o {**add** | **remove** | **auth**} {**-p** *pool-name* | **--id** *pool-ID*}
              --mc *IP-address* [**-u** *user-ID* [**--passwd** *password*]]
              [**--restrictedops** {**0** | **1**}]
              [**--force**] [**--forcenoconn**] [**--help**]

      To set a managing HMC attribute:

          chcodpool -o set {**-p** *pool-name* | **--id** *pool-ID*}
              --mc *IP-address* **--restrictedops** {**0** | **1**}
              [**--help**]

      To change the controller HMC for a Power enterprise pool:

          chcodpool -o setcontroller {**-p** *pool-name* | **--id** *pool-ID*}
              --mc {**this** | *IP-address*} [**--force**] [**--help**]

      To recover a Power enterprise pool after a clean install of the controller HMC:

          chcodpool -o recover -p *pool-name* **-f** *file* [**-a "***attributes***"**]
              [**-v**] [**--help**]

      To synchronize Power enterprise pool information:

          chcodpool -o sync {**-p** *pool-name* | **--id** *pool-ID*} [**--help**]

DESCRIPTION

      chcodpool performs Capacity on Demand (CoD) Power enterprise pool operations.

OPTIONS

      -o   The operation to perform. Valid values are **update** to update a Power enterprise pool, **add** to add Mobile CoD resources to a system in a pool or to add a managing HMC to a pool, **remove** to remove Mobile CoD resources from a system in a pool or to remove a managing HMC from a pool, **auth** to reauthenticate a managing HMC in a pool, **set** to set an attribute of a managing HMC, **setcontroller** to change the controller HMC for a pool, **recover** to recover a pool after a clean install of the controller HMC for the pool, and **sync** to synchronize the pool information between the controller HMC for a pool, the managing HMCs in the pool, and the systems in the pool.

      -p   The name of the Power enterprise pool for which to perform the operation.

              Except when recovering a pool, you can either use this option to specify the name of the pool, or use the **--id** option to specify the pool's ID. The **--id** option must be used if there are multiple Power enterprise pools with the same name. The **-p** and the **--id** options are mutually exclusive.

              When recovering a pool, you must use this option to specify a name for the pool being recovered.

--id   The ID of the Power enterprise pool for which to perform the operation.

You can either use this option to specify the ID of the pool, or use the **-p** option to specify the pool's name. The **--id** option must be used if there are multiple Power enterprise pools with the same name. The **--id** and the **-p** options are mutually exclusive.

-m   The name of the managed system to which to add or remove Mobile CoD resources. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

-r   The type of Mobile CoD resources to add or remove. Valid values are **mem** for Mobile CoD memory, and **proc** for Mobile CoD processors.

-q   The number of Mobile CoD processors or the amount of Mobile CoD memory to add or remove. The number of processors must be a whole number. The amount of memory must be specified in megabytes and must be a multiple of gigabytes.

-f   The name of the XML file that contains the Power enterprise pool configuration data. If *file* is not fully qualified, *file* must exist in the user's home directory on the HMC.

If *file* exists on removable media, the media must be present in the removable media device and the device must be mounted with the **mount** command before this command is issued. The **lsmediadev** command can be used to display all of the removable media devices on the HMC.

This option must be specified when updating which systems are members of a Power enterprise pool, or when updating the amount of Mobile CoD resources in a pool. This option must also be specified when recovering a pool following the clean install of the controller HMC for the pool.

-a   The Power enterprise pool attributes to update or recover. The attribute data consists of attribute name/value pairs, which are in comma separated value (CSV) format.

The format of the attribute data is as follows:

attribute-name=*value***,***attribute-name*=*value***,**...

Note that certain attributes accept a comma separated list of values, as follows:

"*attribute-name*=*value***,***value***,**...**",**...

When a list of values is specified, the attribute name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

Valid attribute names for updating a pool:
    new_name

Valid attribute names for recovering a pool:
    mcs
        Comma separated list of managing HMCs for the pool,
        with each managing HMC having the following format:

        *host-name-or-IP-address***/***user-ID***/**[*password*][**/**
        [*restricted-ops*]]

        The first 2 '**/**' characters must be present. The 3rd

'/' character is optional, but it must be present if *restricted-ops* is specified.

Optional values may be omitted. Optional values are *password* and *restricted-ops*. If *password* is omitted, you will be prompted to enter the password.

Valid values for *restricted-ops*:
0 - users are not restricted from initiating add and remove Mobile CoD resource operations from this managing HMC (default value)
1 - users are restricted from initiating add and remove Mobile CoD resource operations from this managing HMC

Note: do not include the HMC which is running this command in the list.

For example:
hmc1/user1/ prompts the user for **user1**'s password then uses that password and the user ID **user1** to log into the HMC with host name **hmc1** to add that HMC to the pool.

--mc   Specify the HMC host name or IP address. When setting a new controller HMC for the Power enterprise pool, you can specify **this** to set the HMC running this command as the new controller.

When setting a new controller HMC for the pool, if the current controller HMC for the pool is running you can run this command from any managing HMC and set any managing HMC in the pool as the new controller. If the current controller HMC for the pool is not running or not reachable, you must run this command on the HMC that you want to set as the new controller and you must specify the **--force** option.

-u   Specify the user ID to use to log into the managing HMC being added or reauthenticated.

--passwd
Specify the password for *user-ID*. If this option is omitted, you will be prompted to enter the password.

--restrictedops
Specify whether or not users are restricted from initiating add and remove Mobile CoD resource operations from the specified managing HMC. Valid values are **0** if users are not restricted, and **1** if they are restricted. If this option is omitted, it defaults to **0**.

This option does not apply to the controller HMC for the pool.

This option is only valid when performing a managing HMC add or set operation.

--force   Specify this option to force a Mobile CoD add or remove operation to occur for a system that is not currently reachable from the controller HMC for the pool. If Mobile CoD resources are removed from a system that is not currently reachable from the controller HMC, those resources will be considered unreturned until the system can be reached from the controller HMC again. A grace period compliance timer will be started for that system as soon as the resources are removed. To add Mobile CoD resources to a system that is not currently reachable from the controller HMC for the pool, the system must have unreturned Mobile CoD resources, and you cannot add more Mobile CoD resources to the system than are unreturned on that system.

When setting a new controller HMC for a pool, you must specify this option to force the HMC to set itself as the new controller HMC for a pool when the current controller HMC for the pool is not running or not reachable.

When removing a managing HMC from the pool, you must specify this option if the HMC you want to remove is the only HMC managing one or more systems in the pool.

--forcenoconn
Specify this option to remove a managing HMC from a pool when the controller HMC for the pool is not able to reach the managing HMC. After the HMC is removed from the pool, the pool data will remain on the managing HMC but will no longer be updated. To remove the pool data from the managing HMC, you must perform a clean install of the HMC.

-v   Specify this option to enable verbose mode. When verbose mode is enabled, warning messages and informational messages are displayed for successful update pool and recover pool operations. Warning messages and informational messages are displayed for update pool and recover pool operations that partially succeed or fail, regardless of whether this option is specified.

--help   Display the help text for this command and exit.

EXIT STATUS
This command has the following return codes:

0   Success

100   Partial success

This value is returned when at least one portion of an update pool or recover pool operation succeeded, and at least one failed.

Any other value means the command failed.

EXAMPLES
Update the pool configuration for Power enterprise pool **myPool** and change the pool's name to **pool1** (the configuration file **pool1032.xml** is in the user's home directory on the HMC):

chcodpool -o update -p myPool -f pool1032.xml -a "new_name=pool1" -v

Add **2** Mobile CoD processors to **sys4** in Power enterprise pool **myPool**:

chcodpool -o add -m sys4 -p myPool -r proc -q 2

Remove **4** GB of Mobile CoD memory from **sys4** in Power enterprise pool **myPool**:

chcodpool -o remove -m sys4 -p myPool -r mem -q 4096

Add the HMC with host name **hmc1** to the Power enterprise pool **myPool** (you will be prompted for the password):

chcodpool -o add --mc hmc1 -u user1 -p myPool

Remove the HMC with IP address **192.168.32.25** from the Power enterprise pool with ID **0235**:

chcodpool -o remove --mc 192.168.32.25 --id 0235

Prevent add and remove Mobile CoD operations from being initiated on the managing HMC with host name **hmc2**:

chcodpool -o set --mc hmc2 -p pool2 --restrictedops 1

Set the HMC with host name **hmc1.company.com** as the new controller HMC for Power enterprise pool **pool3**:

chcodpool -o setcontroller --mc hmc1.company.com -p pool3

Set this HMC as the new controller HMC for the Power enterprise pool with ID **1234** when the current controller HMC is not reachable:

chcodpool -o setcontroller --mc this --id 1234 --force

Recover the Power enterprise pool **pool1** using the configuration file **pool0195.xml** file on a USB flash memory device (the USB flash memory device must already be connected to the HMC). The managing HMCs for the pool are **hmc1** and **hmc2** (you will be prompted to enter the password for each HMC):

lsmediadev (to obtain mount points)

mount /media/sdb1

chcodpool -o recover -p pool1 -f /media/sdb1/pool0195.xml -v
 -a ""mcs=hmc1/myuserID/,hmc2/myuserID/""

Synchronize the Power enterprise pool information for the pool **myPool**:

chcodpool -o sync -p myPool

ENVIRONMENT
>   None

BUGS
>   None

AUTHOR
>   IBM Austin

SEE ALSO
>   **lscodpool**, **mkcodpool**, **lsmediadev**

NAME
    chcomgmt - change co-management settings

SYNOPSIS
    chcomgmt -m *managed-system* **-o** {**setcontroller** | **relcontroller**}
     [**-t** {**norm** | **keep**}] [**--force**] [**--help**]

DESCRIPTION
    chcomgmt changes co-management settings for the *managed-system*.

    This command is used to set or release this Hardware Management Console (HMC) as the PowerVM man-
    agement controller for the managed system. You must set this HMC as the PowerVM management con-
    troller for a managed system when you want to perform an operation from this HMC that requires this
    HMC to be the PowerVM management controller. In addition, you can choose to set this HMC as the Pow-
    erVM management controller for a managed system when you want this HMC to be the only HMC that can
    perform PowerVM management for the managed system. Other HMCs would be able to perform Pow-
    erVM view operations only.

OPTIONS
    -m   The name of the managed system for which to change co-management settings. The name may
               either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where
               tttt is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed sys-
               tem. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the
               same user-defined name.

    -o   The operation to perform. Valid values are **setcontroller** to set this HMC as the PowerVM man-
               agement controller for the managed system, and **relcontroller** to release this HMC as the Pow-
               erVM management controller for the managed system.

    -t   The type of PowerVM management controller to set. Valid values are **norm** to set this HMC as a
               normal controller, and **keep** to set this HMC as a persistent controller.

               If you set this HMC as the PowerVM management controller for a managed system, it is recom-
               mended that you release it as controller as soon as controller mode is no longer needed, unless you
               want this HMC to remain the only HMC that can perform PowerVM management for the managed
               system. If you choose normal controller mode and you do not release it, it will be gracefully
               released when another PowerVM manager, such as another HMC, sets itself as the PowerVM
               management controller for the managed system. If you choose persistent controller mode and you
               do not release it, no other PowerVM manager will be able to set itself as the PowerVM manage-
               ment controller for the managed system without forcing the operation. It is recommended that you
               do not choose persistent controller mode unless directed to do so by your hardware service repre-
               sentative.

               To set this HMC as the persistent controller for a managed system, you must first set this HMC as
               the normal controller, unless there is no current PowerVM management controller for the managed
               system. Once this HMC is the current controller, then you can set this HMC as the persistent con-
               troller. If there is no current PowerVM management controller for the managed system, you can
               immediately set this HMC as the persistent controller without setting it as the normal controller
               first.

               This option is required when setting the PowerVM management controller. This option is not
               valid otherwise.

    --force Specify this option to force this HMC to be set as the PowerVM management normal controller
               for the managed system. Use this option when you are not able to get the current PowerVM man-
               agement controller to release itself as the controller. **Warning: use this option carefully. Forc-
               ing the set controller operation can result in any operations in progress on the current Pow-
               erVM management controller to fail, which can have unexpected impacts on managed**

system and partition configuration and states.

If the current PowerVM management controller for the managed system is in normal controller mode, you must first try to set this HMC as the normal controller without using the **--force** option. After doing so, if this HMC remains in pending controller mode, then you can immediately set this HMC as the normal controller by running this command again using the **--force** option. If the current PowerVM management controller for the managed system is in persistent controller mode, you can immediately set this HMC as the normal controller by using the **--force** option.

This option is only valid when setting this HMC as the PowerVM management normal controller for a managed system.

--help   Display the help text for this command and exit.

EXAMPLES

Set this HMC as the PowerVM management normal controller for managed system **sys1**:

chcomgmt -m sys1 -o setcontroller -t norm

Release this HMC as the PowerVM management controller for managed system **sys1**:

chcomgmt -m sys1 -o relcontroller

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

lscomgmt

NAME
>   chdatarep - change data replication settings

SYNOPSIS
>   **chdatarep -o** {**enable** | **disable** | **add** | **remove** | **push** | **set** | **sync**}
>   [**-h** *host-name*] [**-i** "*input-data*"] [**--help**]

DESCRIPTION
>   **chdatarep** changes the data replication settings for the Hardware Management Console (HMC).

OPTIONS
>   **-o**   The operation to perform. Valid values are **enable** to enable data replication on this HMC, **disable**
>   to disable data replication on this HMC, **add** to add a data replication source HMC, **remove** to
>   remove a data replication source HMC, **push** to push data to secondary HMCs, **set** to change con-
>   figured warning data types or data replication source HMC data types, and **sync** to sync data from
>   primary HMCs.
>
>   **-h**   The host name or IP address of the data replication source HMC to add, remove, or set.
>
>   This option is required when adding or removing a data replication source HMC. This option is
>   not valid when enabling or disabling data replication on this HMC, or when pushing data to sec-
>   ondary HMCs or syncing data from primary HMCs.
>
>   **-i**   The input data for the command. The input data consists of attribute name/value pairs, which are
>   in comma separated value (CSV) format.
>
>   The format of the input data is as follows:
>
>   *attribute-name*=*value***,***attribute-name*=*value***,**...
>
>   Note that certain attributes accept a comma separated list of values, as follows:
>
>   "*attribute-name*=*value***,***value***,**...**",**...
>
>   When a list of values is specified, the attribute name/value pair must be enclosed in double quotes.
>   Depending on the shell being used, nested double quote characters may need to be preceded by an
>   escape character, which is usually a '\' character.
>
>   If '+=' is used in the attribute name/value pair instead of '=', the specified value is added to the
>   existing list.
>
>   If '**-=**' is used in the attribute name/value pair instead of '=', the specified value is deleted from the
>   existing list.
>
>   Valid attribute names for this command:
>   **data_types**
>   Comma separated list of data replication source HMC
>   data types. Valid values for each source HMC are
>   displayed by the **lsdatarep -t source**
>   **-F avail_data_types** command.
>   **warning_data_types**
>   Comma separated list of warning data types. Valid
>   values for this HMC are displayed by the
>   **lsdatarep -t local -F avail_warning_data_types**
>   command.
>
>   This option is required when adding a data replication source HMC and when setting configured

warning data types or data replication source HMC data types. This option is not valid when disabling data replication on this HMC, or when pushing data to secondary HMCs or syncing data from primary HMCs.

--help Display the help text for this command and exit.

EXAMPLES

Enable data replication on this HMC and set the warning data types to LDAP configuration data and user profiles data:

chdatarep -o enable -i ""warning_data_types=ldap,user""

Add a data replication source HMC and set the data replication data from that HMC to user profiles data:

chdatarep -o add -h hmc1 -i "data_types=user"

Add additional data replication data types from source HMC **hmc1**:

chdatarep -o set -h hmc1 -i "data_types+=customer"

Push data to secondary HMCs:

chdatarep -o push

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

lsdatarep

NAME
         chhmc - change Hardware Management Console (HMC) configuration information

SYNOPSIS
         To change remote access settings:
             chhmc -c {**ssh** | **xntp** | **sol**}
                  -s {**enable** | **disable** | **modify**}
                  [**--sshusedns** {**enable** | **disable**}]
                  [**--sshtimeout** *minutes*]
                  [**--help**]

         To change remote web browser access:
             chhmc -c remotewebui
                  -s {**enable** | **disable**}
                  -i *interface*
                  [**-a** {*IPv4-address* | *IPv6-address*[*/prefix-length*]}]
                  [**-nm** *IPv4-network-mask*]
                  [**--help**]

         To enable or disable TLS encrypted system logging over TCP:
             chhmc -c syslog -t tls
                  -s {**enable** | **disable**}
                  [**--force**]
                  [**--help**]

         To add, modify, or remove a remote system logging destination:
             chhmc -c syslog
                  -s {**add** | **modify** | **remove**}
                  {**-a** *IP-address* | **-h** *host-name*}
                  [**-t** {**tcp** | **tls** | **udp**}]
                  [**-f** *input-data-file* | **--input** "*input-data*"]
                  [**--help**]

         To add or remove an entry in the network time protocol configuration file:
             chhmc -c xntp
                  -s {**add** | **remove**}
                  {**-a** {*IPv4-address* | *IPv6-address*[*/prefix-length*]} |
                   -h *host-name*}
                  [**--ntpversion** {**1** | **2** | **3** | **4**}]
                  [**-nm** *IPv4-network-mask*]
                  [**-i** *interface*]
                  [**--help**]

         To configure whether keyboard mapping configuration or display configuration will occur at the next
         reboot:
             chhmc -c {**kbdcfg** | **dispcfg**}
                  -s {**enable** | **disable**}
                  [**--help**]

         To configure an alternate disk partition on the HMC as a startup device:
             chhmc -c altdiskboot
                  -s {**enable** | **disable**}
                  --mode {**install** | **upgrade**}
                  [**--help**]

To configure firewall settings to permit or deny IP addresses from utilizing HMC services:
    chhmc -c {**ssh** | *service*}
        -s {**add** | **remove**}
        -a {*IPv4-address* | *IPv6-address*[*/prefix-length*]}
        [**-nm** *IPv4-network-mask*]
        [**-i** *interface*]
        [**--help**]

        If **-nm** is omitted, the default IPv4 network
        mask will be **255.255.255.255**.

        If *prefix-length* is omitted, the default
        IPv6 prefix length will be **128**.

        If **-i** is omitted, the rule will be applied
        to all interfaces.

To add or remove a static route:
    chhmc -c netroute
        -s {**add** | **remove**}
        [**--routetype** {**host** | **net**}]
        [**-a** {*IPv4-address* | *IPv6-address*[*/prefix-length*]}]
        [**-nm** *IPv4-network-mask*]
        [**-g** *gateway*]
        [**-i** *interface*]
        [**--position** *position*]

        Use the **chhmc -c network -s modify -g** command
        to modify the default route.

To enable or disable DNS on the HMC:
    chhmc -c network
        -s {**enable** | **disable**}
        --dns
        [**--help**]

To add or remove entries from the DNS server search order or the domain suffix search order:
    chhmc -c network
        -s {**add** | **remove**}
        [**-ns** *DNS-server*]
        [**-ds** *domain-suffix*]
        [**--help**]

To change network settings for a specific network interface:
    chhmc -c network
        -s modify
        -i *interface*
        [**-a** {**none** | *list*]
        [**-nm** *IPv4-network-mask*]
        [**--ipv6auto** {**on** | **off**}]
        [**--ipv6privacy** {**on** | **off**}]
        [**--ipv6dhcp** {**on** | **off**}]
        [**--ipv4dhcp** {**on** | **off**}]
        [**--lparcomm** {**on** | **off**}]

                  [**--tso** {**on** | **off**}]
                  [**--speed** {**auto** | **10** | **100** | **1000**}]
                  [**--duplex** {**auto** | **half** | **full**}]
                  [**--jumboframe** {**on** | **off**}]
                  [**--help**]

To change other network settings:
    chhmc -c network
        -s modify
        [**-h** *host-name*]
        [**-d** *network-domain-name*]
        [**-g** *gateway* [**-i** *interface*]]
        [**--help**]

To configure network bonding:
    chhmc -c netbond
        -s {**add** | **modify** | **remove**}
        [**-i** *interfaces*]
        [**-a** *IPv4-address*]
        [**-nm** *IPv4-network-mask*]
        [**-g** *gateway*]
        [**--source** *interface*]
        [**-b** *bond-name*]
        [**--mode** {**activebackup** | **roundrobin**}]
        [**--primary** *interface*]
        [**--help**]

To change the HMC DHCP server settings:
    chhmc -c network
        -s modify
        -i *interface*
        [**--dhcpserver** {**on** | **off**}]
        [**-a** *IPv4-address*]
        [**-nm** *IPv4-network-mask*]
        [**--range** *IPv4-address***,***IPv4-address*]
        [**--help**]

To enable or disable IPv6 on the HMC:
    chhmc -c network
        -s {**enable** | **disable**}
        --ipv6
        [**--help**]

To change the locale for the HMC:
    chhmc -c locale
        -s modify
        -l *locale*
        [**--help**]

To change the HMC date and time, or time zone:
    chhmc -c date
        -s modify
        [**--datetime** *date-time*]
        [**--timezone** *time-zone*]

[**--force**]
[**--help**]

To change the HMC Kerberos configuration:
    chhmc -c kerberos
        -s {**add** | **modify** | **remove**}
        [{**-a** *KDC-IPv4-address*[**:***port*] |
         -h *KDC-host-name*[**:***port*]}]
        [**--realm** *realm*]
        [**--defaultrealm** *realm*]
        [**--clockskew** *clock-skew*]
        [**--ticketlifetime** *ticket-lifetime*]
        [**--kpasswdadmin** {*IPv4-address*[**:***port*] | *host-name*[**:***port*]}]
        [**--authtimeout** *seconds*]
        [**--trace** {**on** | **off**}]
        [**--help**]

To change the Integrated Management Module (IMM) settings:
    chhmc -c imm
        -s modify
        [**-a** *IPv4-address* **-nm** *IPv4-network-mask* **-g** *gateway*]
        [**-u** *user-ID* [**--passwd** *password*]]
        [**--mode** {**ded** | **shared**}]
        [**--help**]

To restart the IMM:
    chhmc -c imm
        -s restart
        [**--help**]

To change the HMC security mode (the HMC will automatically be restarted):
    chhmc -c security
        -s modify
        --mode {**legacy** | **nist_sp800_131a**}
        [**-r**]
        [**--help**]

To enable or disable the Event Manager for Call Home:
    chhmc -c emch
        -s {**enable** | **disable**}
        [**--callhome** {**enable** | **disable**}]
        [**--help**]

To enable, disable, or change the GRUB password:
    chhmc -c grubpasswd
        -s {**enable** | **disable** | **modify**}
        [**--passwd** *password*]
        [**--help**]

To change the Baseboard Management Controller (BMC) settings on the dedicated Intelligent Platform Management Interface (IPMI)/BMC port:
    chhmc -c bmc
        -s modify
        [{[**-a** *IPv4-address*] [**-nm** *IPv4-network-mask*] [**-g** *gateway*]} |

      --ipv4dhcp {**on** | **off**}]
    [**--mode** {**ded** | **shared** | **failover**}]
    [**--vlanid** *VLAN-ID*] [**--vlanpriority** *VLAN-priority*]
    [**--help**]

To set the inband BMC credentials on the Power HMC CR2 for problem reporting (the user ID and password must already exist on the BMC):
    chhmc -c bmc
      -s add
      -u *user-ID* [**--passwd** *password*]
      [**--help**]

To change an expired password on the inband BMC and the Power HMC CR2:
    chhmc -c bmc
      -s modify
      [**--passwd** *password*]
      [**--help**]

To set user-defined information for the HMC:
    chhmc -c userdefinfo
      -s modify
      --location *location*
      [**--help**]

To enable or disable the PowerSC UI agent on this HMC:
    chhmc -c powerscuiagent
      -s {**enable** | **disable**}
      [**--help**]

DESCRIPTION
    chhmc changes Hardware Management Console (HMC) configuration information, such as remote access settings and network settings.

OPTIONS
    -c   The type of configuration to be modified. Valid values are **ssh**, **syslog**, **xntp**, **netroute**, **network**, **netbond**, **kbdcfg**, **dispcfg**, **altdiskboot**, **locale**, *service*, **date**, **remotewebui**, **kerberos**, **imm**, **sol** for Serial Over LAN, **security**, **emch** for Event Manager for Call Home, **grubpasswd**, **bmc**, **userdefinfo**, and **powerscuiagent**.

            For configuring the firewall settings, the valid *service*s are **SecureRemoteAccess.name**, **RMC.name**, **FCS.name**, **i5250.name**, **ping.name**, **ntp.name**, **RPD.name**, **snmptrap.name**, and **snmpagent.name**.

    -s   The new state value of the configuration. Valid values are **enable**, **disable**, **add**, **modify**, **remove**, and **restart**.

    -i   The interface to configure, such as **eth0** or **sl0**.

            If this option is omitted when adding a static route, the route will be added for each interface.

            When configuring a network bond, exactly two comma-separated interfaces must be specified.

            When configuring firewall settings, a network bond name can be specified with this option.

    -a   The network IP address.

            For network interface configuration, this is the static IP address configuration. Valid values are:

        none - no static IP address configured
        list - specify a comma-separated list of static IP
            addresses. The list can contain zero or one
            static IPv4 address and zero or more static
            IPv6 addresses in the following format:
            static-address/prefix-length

For DHCP server configuration, you can specify a custom or preconfigured HMC DHCP server IPv4 address. If you specify a custom address, you must also specify the **-nm** and **--range** options. For a list of all preconfigured HMC DHCP server addresses, issue the **lshmc -D** command.

For all other operations except Kerberos, IMM, BMC, and network bond configuration, an IPv4 or IPv6 address can be specified.

For Kerberos configuration, use this option to specify the IPv4 address of the Key Distribution Center (KDC). An optional port number can be specified following the IPv4 address. If the KDC has an IPv6 address, then you cannot use this option to specify the IP address of the KDC. You must use the **-h** option to specify the host name of the KDC instead. Either this option or the **-h** option to specify the KDC is required for a Kerberos add or remove operation. This option is not valid for a Kerberos modify operation.

-nm   The IPv4 network mask.

--ipv6   Specify this option to enable or disable IPv6 on the HMC. When disabled, no link-local IPv6 addresses will be automatically assigned to the HMC network interfaces.

        IPv6 is enabled by default on the HMC.

--ipv6auto
        The IPv6 autoconfiguration setting for the network interface.

        Valid values are:
            on - autoconfigure IPv6 addresses
            off - do not autoconfigure IPv6 addresses

--ipv6privacy
        The IPv6 privacy extension setting for the network interface.

        Valid values are:
            on - use privacy extensions for autoconfiguration
            off - do not use privacy extensions for autoconfiguration

--ipv6dhcp
        The IPv6 DHCP setting for the network interface.

        Valid values are:
            on - obtain an IPv6 address automatically via DHCP
            off - do not obtain an IPv6 address automatically via DHCP

--ipv4dhcp
        The IPv4 DHCP setting for the network interface or the BMC.

        Valid values are:
            on - obtain an IPv4 address automatically via DHCP
            off - do not obtain an IPv4 address automatically via DHCP

        This option cannot be used if a static IPv4 address has also been specified with the **-a** option.

--lparcomm
> The partition communication setting for the network interface.
>
> This option has been deprecated. Use the **chpsm** command to configure which network interfaces are enabled for partition communication.

--tso   The TCP segmentation offload (TSO) setting for the network interface.

> Valid values are:
> > **on** - enable TSO
> > **off** - disable TSO

--speed The speed setting for the network interface.

> Valid values are:
> > **auto** - automatically detect and set speed
> > **10**   - 10Mbps
> > **100** - 100Mbps
> > **1000** - 1000Mbps
>
> Specify **auto** unless you have a requirement to use a fixed speed setting.

--duplex
> The duplex setting for the network interface.
>
> Valid values are:
> > **auto** - automatically detect and set duplex
> > **half** - half duplex
> > **full** - full duplex
>
> Specify **auto** unless you have a requirement to use a fixed duplex setting.
>
> Valid combinations of **--speed** and **--duplex** are:
> > **--speed auto --duplex auto**
> > **--speed 10   --duplex half**
> > **--speed 10   --duplex full**
> > **--speed 100 --duplex half**
> > **--speed 100 --duplex full**
> > **--speed 1000 --duplex full**

--jumboframe
> Enables or disables jumbo frames on the network interface. The jumbo frame size is 9000 bytes.
>
> Valid values are:
> > **on** - enable jumbo frames
> > **off** - disable jumbo frames
>
> **Do not enable jumbo frames on the network interface that is used to connect to managed systems or managed frames. Managed systems and managed frames do not support jumbo frames.**

-d   The network domain name.

-h   The host name.

> For Kerberos configuration, use this option to specify the host name of the Key Distribution Center (KDC). An optional port number can be specified following the host name. Also, either this option or the **-a** option to specify the KDC is required for a Kerberos add or remove operation.

This option is not valid for a Kerberos modify operation.

-g   The default gateway IP address.

-ns   The nameserver IP address to add or remove.

--dns   Specify this option to enable or disable DNS on the HMC.

-ds   The domain suffix to add or remove.

--dhcpserver

Enables or disables the network interface as a DHCP server.

Valid values are:
    on - enable DHCP server
    off - disable DHCP server

--range

The range of IPv4 addresses the DHCP server can lease. **range** must be specified using the following format:

starting-IPv4-address,ending-IPv4-address

This option is required when configuring a custom DHCP server address and is not valid otherwise.

--routetype

The type of static route to add. Valid values are **host** to add a static route to a host and **net** to add a static route to a network.

--position

The position in the routing table of the static route to add or remove.

When adding a static route, if this option is omitted or if the position specified is greater than the position of the first default route entry, the route entry will be added to the routing table just before the first default route entry.

The **lshmc --netroute** command can be used to display the position of all of the static route entries in the routing table.

-b   The name of the network bond to modify or remove. When a network bond is added, the HMC assigns a name to the network bond that the user cannot change. The **lshmc --netbond** command can be used to display the network bond names.

When modifying or removing a network bond, this option is required. This option is not valid for any other operation.

--source

When adding a network bond, you can use this option to specify the network interface from which you want to obtain the network and firewall settings for the bond.

This option is only valid when adding a network bond.

--primary

When adding or modifying a network bond with a bonding mode of active-backup, use this option to specify which bond interface is to be active first.

This option is only valid when adding or modifying a network bond with a bonding mode of active-backup.

--ntpversion
> The NTP version. Versions 1 - 4 are supported.

--mode   When configuring an alternate disk partition on the HMC as the startup device, specify the mode to use when starting up. Valid values are **install** and **upgrade**. The default value is **upgrade**.

> When configuring the HMC IMM settings, specify the IMM network interface mode. Valid values are **ded** for dedicated and **shared**. The default value is **ded**.

> When configuring the HMC BMC settings, specify the BMC interface mode. Valid values are **ded** for dedicated, **shared**, and **failover**. If this option is omitted on an HMC with a single BMC interface, it will default to the type of that interface. If this option is omitted on an HMC with both a dedicated and a shared BMC interface, it will default to dedicated. The **failover** mode is only supported on the Power HMC CR1.

> When configuring the HMC security mode, valid values are **legacy** for no security mode, and **nist_sp800_131a** for NIST SP 800-131A (National Institute of Standards and Technology Special Publication 800-131A). The default value is **legacy**. The HMC will automatically be restarted after the security mode is changed.

> When adding or modifying a network bond, specify the bonding mode. Valid values are **active-backup** for active-backup, and **roundrobin** for round-robin. When adding a network bond, the default value is **roundrobin**.

--vlanid
> The VLAN ID for the BMC network interface. Valid values are **off** to disable VLAN and **1** - **4094** to enable VLAN and set the specified value as the VLAN ID.

--vlanpriority
> The VLAN priority for the BMC network interface. Valid values are **0** - **7**.

-r   When changing the HMC security mode, specify this option to cause the HMC to automatically be restarted without asking for confirmation.

-l   The locale. For a list of all locales supported by the HMC, issue the **lshmc -L** command.

> For the new locale to take effect for the local HMC console, you must log off the console and log back on. For the new locale to take effect for the HMC command line, you must reboot the HMC.

--datetime
> The new date and time to set on the HMC's clock. *date-time* must be specified using the following format:

> *MMDDhhmm*[[*CC*]*YY*][**.**ss]

> where *MM* is the month, *DD* is the day, *hh* is the hour in 24 hour format, *mm* is the minutes, *CC* is the century, *YY* is the year, and *ss* is the seconds.

> You must reboot the HMC after setting the date and time.

--timezone
> The time zone to set for the HMC. *time-zone* must be specified in *continent*/*city* format.

> You must reboot the HMC after setting the time zone.

--realm
> The Kerberos realm name.

> When the first Kerberos realm and KDC is added to the HMC, that realm is set as the default

realm and Kerberos is automatically enabled on the HMC. When the last Kerberos realm and KDC is removed from the HMC, Kerberos is automatically disabled on the HMC. Then, if another Kerberos realm and KDC is added to the HMC, Kerberos will automatically be enabled again, and the default realm will be set to the new realm. There is no other way to enable or disable Kerberos on the HMC.

This option is required for a Kerberos add or remove operation. This option is not valid for a Kerberos modify operation.

--defaultrealm
> The Kerberos default realm name.
>
> When no realms exist on the HMC, the default realm is automatically set to the next realm that is added to the HMC.
>
> This option is not valid for a Kerberos add or remove operation.

--clockskew
> The Kerberos clock skew value in seconds. This is the maximum allowable amount of clock skew before Kerberos considers messages invalid. The clock skew is set to the default value of 120 seconds whenever Kerberos is enabled on the HMC, unless this option is specified.
>
> This option is not valid for a Kerberos remove operation.

--ticketlifetime
> The Kerberos ticket lifetime value (**lifetime for credentials**). The format of this value is a whole number followed by **s** for seconds, **m** for minutes, **h** for hours, or **d** for days. The ticket lifetime is set to the default value of **2d** (2 days) whenever Kerberos is enabled on the HMC, unless this option is specified.
>
> This option is not valid for a Kerberos remove operation.

--kpasswdadmin
> The Kerberos admin server host name or IP address. This option enables Kerberos users to change their own passwords using the **chhmcusr** command. If a realm is not specified, the default realm is used for the operation.

--authtimeout
> The Kerberos authentication timeout. Valid values are **6** to **60** seconds. The default value is **6** seconds.
>
> This option is only valid for a Kerberos modify operation.

--trace Enables or disables Kerberos authentication logging. When enabled, trace messages are logged in the **/var/log/messages** file on the HMC.

> Valid values are:
>> **on** - enable Kerberos authentication logging
>> **off** - disable Kerberos authentication logging (default value)
>
> This option is only valid for a Kerberos modify operation.

--sshusedns
> The SSH UseDNS setting. Valid values are **enable** to set UseDNS to yes and **disable** to set UseDNS to no. The default value is **enable**.

--sshtimeout

> The SSH timeout value in minutes. This is the maximum amount of time that an SSH session can remain idle or inactive before it is closed. Valid values are **0** to **120** minutes. A value of **0** disables the SSH timeout. The default value is **0**.
>
> This option is only valid for an SSH enable or modify operation.

-u   The new IMM user ID or the inband BMC user ID.

--passwd

> The new IMM user password, the new GRUB password, or the inband BMC password. If this option is omitted, you will be prompted to enter the password.

-t   The type of connection to use for forwarding syslog messages to the remote destination. Valid values are **tcp** for unencrypted TCP, **tls** for TLS encrypted TCP, and **udp** for unencrypted UDP.

> If this option is not specified, it defaults to **udp**.
>
> The HMC does not support both encrypted and unencrypted remote system logging destinations simultaneously.
>
> Before TLS encrypted system logging over TCP can be enabled, the **getfile** command must be run to deploy the rsyslog certificate files and private key file on the HMC.

-f   The name of the file containing the input data for this command. The input data consists of attribute name/value pairs, which are in comma separated value (CSV) format.

> The format of the input data is as follows:
>
> "*attribute-name*=*value*,*value*,...",...
>
> When a list of values is specified, the attribute name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.
>
> If '+=' is used in the attribute name/value pair instead of '=', the specified value is added to the existing list.
>
> If '-=' is used in the attribute name/value pair instead of '=', the specified value is deleted from the existing list.
>
> Valid attributes for this command:
> > **filter_msg_contains_discard_strings**
> > > Defines a property-based syslog message filter that discards all syslog messages containing the specified strings in their message text
>
> Input data for this command can be specified with this option or the **--input** option. The **-f** and the **--input** options are mutually exclusive.
>
> This option is only valid for a syslog add or modify operation.

--input   This option allows you to enter input data on the command line, instead of using a file. Data entered on the command line must follow the same format as data in a file, and must be enclosed in double quotes.

> Input data for this command can be specified with this option or the **-f** option. The **--input** and the

-f options are mutually exclusive.

This option is only valid for a syslog add or modify operation.

--callhome
When disabling the Event Manager for Call Home, use this option to specify whether automatic call home is to remain disabled or automatic call home is to be enabled. This option is required and only allowed when disabling the Event Manager for Call Home.

Valid values are:
    disable - automatic call home is to remain disabled
    enable - enable automatic call home

When the Event Manager for Call Home is enabled, automatic call home is automatically disabled.

--location
The physical location of the HMC.

--force Specify this option to force TLS encrypted system logging over TCP to be disabled when there are remote system logging destinations configured. All configured remote system logging destinations will be removed.

Also specify this option to force the date and time to be changed on a Power HMC when NTP is enabled on the BMC. The HMC clock will be changed to the new time, but the hardware clock will not.

--help Display the help text for this command and exit.

EXAMPLES
To change the Hardware Management Console host name:

chhmc -c network -s modify -h mynewhost

To set the IP address and network mask for network interface eth0:

chhmc -c network -s modify -i eth0 -a 10.10.10.1
 -nm 255.255.255.0

To enable DNS on the HMC:

chhmc -c network -s enable --dns

To add a network bond configured with the network and firewall settings of **eth0**:

chhmc -c netbond -s add -i eth0,eth1 --source eth0

To remove a network bond:

chhmc -c netbond -s remove -b bond0

To configure the HMC as a DHCP server using a preconfigured HMC DHCP server IP address, network mask, and range:

chhmc -c network -s modify -i eth0 --dhcpserver on -a 10.127.0.1

To configure the HMC as a DHCP server using a custom HMC DHCP server IP address, network mask, and range:

chhmc -c network -s modify -i eth0 --dhcpserver on -a 10.2.255.1
-nm 255.255.255.0 --range 10.2.255.2,10.2.255.254

To disable IPv6 on the HMC:

chhmc -c network -s disable --ipv6

To add a static route to the network **192.165.31.0** for interface **eth0** to the beginning of the routing table:

chhmc -c netroute -s add --routetype net -a 192.165.31.0
-nm 255.255.255.0 -g 192.165.178.1 -i eth0 --position 1

To remove the static route entry in position 3 of the routing table:

chhmc -c netroute -s remove --position 3

To enable remote access via SSH and set an SSH timeout value of 1 hour:

chhmc -c ssh -s enable --sshtimeout 60

To enable remote access via Serial Over LAN:

chhmc -c sol -s enable

To disable remote web browser access from all IP addresses over network interface eth0:

chhmc -c remotewebui -s disable -i eth0

To add a remote system logging destination that will receive syslog messages over UDP:

chhmc -c syslog -s add -a 10.10.10.2

To enable TLS encrypted system logging over TCP:

chhmc -c syslog -s enable -t tls

To add a remote system logging destination that will receive TLS encrypted syslog messages over TCP:

chhmc -c syslog -s add -t tls -h secure.ibm.com

To set a syslog filter for the server **secure.ibm.com**. The filter will cause all syslog messages that contain the string **informational** in their message text to be discarded:

chhmc -c syslog -s modify -t tls -h secure.ibm.com --input
"filter_msg_contains_discard_strings=informational"

To remove the syslog filter for the server **secure.ibm.com**:

chhmc -c syslog -s modify -t tls -h secure.ibm.com --input
"filter_msg_contains_discard_strings="

To enable keyboard mapping configuration to occur on the next reboot:

chhmc -c kbdcfg -s enable

To enable display configuration to occur on the next reboot:

chhmc -c dispcfg -s enable

To permit a single IP address to use the ssh service over network interface eth0:

**chhmc -c ssh -s add -a 10.10.10.3 -nm 255.255.255.255
 -i eth0**

To enable Network Time Protocol service:

chhmc -c xntp -s enable

To add a Network Time Protocol server to the configuration file:

chhmc -c xntp -s add -h mytimeserver.company.com

Specify the hostname will not change firewall rule settings. It is assumed that the user will use the Customize Network Settings to change firewall settings.

To add a Network Time Protocol server to the configuration file, using IP address and at the same time enable firewall access through network interface eth0:

chhmc -c xntp -s add -a 10.10.10.32 -i eth0

To remove a Network Time Protocol server from the configuration file:

chhmc -c xntp -s remove -h mytimeserver.company.com

To set the current locale to Spanish:

chhmc -c locale -s modify -l es_ES

To set the alternate disk partition on HMC as a startup device on the next HMC boot:

chhmc -c altdiskboot -s enable --mode upgrade

To update the HMC clock to January 25, 2007 14:30:50 (the current year is 2007):

chhmc -c date -s modify --datetime 01251430.50 or

chhmc -c date -s modify --datetime 012514302007.50 or

chhmc -c date -s modify --datetime 0125143007.50

To update the HMC time zone to United States, Central time:

chhmc -c date -s modify --timezone America/Chicago

To add a Kerberos realm and KDC to the HMC:

chhmc -c kerberos -s add --realm EXAMPLE.COM -a 10.10.0.20

To add a Kerberos admin server and allow Kerberos users to change their own passwords using the

chhmcusr command:

chhmc -c kerberos -s add --kpasswdadmin 10.10.0.20 or

chhmc -c kerberos -s add --kpasswdadmin 10.10.0.20 --realm EXAMPLE.COM

To replace a Kerberos admin server:

chhmc -c kerberos -s modify --kpasswdadmin 10.10.0.20 or

chhmc -c kerberos -s modify --kpasswdadmin 10.10.0.20 --realm EXAMPLE.COM

To remove the Kerberos admin server:

chhmc -c kerberos -s remove --kpasswdadmin 10.10.0.20 --realm EXAMPLE.COM

To add a Kerberos realm and KDC and set the clock skew to 140 seconds and ticket lifetime to 1 day:

chhmc -c kerberos -s add --realm EXAMPLE.COM -h kdc.example.com:88 --clockskew 140 --ticketlifetime 1d

To remove a Kerberos realm and KDC from the HMC:

chhmc -c kerberos -s remove --realm EXAMPLE.COM -h kdc.example.com

To modify the Kerberos default realm on the HMC:

chhmc -c kerberos -s modify --defaultrealm EXAMPLE2.COM

To modify the Kerberos clock skew to 60 seconds on the HMC:

chhmc -c kerberos -s modify --clockskew 60

To modify the Kerberos ticket lifetime to 12 hours on the HMC:

chhmc -c kerberos -s modify --ticketlifetime 12h

To change the IMM network settings:

chhmc -c imm -s modify -a 9.3.99.100 -nm 255.255.255.0 -g 9.3.99.1 chhmc -c imm -s restart (to apply the new network settings)

To change the IMM user ID and password (the password must be entered when prompted):

chhmc -c imm -s modify -u immusername

To enable NIST SP 800-131A mode:

chhmc -c security -s modify --mode nist_sp800_131a

To enable the Event Manager for Call Home:

chhmc -c emch -s enable

To enable and set a GRUB password:

chhmc -c grubpasswd -s enable --passwd myPassword

To change the GRUB password (the password must be entered when prompted):

chhmc -c grubpasswd -s modify

To change the BMC network settings on the dedicated IPMI/BMC port:

chhmc -c bmc -s modify -a 9.3.99.100 -nm 255.255.255.0 -g 9.3.99.1

To set the inband BMC credentials on the HMC for problem reporting:

chhmc -c bmc -s add -u userid --passwd password

To change an expired password on the inband BMC and the HMC:

chhmc -c bmc -s modify --passwd newPassword

To set the physical location of the HMC:

chhmc -c userdefinfo -s modify --location Building 1 / Floor 3

To enable the PowerSC UI agent on this HMC:

chhmc -c powerscuiagent -s enable

ENVIRONMENT
     None

BUGS
     None

AUTHOR
     IBM Austin

SEE ALSO
     lshmc, **chpsm**, **getfile**

NAME

chhmcauth - change HMC multi-factor authentication settings

SYNOPSIS

chhmcauth -t powersc -o {**enable** | **disable** | **set**}
 [**-h** *host-name*] [**-p** *port*] [**-a "***attributes***"**] [**--help**]

DESCRIPTION

chhmcauth changes the multi-factor authentication (MFA) settings for the Hardware Management Console (HMC).

OPTIONS

-t   The type of MFA settings to change. The only valid value is **powersc** to change the PowerSC MFA settings.

-o   The operation to perform. Valid values are **enable** to enable MFA, **disable** to disable MFA, and **set** to set MFA settings.

-h   The host name or IP address of the MFA server.

           This option is required when enabling MFA. This option is not valid when disabling MFA.

-p   The network port number of the MFA server. If this option is not specified when the **-h** option is specified, the network port number is set to 6793.

           This option is only valid when enabling MFA or setting MFA settings.

-a   The attributes to be set with this command. The attribute data consists of attribute name/value pairs, which are in comma separated value (CSV) format. The configuration data must be enclosed in double quotes.

           The format of the configuration data is as follows:

           "*attribute-name***=***value***,***value***,..."**

           If '+=' is used in the attribute name/value pair instead of '=', the specified *value* is added to the existing list.

           If '-=' is used in the attribute name/value pair instead of '=', the specified *value* is deleted from the existing list.

           Valid attribute names:
               allow_list
                   Comma separated list of HMC user names to exempt from
                   MFA when logging in to the HMC using SSH

           This option is only valid when setting MFA settings.

--help   Display the help text for this command and exit.

EXAMPLES

Enable PowerSC MFA for the HMC:

chhmcauth -t powersc -o enable -h 9.3.12.345 -p 7844

Change the PowerSC MFA server host name and use the default port of 6793:

chhmcauth -t powersc -o set -h mfaServer.company.com

Set an allow list to exempt the HMC users **hscroot** and **hscpe** from MFA when logging in using SSH:

chhmcauth -t powersc -o set -a "allow_list=hscroot,hscpe"

Disable PowerSC MFA for the HMC:

chhmcauth -t powersc -o disable

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
lshmcauth

NAME

      chhmccert - change a Hardware Management Console certificate

SYNOPSIS

      To change a self-signed certificate:

          chhmccert -o apply -t self -i "*configuration-data***"**

              [**--force**] [**-r**] [**--help**]

      To import and install a Certificate Authority (CA) signed certificate or a certificate repository:

          chhmccert -o apply -t {**cacert** | **repo**} -f *file-name*

              [**-s** *signing-certificate-file-name*]

              [**-l** {**usb** | **sftp**}] [**-h** *host-name*] [**-u** *user-ID*]

              [**--passwd** *password*] [**-k** *SSH-private-key*] **-d** *directory*

              [**--repopasswd** *repository-password*] [**-r**] [**--help**]

      To install the previously archived certificate:

          chhmccert -o apply -t archivecert [**-r**] [**--help**]

      To delete and archive the current certificate:

          chhmccert -o archiverm [**-r**] [**--help**]

      To add a certificate as trusted to the HMC's truststore:

          chhmccert -o add -t trustedcert -a *alias*

              -l {**usb** | **sftp** | **trustedsslserver**}

              [**-h** *host-name*] [**-u** *user-ID*]

              [**--passwd** *password*] [**-k** *SSH-private-key*]

              [**-f** *file-name*] [**-d** *directory*]

              [**--proxyserver** *host-name***:***port*]

              [**--proxyuser** *user-ID*] [**--proxypasswd** *password*]

              [**-r**] [**--help**]

      To remove a trusted certificate from the HMC's truststore:

          chhmccert -o remove -t trustedcert -a *alias* [**-r**] [**--help**]

      To change the expiration date for the certificate on this HMC used for HMC to HMC communication:

          chhmccert -o apply -t fcs -n *number-of-days* [**-r**] [**--help**]

      To change the default setting for the number of days until certificate expiration:

          chhmccert -o set -n *number-of-days* [**--help**]

DESCRIPTION

      chhmccert changes the Hardware Management Console (HMC) certificate, or adds or removes a certificate
      to or from the HMC's truststore. The HMC will automatically be restarted to apply the certificate changes.

      chhmccert also changes the expiration date for the certificate on this HMC used for HMC to HMC com-
      munication. An HMC restart is required to apply the certificate change on this HMC. After this HMC is
      restarted, communication from this HMC to other HMCs cannot be reestablished until the **cpfile** command
      is used to copy and apply this certificate to the other HMCs.

      chhmccert also changes the HMC default setting for the number of days until certificate expiration. The
      new default setting will be applied to newly created certificates or certificate signing requests only.

OPTIONS

      -o   The operation to perform. Valid values are **apply** to apply a certificate, **archiverm** to delete and
               archive the current certificate, **add** to add a certificate as trusted to the HMC's truststore, **remove**
               to remove a trusted certificate from the HMC's truststore, and **set** to change the HMC default

setting for the number of days until certificate expiration.

-t The type of certificate to apply, add, or remove. Valid values are **self** to apply changes to a self-signed certificate, **cacert** to apply an imported CA signed certificate, **repo** to apply an imported certificate repository, **archivecert** to apply the previously archived certificate, **trustedcert** to add or remove a trusted certificate, and **fcs** to apply changes to the certificate used for HMC to HMC communication.

-f The name of the file containing the CA signed certificate or certificate repository to import and apply, or the certificate to add as trusted to the HMC's truststore.

When adding a certificate as trusted this option is required when the certificate is located on a USB data storage device, an SFTP server, or the HMC hard disk. Otherwise, this option is not valid.

-s The name of file containing the signing certificate to import. Multiple file names can be specified with this option. Multiple file names must be comma separated.

This option is only valid when importing and applying a CA signed certificate.

-l The location where the CA signed certificate, certificate repository, or certificate to be added as trusted is located. Valid values are **usb** for a USB data storage device, **sftp** for a secure FTP (SFTP) server, or **trustedsslserver** for a trusted server.

If this option is not specified, the CA signed certificate, certificate repository, or certificate to be added as trusted will be imported from the HMC hard disk.

-h The host name or IP address of the SFTP server where the CA signed certificate, certificate repository, or certificate to be added as trusted is located, or the host name or IP address of the trusted server where the certificate to be added as trusted is located.

This option is required when the CA signed certificate or certificate repository is located on an SFTP server, and when the certificate to be added as trusted is located on an SFTP server or a trusted server. Otherwise, this option is not valid.

-u The user ID to use to log in to the SFTP server.

This option is required when the CA signed certificate, certificate repository, or certificate to be added as trusted is located on an SFTP server. Otherwise, this option is not valid.

--passwd
The password to use to log in to the SFTP server.

If both this option and the **-k** option are omitted, you will be prompted to enter the password. The **--passwd** and **-k** options are mutually exclusive.

This option is only valid when the CA signed certificate, certificate repository, or certificate to be added as trusted is located on an SFTP server.

-k The name of the file that contains the SSH private key. If the file name is not fully qualified, the file must exist in the user's home directory on the HMC.

Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen** command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so when you run the command on the HMC, you must specify both the directory and the file name for the private key. If you generate a key with a passphrase, you will be prompted to enter the passphrase when you run any HMC command that uses the key.

If both this option and the **--passwd** option are omitted and the CA signed certificate or certificate repository is located on an SFTP server, you will be prompted to enter the password. The **-k** and

--passwd options are mutually exclusive.

This option is only valid when the CA signed certificate, certificate repository, or certificate to be added as trusted is located an SFTP server.

-d   The directory where the CA signed certificate, certificate repository, or certificate to be added as trusted is located.

When adding a certificate as trusted this option is required when the certificate is located on a USB data storage device, an SFTP server, or the HMC hard disk. Otherwise, this option is not valid.

--repopasswd
The password for the certificate repository. If this option is omitted you will be prompted to enter the password.

This option is only valid when importing and applying a certificate repository.

-a   The alias for the trusted certificate to add or remove.

--proxyserver
The host name or IP address of the HTTP or HTTPS proxy server. The port can be specified following the host name or IP address with **:**_port_. If port is omitted, it will default to **3128**.

This option is only valid when the certificate to be added as trusted is located on a trusted server.

--proxyuser
The user ID to use to log in to the proxy server when user authentication is required for the proxy connection.

--proxypasswd
The password to use to log in to the proxy server when user authentication is required for the proxy connection.

If this option is omitted when the **--proxyuser** option is specified, you will be prompted to enter the password.

-n   The number of days until certificate expiration.

-i   The input data for the command. The input data consists of attribute name/value pairs, which are in comma separated value (CSV) format.

The format of the input data is as follows:

attribute-name=_value_**,**_attribute-name_=_value_**,**_..._

Note that certain attributes accept a comma separated list of values, as follows:

"_attribute-name_=_value_**,**_value_**,**_..._**",**_..._

When a list of values is specified, the attribute name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

If '+=' is used in the attribute name/value pair instead of '=', the specified value is added to the existing list.

If '-=' is used in the attribute name/value pair instead of '=', the specified value is deleted from the existing list.

Valid attribute names for this command:

org

org_unit

country
Two-character ISO country code

state

locality

days_to_expire

email

ipaddrs
Comma separated list

dns
Comma separated list

key_size
Valid values are **2048**, **3072**, and **4096**

-r   Specify this option to cause the HMC to automatically be restarted without asking for confirmation after applying a certificate or adding or removing a trusted certificate.

--force Specify this option to allow a self-signed certificate to be applied without a domain name.

--help Display the help text for this command and exit.

EXAMPLES

Change a self-signed certificate (the HMC will automatically be restarted to install the certificate):

chhmccert -o apply -t self -i "days_to_expire=730,ipaddrs+=9.2.155.120"

Import and install a CA signed certificate from an SFTP server using SSH keys for authentication, and restart the HMC without asking for confirmation:

chhmccert -t cacert -f certfile -s signingfile1,signingfile2 -l sftp
-h server.company.com -u sftpuser -k /home/hmcuser/keys/id_rsa
-d /home/sftpuser/certs -r

To install the previously archived certificate (the HMC will automatically be restarted to install the certificate):

chhmccert -o apply -t archivecert

Change the expiration date for the certificate on this HMC used for HMC to HMC communication:

chhmccert -o apply -t fcs -n 180

Delete and archive the current certificate and restart the HMC without asking for confirmation:

chhmccert -o archiverm -r

Add a certificate located on a trusted server to the HMC's truststore:

chhmccert -o add -t trustedcert -l trustedsslserver -a cmccert
-h cmcportal-powercloud.mybluemix.net

Add a certificate located on a trusted server and use a proxy connection with authentication:

chhmccert -o add -t trustedcert -l trustedsslserver -a cmccert
-h cmcportal-powercloud.mybluemix.net --proxyserver 9.124.125.229:8080

--proxyuser userID --proxypasswd password

Remove a trusted certificate:

chhmccert -o remove -t trustedcert -a cmccert

Change the HMC default setting for the number of days until certificate expiration:

chhmccert -o set -n 365

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
chhmccert, **cpfile**, **lshmccert**

NAME
      chhmcencr - change HMC encryption support

SYNOPSIS
      chhmcencr -c {**passwd** | **webui** | **ssh** | **sshmac** | **sshkey**} **-o** {**a** | **r** | **s**}
      -e *encryption* [**-r**] [**--help**]

DESCRIPTION
      chhmcencr changes which encryption is used by the Hardware Management Console (HMC) to encrypt
      the passwords of locally authenticated HMC users. The new encryption will be used when a locally authen-
      ticated HMC user is created, or when the password for a locally authenticated HMC user is changed. The
      passwords of existing locally authenticated HMC users will not be affected by the encryption change until
      the passwords for those users are changed.

      chhmcencr also changes which encryption ciphers can be used by the HMC Web user interface. The HMC
      will automatically be restarted after any HMC Web user interface encryption ciphers are changed.

      chhmcencr also changes which encryption ciphers, Message Authentication Code (MAC) algorithms, and
      key exchange algorithms can be used by the HMC Secure Shell (SSH) interface.

OPTIONS
      -c   The encryption configuration to change. Valid values are **passwd** to change which password
                  encryption is used for locally authenticated HMC users, **webui** to change which encryption ciphers
                  can be used by the HMC Web user interface, **ssh** to change which encryption ciphers can be used
                  by the HMC SSH interface, **sshmac** to change which MAC algorithms can be used by the HMC
                  SSH interface, or **sshkey** to change which key exchange algorithms can be used by the HMC SSH
                  interface.

      -o   The operation to perform.

                  Specify **a** to add one or more encryption ciphers to the list of encryption ciphers currently sup-
                  ported by the HMC Web user interface or SSH interface. Also specify **a** to add one or more MAC
                  or key exchange algorithms to the list of MAC or key exchange algorithms currently supported by
                  the HMC SSH interface.

                  Specify **r** to remove one or more encryption ciphers from the list of encryption ciphers currently
                  supported by the HMC Web user interface or SSH interface. Also specify **r** to remove one or
                  more MAC or key exchange algorithms from the list of MAC or key exchange algorithms cur-
                  rently supported by the HMC SSH interface.

                  Specify **s** to set the encryption to use to encrypt the passwords of locally authenticated HMC users
                  for all subsequent user creations and user password modifications.

      -e   The password encryption, encryption cipher, MAC algorithm, or key exchange algorithm to add,
                  remove, or set. When adding or removing encryption ciphers or MAC or key exchange algorithms,
                  multiple encryption ciphers or MAC or key exchange algorithms can be specified and must be
                  comma separated. Encryption ciphers and MAC and key exchange algorithms are added to the end
                  of their lists. The order of the encryption ciphers and MAC and key exchange algorithms in their
                  lists is the order the HMC attempts to use them.

                  A list of all of the HMC password encryptions, encryption ciphers, MAC algorithms, and key
                  exchange algorithms available on the HMC can be obtained from the **lshmcencr** command.

      -r   When changing the encryption ciphers that can be used by the HMC Web user interface, specify
                  this option to cause the HMC to automatically be restarted without asking for confirmation.

      --help Display the help text for this command and exit.

EXAMPLES

Set the password encryption to be used for all subsequent HMC user creations or password modifications to SHA-512:

chhmcencr -c passwd -o s -e sha512

Remove **TLS_ECDH_ECDSA_WITH_AES_128_GCM_SHA256** from the encryption ciphers currently supported by the HMC Web user interface (you will be prompted to confirm the HMC restart):

chhmcencr -c webui -o r -e TLS_ECDH_ECDSA_WITH_AES_128_GCM_SHA256

Add   **TLS_ECDH_ECDSA_WITH_AES_128_GCM_SHA256**   and **TLS_DHE_DSS_WITH_AES_128_GCM_SHA256** to the encryption ciphers currently supported by the HMC Web user interface and restart the HMC without being prompted for confirmation:

chhmcencr -c webui -o a -r -e
 TLS_ECDH_ECDSA_WITH_AES_128_GCM_SHA256,TLS_DHE_DSS_WITH_AES_128_GCM_SHA256

Remove **aes128-ctr** and **aes128-gcm@openssh.com** from the encryption ciphers currently supported by the HMC SSH interface:

chhmcencr -c ssh -o r -e aes128-ctr,aes128-gcm@openssh.com

Add **hmac-sha2-256** to the MAC algorithms currently supported by the HMC SSH interface:

chhmcencr -c sshmac -o a -e hmac-sha2-256

Remove **curve25519-sha256** from the key exchange algorithms currently supported by the HMC SSH interface:

chhmcencr -c sshkey -o r -e curve25519-sha256

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

lshmcencr

NAME
      chhmcfs - free up space in HMC file systems

SYNOPSIS
      chhmcfs -o f {**-d** *days* | **-h** *hours* | **-s** *size*}
       [**-f** *file-system*] [**--help**]

DESCRIPTION
      chhmcfs frees up space in Hardware Management Console (HMC) file systems. Space is freed by remov-
      ing temporary HMC files that are used for HMC and managed system firmware problem analysis from the
      HMC hard disk.

      This command can free up space in the following file systems: **/var**, **/var/hsc/log**, **/dump**, **/extra**, **/data**,
      and **/**. The temporary files that can be removed from the **/var** and **/var/hsc/log** file systems include HMC
      trace and log files. The temporary files that can be removed from the **/dump** file system include managed
      system dumps, managed frame dumps, and debug data collected using the HMC **pedbg** command. The
      temporary files that can be removed from the **/extra** file system include managed system dumps and man-
      aged frame dumps. The temporary files that can be removed from the **/data** file system include HMC Java
      core dump and heap dump files, and service files called home with serviceable events.

      This command will not remove temporary HMC trace and log files that are in use.

OPTIONS
      -o   The operation to perform. The only valid value is **f** to free up file system disk space by removing
              temporary HMC files from the hard disk.

      -d   Remove temporary HMC files which have not been modified during the specified number of *days*
              prior to now.

              If **0** is specified with this option, all temporary HMC files will be removed.

              Specifying **-d 1** is equivalent to specifying **-h 24**.

              The **-d**, **-h**, and **-s** options are mutually exclusive.

      -h   Remove temporary HMC files which have not been modified during the specified number of *hours*
              prior to now.

              If **0** is specified with this option, all temporary HMC files will be removed.

              The **-d**, **-h**, and **-s** options are mutually exclusive.

      -s   Remove temporary HMC files, starting with the oldest file, to free up to *size* megabytes in each file
              system.

              The **-d**, **-h**, and **-s** options are mutually exclusive.

      -f   The file system from which to remove files. Valid values are **/var**, **/var/hsc/log**, **/dump**, **/extra**,
              /data, and **/**.

              If this option is omitted, files will be removed from all file systems that have temporary HMC files
              that can be removed.

      --help Display the help text for this command and exit.

EXAMPLES
      Remove temporary HMC files which have not been modified during the last day (24 hours) from all file
      systems:

      chhmcfs -o f -d 1

Remove all temporary HMC files from all file systems:

chhmcfs -o f -d 0

Remove temporary HMC files which have not been modified during the last 36 hours from the **/var** file system:

chhmcfs -o f -h 36 -f /var

Remove temporary HMC files from the **/dump** file system to free up to 100 MB:

chhmcfs -o f -s 100 -f /dump

ENVIRONMENT
    None

BUGS
    None

AUTHOR
    IBM Austin

SEE ALSO
    lshmcfs

NAME
    chhmcldap - change HMC LDAP configuration

SYNOPSIS
    To set HMC LDAP configuration attributes:
      chhmcldap -o s [**--primary** *LDAP-server-URI*]
          [**--backup** *LDAP-server-URI*] [**--basedn** *base-DNs*]
          [**--binddn** *bind-DN*] [**--bindpw** *bind-password*]
          [**--timelimit** *time-limit*]
          [**--bindtimelimit** *bind-time-limit*]
          [**--automanage** {**0** | **1**}]
          [**--auth** {**ldap** | **kerberos**}]
          [**--loginattribute** *attribute*]
          [**--hmcuserpropsattribute** *attribute*]
          [**--hmcauthnameattribute** *attribute*]
          [**--searchfilter** *LDAP-search-filter*]
          [**--scope** {**one** | **sub**}]
          [**--referrals** {**0** | **1**}] [**--starttls** {**0** | **1**}]
          [**--hmcgroups** *group-names*]
          [**--authsearch** {**base** | **none**}]

    To remove an LDAP resource or the LDAP configuration from the HMC:
      chhmcldap -o r
        -r {**backup** | **ldap** | **binddn** | **bindpw** |
          searchfilter | **hmcgroups**}

DESCRIPTION
    chhmcldap changes the Hardware Management Console (HMC) Lightweight Directory Access Protocol
    (LDAP) client configuration.

    By default, LDAP is not configured on the HMC. The HMC can only be configured as an LDAP client. To
    configure the HMC as an LDAP client, issue this command and specify both the primary LDAP server and
    the base Distinguished Name (DN) at a minimum.

    The **getfile** command can be used to deploy an LDAP Certificate Authority (CA) certificate file on the
    HMC.

OPTIONS
    -o   The operation to perform. Valid values are **s** to set an HMC LDAP configuration attribute, and **r** to
        remove an LDAP resource or the LDAP configuration from the HMC.

    -r   The LDAP resource to remove. Valid values are **backup** to remove the backup LDAP server, **ldap**
        to unconfigure LDAP on the HMC, **binddn** to remove the bind Distinguished Name (DN),
        bindpw to remove the bind password, **searchfilter** to remove the LDAP search filter, and **hmc-**
        groups to remove the HMC user group configuration.

        This option is required for a remove operation. This option is not valid for a set operation.

    --primary
        The primary LDAP server. The Uniform Resource Identifier (URI) scheme may be **ldap://** for
        LDAP over TCP, or **ldaps://** for LDAP over SSL. The URI format is **ldap://***LDAP-server*[**:***port-*
        number] or **ldaps://***LDAP-server*[**:***port-number*]. *LDAP-server* can either be the host name or the
        IP address of the LDAP server. The port number is optional. If the port number is omitted, port
        389 is used for the **ldap://** scheme and port 636 is used for the **ldaps://** scheme. If Start TLS is
        enabled, the URI must use the **ldap://** scheme.

        If LDAP is not configured on the HMC, both this option and the **--basedn** option must be specified

to configure LDAP on the HMC.

This option is only valid for a set operation.

--backup

The backup LDAP server. The URI scheme may be **ldap://** for LDAP over TCP, or **ldaps://** for LDAP over SSL. The URI format is **ldap://***LDAP-server*[**:***port-number*] or **ldaps://***LDAP-server*[**:***port-number*]. *LDAP-server* can either be the host name or the IP address of the LDAP server. The port number is optional. If the port number is omitted, port 389 is used for the **ldap://** scheme and port 636 is used for the **ldaps://** scheme. If Start TLS is enabled, the URI must use the **ldap://** scheme.

This option is only valid for a set operation. Setting a backup LDAP server is optional.

--basedn

The base DN for LDAP search. Base DNs must be specified in LDAP format (e.g. **dc=ldap-client,dc=example,dc=com**).

Multiple base DNs can be specified for LDAP search. When multiple base DNs are specified, they must be specified in comma separated value (CSV) format.

If LDAP is not configured on the HMC, both this option and the **--primary** option must be specified to configure LDAP on the HMC.

This option is only valid for a set operation.

--binddn

The DN to use for binding to the LDAP server when the LDAP server is configured to use non-anonymous binding. The bind DN must be specified in LDAP format (e.g. **cn=admin,dc=yourorg,dc=com**).

This option is only valid for a set operation.

--bindpw

The password to use when binding to the LDAP server when the LDAP server is configured to use non-anonymous binding.

This option is only valid for a set operation.

--timelimit

The LDAP search time limit in seconds. A value of 0 means there is no time limit. If this option is not specified when LDAP is configured, the search time limit is set to 30 seconds.

This option is only valid for a set operation.

--bindtimelimit

The LDAP server bind time limit in seconds. If this option is not specified when LDAP is configured, the bind time limit is set to 30 seconds.

This option is only valid for a set operation.

--automanage

Use this option to indicate whether the HMC should automatically manage remotely authenticated LDAP users. Valid values are **0** to disable automatic management, or **1** to enable automatic management.

When automatic management is enabled, an LDAP user can log in to the HMC. An HMC user will be automatically created for the LDAP user if the HMC user does not exist when the LDAP user logs in. If the HMC user already exists, it will be updated with the current user definition

retrieved from the LDAP server when the LDAP user logs in.

If this option is not specified when LDAP is configured, automatic management is disabled.

This option is only valid for a set operation.

--auth   The type of authentication to use for automatically managed LDAP users. Valid values are **ldap** to use LDAP authentication, or **kerberos** to use Kerberos authentication.

If **kerberos** is specified and Kerberos is not enabled on the HMC, LDAP users will not be able to log in to the HMC because the HMC will not be able to retrieve the user data from the LDAP server.

If this option is not specified when LDAP is configured, LDAP authentication will be used.

This option is only valid for a set operation.

--loginattribute

The login attribute to use to authenticate LDAP users on the HMC. The value of the login attribute stored on the LDAP server is compared with the HMC user name. If a match is found on the LDAP server, then authentication with the LDAP server is attempted.

If this option is not specified when LDAP is configured, the login attribute is set to **uid**.

This option is only valid for a set operation.

--hmcuserpropsattribute

The attribute to use to retrieve the user roles and properties from the LDAP server. These user roles and properties are used when the HMC user is created or updated for an automatically managed LDAP user.

If this option is not specified when LDAP is configured, this attribute is set to **ibm-aixAdminPolicyEntry**.

This option is only valid for a set operation.

For information about how to configure this attribute on your LDAP server, please refer to the GUI help text for the Users and Security > Systems and Console Security > Manage LDAP GUI task.

--hmcauthnameattribute

The attribute to use to retrieve the remote user ID used in Kerberos authentication. When the HMC user is created or updated for an automatically managed LDAP user, the HMC user is assigned this remote user ID if Kerberos authentication is used.

If this option is not specified when LDAP is configured, this attribute is set to **userPrincipalName**.

This option is only valid for a set operation.

--searchfilter

The filter to use for limiting the search of the LDAP server for user information. This is useful when you have a large number of LDAP users and you want to decrease the amount of time for retrieving the user information.

If this option is not specified when LDAP is configured, then no filter is set.

This option is only valid for a set operation.

--scope   The search scope starting from base DN. Valid values are **one** to search one level or **sub** to search the subtree. This is useful when you want to search for users in different organizations.

If this option is not specified when LDAP is configured, the search scope is set to one level.

This option is only valid for a set operation.

--referrals
Specifies whether automatic referral chasing is to be enabled or disabled. Valid values are **0** to disable automatic referral chasing, and **1** to enable it. If this option is not specified when LDAP is configured, automatic referral chasing is enabled.

This option is only valid for a set operation.

--starttls
Specifies whether Start Transport Layer Security (TLS) is to be enabled or disabled. Valid values are **0** to disable Start TLS, and **1** to enable it. This option can only be enabled if the LDAP server supports the Start TLS protocol. When Start TLS is enabled, a connection is opened using the normal LDAP port. Then, when needed (for example when binding), the connection is converted to a SSL connection using the Start TLS protocol. This functionality exists, for example, in OpenLDAP. When Start TLS is enabled, the URI scheme **ldap://** must be used.

If this option is not specified when LDAP is configured, Start TLS is disabled.

This option is only valid for a set operation.

--hmcgroups
Specifies the name of one or more user groups allowed to log in to this HMC. Multiple group names must be comma separated. The user groups specified with this option will replace the current user groups configured for this HMC.

If this option is not specified when LDAP is configured, no HMC user groups will be configured and all LDAP users will be allowed to log in to this HMC.

This option is only valid for a set operation.

--authsearch
Specifies whether the HMC will attempt an LDAP search, with the user's credentials, as an additional confirmation that the bind operation was successful. Valid values are **base** to perform the default search, and **none** to perform no search. If this option is not specified, it defaults to **base**.

This option is only valid for a set operation.

--help   Display the help text for this command and exit.

EXAMPLES
Configure LDAP on the HMC for the first time and enable Start TLS:

**chhmcldap -o s --primary ldap://ldap.example.com --basedn
dc=example,dc=com --starttls 1**

Configure multiple base DNs for LDAP search:

**chhmcldap -o s --basedn \"cn=Users,dc=corp,dc=ibm,dc=com\",
\"ou=FTC,dc=corp,dc=ibm,dc=com\"**

Set a backup LDAP server using the **ldap://** URI scheme:

chhmcldap -o s --backup ldap://ldap2.example.com

Set the primary LDAP server using the **ldaps://** URI scheme and port number **625**:

chhmcldap -o s --primary ldaps://ldap.example.com:625

Set the bind DN and bind password:

chhmcldap -o s --binddn cn=admin,dc=yourorg,dc=com --bindpw secret

Enable automatic management of LDAP users and set the authentication type to Kerberos:

chhmcldap -o s --automanage 1 --auth kerberos

Set the LDAP search filter:

chhmcldap -o s --searchfilter "mail=*@yourcompany.com"

Set the LDAP search scope to subtree:

chhmcldap -o s --scope sub

Set the login attribute to **notesshortname**:

chhmcldap -o s --loginattribute notesshortname

Set both the time limit and bind time limit to **40** seconds and disable referrals:

chhmcldap -o s --timelimit 40 --bindtimelimit 40 --referrals 0

Configure this HMC to only allow users in groups **group1** and **group2** to log in:

chhmcldap -o s --hmcgroups group1,group2

Remove the backup LDAP server:

chhmcldap -o r -r backup

Unconfigure LDAP on the HMC:

chhmcldap -o r -r ldap

ENVIRONMENT
    None

BUGS
    None

AUTHOR
    IBM Austin

SEE ALSO
    lshmcldap, **getfile**, **rmfile**

NAME

chhmcusr - change Hardware Management Console user attributes

SYNOPSIS

To change the attributes of a Hardware Management Console (HMC) user:

chhmcusr -u *user-name*

> **-t** {**assign** | **desc** | **passwd** | **pwage** | **taskrole** |
>   **auth** | **remoteuser**}
> [**-o** {**a** | **r**}] [**-r** {**resource** | **resourcerole**}]
> [**-v** *new-attribute-value*]
> [**--remoteuser** *remote-user-name*] [**--localpasswd** *password*]
> [**--help**]

or

chhmcusr {**-f** *input-data-file* | **-i** "*input-data*"} [**--help**]

To change the default settings of HMC user attributes:

chhmcusr -t default {**-f** *input-data-file* | **-i** "*input-data*"}
>   [**--help**]

To enable an HMC user that was disabled due to inactivity:

chhmcusr -u *user-name* **-o e** [**--help**]

DESCRIPTION

chhmcusr changes the attributes of an HMC user.

chhmcusr also changes the default settings of HMC user attributes. The new default settings will be applied to newly created HMC users only.

chhmcusr can also be used to enable an HMC user that was disabled due to activity.

OPTIONS

-u   The user name of the HMC user to change or enable.

When changing an HMC user, you can either use this option or use the **name** attribute with the **-f** or **-i** option, to specify the user name. The **-u**, **-f**, and **-i** options are mutually exclusive.

-t   When changing the attribute of an HMC user, specify which user attribute to change. Valid values are **assign** for the user's access control managed resource object assignment or managed resource role assignment, **desc** for the user's description, **passwd** for the user's password, **pwage** for the number of days until the user's password expires, **taskrole** for the user's access control task role, **auth** for the user's authentication type, and **remoteuser** for the user's remote user ID used for remote Kerberos authentication.

Only users that have the **hmcsuperadmin** task role, or that have the **ManageAllUserPasswords** task in their task role, are authorized to change other locally authenticated user's passwords. The password for a remotely authenticated Kerberos user can be changed only by that user. Passwords for remotely authenticated LDAP users cannot be changed.

Password expirations can be changed for locally authenticated users only.

You can either use this option, or use the **-f** or **-i** option, to specify the user attribute(s) to change. The **-t**, **-f**, and **-i** options are mutually exclusive.

When changing the default settings of HMC user attributes, specify **default** with this option.

-o   The operation to perform. Valid values are **a** to add a managed resource object or role to the user, **r** to remove a managed resource object or role from the user, and **e** to enable a user that was disabled due to inactivity.

This option is required when changing the user's managed resource object assignment. You can either use this option, or use the **resourcerole** attribute with the **-f** or **-i** option, to change the user's managed resource role assignment. The **-o**, **-f**, and **-i** options are mutually exclusive.

This option is also required when enabling the user. Only users that have the **hmcsuperadmin** task role are authorized to enable users that have been disabled due to inactivity.

-r   The type of access control assignment to change. Valid values are **resource** for managed resource object assignment and **resourcerole** for managed resource role assignment.

This option is required when the **-o** option is used to change the user's managed resource object assignment or managed resource role assignment. This option is not valid otherwise.

-v   The new value for the attribute being changed.

When changing the user's managed resource object assignment, specify the managed resource object to be added or removed.

When changing the user's managed resource role assignment, specify one or more managed resource roles to be added or removed. Multiple managed resource roles must be comma separated.

When changing the user's description, specify the new description with this option. The new description can be any string.

When changing the user's password, you can either specify the new password with this option, or you can omit this option and you will be prompted to enter the password.

When changing the number of days until the user's password expires, specify the new number of days with this option.

When changing the user's access control task role, specify the new task role with this option. Valid values are **hmcsuperadmin**, **hmcoperator**, **hmcviewer**, **hmcpe**, **hmcservicerep**, **hmc-clientliveupdate**, or a user-defined task role.

When changing the user's authentication type, specify the new authentication type with this option. Valid values are **local**, **kerberos**, or **ldap**.

When changing the user's remote user ID used for remote Kerberos authentication, specify the new remote user ID with this option.

This option is required when the **-t** option is specified to change any user attribute other than the user's password.

You can either use this option, or use the **-f** or **-i** option, to specify the new user attribute value(s). The **-v**, **-f**, and **-i** options are mutually exclusive.

--remoteuser
The remote user ID used for remote Kerberos authentication for this user. This is the user's Kerberos principal. The format of a typical Kerberos principal is *primary/instance@REALM*.

The remote user ID must be specified when changing the user's authentication type to remote

Kerberos authentication.

This option is only valid when the **-t** option is specified to change the user's authentication type to remote Kerberos authentication.

You can either use this option, or use the **remote_user_name** attribute with the **-f** or **-i** option, to change the remote user ID. The **--remoteuser**, **-f**, and **-i** options are mutually exclusive.

--localpasswd
> The password for this user. The password must be at least 8 and maximum 32 characters in length.
>
> This option is only valid when the **-t** option is specified to change the user's authentication type to local authentication.
>
> You can either use this option, or use the **passwd** attribute with the **-f** or **-i** option, to specify the password for this user when changing the user's authentication type to local authentication.   If this option is omitted or the **-f** or **-i** option is specified and the **passwd** attribute is omitted, you will be prompted to enter the password. The **--localpasswd**, **-f**, and **-i** options are mutually exclusive.

-f
> The name of the file containing the input data for this command. The input data consists of attribute name/value pairs, which are in comma separated value (CSV) format.
>
> The format of the input data is as follows:
>
> *attribute-name*=*value***,***attribute-name*=*value***,**...
>
> Valid attribute names for changing the attributes of an HMC user:
> > **name**
> > [**taskrole**]
> > > Valid values are **hmcsuperadmin**, **hmcoperator**,
> > > **hmcviewer**, **hmcpe**, **hmcservicerep**, **hmcclientliveupdate**,
> > > or a user-defined task role
> >
> > [**resourcerole**]
> > > Comma separated
> > [**description**]
> > [**passwd**]
> > > Local and Kerberos users only
> > [**current_passwd**]
> > > When changing the password for a Kerberos user, use
> > > this attribute to specify the user's current password.
> > > If this attribute is omitted, you will be prompted to
> > > enter the current password.
> > [**pwage**]
> > > Local users only
> > > number of days
> > [**min_pwage**]
> > > Local users only
> > > number of days
> > [**authentication_type**]
> > > Valid values are:
> > > **local**   - local authentication
> > > **kerberos** - remote Kerberos authentication
> > > **ldap**   - remote LDAP authentication
> > [**session_timeout**]
> > > number of minutes
> > [**verify_timeout**]

number of minutes
 [**idle_timeout**]
  number of minutes
 [**inactivity_expiration**]
  number of days
 [**remote_webui_access**]
   Valid values are:
   0 - do not allow this user to log in remotely to the
     HMC Web user interface
   1 - allow this user to log in remotely to the
     HMC Web user interface
 [**remote_ssh_access**]
   Valid values are:
   0 - do not allow this user to log in remotely to the
     HMC using SSH
   1 - allow this user to log in remotely to the
     HMC using SSH
 [**remote_user_name**]
   Kerberos users only
 [**passwd_authentication**]
   Local users only
   Valid values are:
   0 - do not allow this user to log in to the HMC using
     a password
   1 - allow this user to log in to the HMC using a
     password

Valid attribute names for changing the default settings of HMC user attributes:
 [**session_timeout**]
  number of minutes
 [**idle_timeout**]
  number of minutes
 [**max_login_attempts**]
 [**login_suspend_time**]
  number of minutes
 [**max_webui_sessions_per_user**]
 [**max_webui_login_attempts**]
   This attribute is deprecated. Use the
   max_login_attempts attribute instead.
 [**webui_login_suspend_time**]
   This attribute is deprecated. Use the
   login_suspend_time attribute instead.

Input data for this command can be specified with this option, the **-i** option, or any of the other command options. The **-f** and the **-i** options are mutually exclusive. When changing the attributes of an HMC user, the **-f** and **-i** options cannot be specified if any of the other command options are specified.

-i   This option allows you to enter input data on the command line, instead of using a file. Data entered on the command line must follow the same format as data in a file, and must be enclosed in double quotes.

Input data for this command can be specified with this option, the **-f** option, or any of the other command options. The **-i** and the **-f** options are mutually exclusive. When changing the attributes of an HMC user, the **-i** and **-f** options cannot be specified if any of the other command options are

specified.

--help   Display the help text for this command and exit.

EXAMPLES

Change the password for the user **tester** (the new password must be entered when prompted):

chhmcusr -u tester -t passwd

Change the password for the user **tester** without prompting:

chhmcusr -u tester -t passwd -v secretpassword

or

chhmcusr -i "name=tester,passwd=secretpassword"

Change the number of days until the password expires for the user **hmcuser1** to be **180**:

chhmcusr -u hmcuser1 -t pwage -v 180

or

chhmcusr -i "name=hmcuser1,pwage=180"

Change the task role for the user **tester** to **hmcoperator**:

chhmcusr -u tester -t taskrole -v hmcoperator

or

chhmcusr -i "name=tester,taskrole=hmcoperator"

Change the remote user ID for the user **krbuser** to **krbuser@EXAMPLE.ORG**:

chhmcusr -u krbuser -t remoteuser -v krbuser@EXAMPLE.ORG

or

chhmcusr -i "name=krbuser,remote_user_name=krbuser@EXAMPLE.ORG"

Change the remotely authenticated Kerberos user **user1** to a locally authenticated user (the password must be entered when prompted):

chhmcusr -u user1 -t auth -v local

or

chhmcusr -i "name=user1,authentication_type=local"

Change the locally authenticated user **user2** to a remotely authenticated Kerberos user and set the remote user ID to **user2@EXAMPLE.ORG**:

chhmcusr -u user2 -t auth -v kerberos --remoteuser user2@EXAMPLE.ORG

or

chhmcusr -i "name=user2,authentication_type=kerberos, remote_user_name=user2@EXAMPLE.ORG"

Change the locally authenticated user **user3** to a remotely authenticated LDAP user:

chhmcusr -u user3 -t auth -v ldap

or

chhmcusr -i "name=user3,authentication_type=ldap"

Change the remotely authenticated LDAP user **user4** to a locally authenticated user:

chhmcusr -u user4 -t auth -v local --localpasswd jk3ds00b

or

chhmcusr -i "name=user4,authentication_type=local,passwd=jk3ds00b"

Change the default settings for the session and idle timeout user attributes:

chhmcusr -t default -i "session_timeout=1440,idle_timeout=20"

Enable the user **user5** that was disabled due to inactivity:

chhmcusr -u user5 -o e

ENVIRONMENT
      None
BUGS
      None
AUTHOR
      IBM Austin
SEE ALSO
      lshmcusr, **mkhmcusr**, **rmhmcusr**, **lsaccfg**

NAME

chhwres - change hardware resources

SYNOPSIS

To add, remove, or move a physical I/O slot:

chhwres -r io -m *managed-system* **-o** {**a** | **r** | **m**}
    {**-p** *partition-name* | **--id** *partition-ID*}
    [{**-t** *target-partition-name* |
     --tid *target-partition-ID*}]
    -l *slot-DRC-indexes* [**-a "***attributes***"**]
    [**-w** *wait-time*] [**-d** *detail-level*] [**--force**]

To set physical I/O attributes:

chhwres -r io -m *managed-system* **-o s**
    {**-p** *partition-name* | **--id** *partition-ID*}
    --rsubtype {**iopool** | **taggedio**}
    -a "*attributes***"**

To clear a physical I/O slot or bus:

chhwres -r io -m *managed-system* **-o c**
    [**--rsubtype** {**bus** | **slot**}] [**-l** *slot-DRC-index*]

To add or remove a virtual I/O adapter:

chhwres -r virtualio -m *managed-system* **-o** {**a** | **r**}
    {**-p** *partition-name* | **--id** *partition-ID*}
    [**--rsubtype** {**eth** | **fc** | **scsi** | **serial** | **vnic**}]
    [**-s** *virtual-slot-number*] [**-a "***attributes***"**]
    [**-w** *wait-time*] [**-d** *detail-level*] [**--force**] [**-v**]

To change a virtual ethernet adapter or virtual NIC assigned to a partition:

chhwres -r virtualio -m *managed-system* **-o s**
    --rsubtype {**eth** | **vnic**}
    {**-p** *partition-name* | **--id** *partition-ID*}
    -s *virtual-slot-number* **-a "***attributes***"**
    [**-w** *wait-time*] [**-d** *detail-level*] [**--force**]
    [**--allownetdisrupt**]

To enable or disable a virtual ethernet adapter or virtual NIC:

chhwres -r virtualio -m *managed-system* **-o** {**d** | **e**}
    --rsubtype {**eth** | **vnic**}
    {**-p** *partition-name* | **--id** *partition-ID*}
    -s *virtual-slot-number*

To set virtual I/O attributes:

chhwres -r virtualio -m *managed-system* **-o s**
    [{**-p** *partition-name* | **--id** *partition-ID*}]
    --rsubtype {**eth** | **virtualopti** | **vnic**}
    -a "*attributes***"**

To set virtual NIC backing device attributes:

chhwres -r virtualio -m *managed-system* **-o s**
    --rsubtype vnicbkdev
    {**-p** *partition-name* | **--id** *partition-ID*}
    -s *virtual-slot-number* **--logport** *logical-port-ID*
    -a "*attributes***"**

To make a virtual NIC backing device active or clear a virtual NIC backing device error:
    chhwres -r virtualio -m *managed-system* **-o** {**act** | **c**}
        --rsubtype vnicbkdev
        {**-p** *partition-name* | **--id** *partition-ID*}
        -s *virtual-slot-number* **--logport** *logical-port-ID*

To switch over all virtual NIC backing devices on the managed system from the specified Virtual I/O Server (VIOS) partition to other VIOS partitions:
    chhwres -r virtualio -m *managed-system* **-o so --rsubtype vnicbkdev**
        {**-p** *VIOS-partition-name* | **--id** *VIOS-partition-ID*}

To add or remove a virtual network or set virtual network attributes:
    chhwres -r virtualio -m *managed-system* **-o** {**a** | **r** | **s**}
        --rsubtype vnetwork --vnetwork *virtual-network*
        [**-a "***attributes***"**]

To add or remove a virtual switch:
    chhwres -r virtualio -m *managed-system* **-o** {**a** | **r**}
        --rsubtype vswitch --vswitch *virtual-switch*
        [**-a "***attributes***"**]

To set virtual switch attributes:
    chhwres -r virtualio -m *managed-system* **-o s**
        --rsubtype vswitch --vswitch *virtual-switch*
        [**-a "***attributes***"**] [**--force**]

To synchronize the virtual switch mode:
    chhwres -r virtualio -m *managed-system* **-o sync**
        --rsubtype vswitch --vswitch *virtual-switch*

To add, remove, or move memory:
    chhwres -r mem -m *managed-system* **-o** {**a** | **r** | **m** | **s**}
        {**-p** *partition-name* | **--id** *partition-ID*}
        [{**-t** *target-partition-name* |
          --tid *target-partition-ID*}]
        [**-q** *quantity*] [**--entitled** *quantity*]
        [**-w** *wait-time*] [**-d** *detail-level*] [**--force**]

To set memory attributes for the managed system:
    chhwres -r mem -m *managed-system* **-o s**
        -a "*attributes***"**

To set memory attributes for a partition:
    chhwres -r mem -m *managed-system* **-o s**
        {**-p** *partition-name* | **--id** *partition-ID*}
        -a "*attributes***"**
        [**-w** *wait-time*] [**-d** *detail-level*] [**--force**]

To switch over a running shared memory partition to its redundant paging VIOS partition:
    chhwres -r mem -m *managed-system* **-o so**
        {**-p** *partition-name* | **--id** *partition-ID*}

To reset I/O entitled memory statistics for a partition:
    chhwres -r mem -m *managed-system* **-o rs**

    {**-p** *partition-name* | **--id** *partition-ID*}
    [**-w** *wait-time*] [**-d** *detail-level*]

To add or remove a shared memory pool, or set shared memory pool attributes:
   chhwres -r mempool -m *managed-system* **-o** {**a** | **r** | **s**}
    [**-a "***attributes***"**]

To add or remove a device in the shared memory pool (on managed systems that support partition suspend and resume operations, this adds or removes a device in the reserved storage device pool):
   chhwres -r mempool -m *managed-system* **-o** {**a** | **r**}
    {**-p** *paging-VIOS-partition-name* |
     --id *paging-VIOS-partition-ID*}
    --rsubtype pgdev --device *device-name*

To add or remove a reserved storage device pool, or set reserved storage device pool attributes (only supported on managed systems that support partition suspend and resume operations):
   chhwres -r rspool -m *managed-system* **-o** {**a** | **r** | **s**}
    [**-a "***attributes***"**]

To add or remove a device in the reserved storage device pool (only supported on managed systems that support partition suspend and resume operations):
   chhwres -r rspool -m *managed-system* **-o** {**a** | **r**}
    {**-p** *VIOS-partition-name* | **--id** *VIOS-partition-ID*}
    --rsubtype rsdev --device *device-name* [**--manual**]

To add, remove, or change a persistent memory volume:
   chhwres -r pmem -m *managed-system* **-o** {**a** | **r** | **s**}
    --rsubtype volume --volume *volume-name* [**--device dram**]
    [{**-p** *partition-name* | **--id** *partition-ID*}]
    [**-a "***attributes***"**]

To add, remove, or move processing resources:
   chhwres -r proc -m *managed-system* **-o** {**a** | **r** | **m** | **s**}
    {**-p** *partition-name* | **--id** *partition-ID*}
    [{**-t** *target-partition-name* |
     --tid *target-partition-ID*}]
    [**--procs** *quantity*] [**--procunits** *quantity*]
    [**-w** *wait-time*] [**-d** *detail-level*] [**--force**]

To set processing attributes for the managed system:
   chhwres -r proc -m *managed-system* **-o s -a "***attributes***"**

To set processing attributes for a partition:
   chhwres -r proc -m *managed-system* **-o s**
    {**-p** *partition-name* | **--id** *partition-ID*}
    -a "*attributes***"**

To set shared processor pool attributes on a managed system that supports multiple shared processor pools:
   chhwres -r procpool -m *managed-system* **-o s**
    {**--poolname** *pool-name* | **--poolid** *pool-ID*}
    -a "*attributes***"**

To set shared processor pool attributes for a partition on a managed system that supports multiple shared processor pools:

        chhwres -r procpool -m *managed-system* **-o s**
            {**-p** *partition-name* | **--id** *partition-ID*}
            -a "*attributes***"**

To switch an SR-IOV adapter to shared mode:
        chhwres -r sriov -m *managed-system* **--rsubtype adapter**
            -o a -a "*attributes***"**

To switch an SR-IOV adapter to dedicated mode:
        chhwres -r sriov -m *managed-system* **--rsubtype adapter**
            -o r -a "*attributes***"**

To move the configuration of a failed SR-IOV adapter to a new adapter:
        chhwres -r sriov -m *managed-system* **--rsubtype adapter**
            -o m -a "*attributes***"**

To set SR-IOV physical port attributes:
        chhwres -r sriov -m *managed-system* **--rsubtype physport**
            -o s -a "*attributes***"**

To add or remove an SR-IOV logical port, to recover a migratable SR-IOV logical port, or to set SR-IOV logical port attributes:
        chhwres -r sriov -m *managed-system* **--rsubtype logport**
            -o {**a** | **r** | **rc** | **s**}
            {**-p** *partition-name* | **--id** *partition-ID*}
            -a "*attributes***"**
            [**-w** *wait-time*] [**-d** *detail-level*] [**--force**]

To enable or disable an SR-IOV logical port:
        chhwres -r sriov -m *managed-system* **--rsubtype logport -o** {**d** | **e**}
            {**-p** *partition-name* | **--id** *partition-ID*}
            -a "*attributes***"**

To reset statistics for an SR-IOV logical or physical port:
        chhwres -r sriov -m *managed-system* **-o rs**
            --rsubtype {**logport** | **physport**}
            -a "*attributes***"**

To set GZIP hardware accelerator resources for a partition:
        chhwres -r accel -m *managed-system* **--rsubtype gzip -o s**
            -q *QoS* {**-p** *partition-name* | **--id** *partition-ID*}
            [**-w** *wait-time*] [**-d** *detail-level*] [**--force**]

DESCRIPTION

        chhwres changes the hardware resource configuration of the *managed-system*. **chhwres** is used to perform dynamic logical partitioning (DLPAR) operations.

        When **chhwres** is used to add a virtual I/O adapter to a Virtual I/O Server (VIOS) partition, **chhwres** issues the VIOS **cfgdev** command to configure the device in the VIOS. When **chhwres** is used to remove a virtual I/O adapter from a VIOS partition, **chhwres** issues the VIOS **rmdev** command to remove the device from the VIOS partition.

        When **chhwres** is used to remove memory or processing resources from a shutdown partition, if the amount of memory or processing resources falls below the minimum for the partition, the minimum, assigned, and maximum values for the partition are all set to 0. Also, if the memory values for a partition are set to 0, the

processing resource values for the partition will also be set to 0. Likewise, if the processing resource values for a partition are set to 0, the memory values for the partition will also be set to 0.

OPTIONS

-r   The type of hardware resources to change. Valid values are **io** for physical I/O, **virtualio** for virtual I/O, **mem** for memory, **mempool** for shared memory pool, **rspool** for reserved storage device pool, **pmem** for persistent memory, **proc** for processing, **procpool** for shared processor pool, **sriov** for Single Root I/O Virtualization (SR-IOV), and **accel** for hardware accelerator resources.

Reserved storage device pool operations are only supported on managed systems that support partition suspend and resume operations.

--rsubtype

The subtype of hardware resources to change. Valid physical I/O resource subtypes are **slot** for I/O slots, **bus** for I/O buses, **iopool** for I/O pools, and **taggedio** for tagged I/O resources. Valid virtual I/O resource subtypes are **eth** for virtual ethernet, **fc** for virtual fibre channel, **scsi** for virtual SCSI, **serial** for virtual serial, **virtualopti** for virtual OptiConnect, **vnetwork** for virtual network, **vnic** for virtual NIC, **vnicbkdev** for virtual NIC backing device, and **vswitch** for virtual switch resources. Valid SR-IOV resource subtypes are **adapter** for SR-IOV adapter resources, **logport** for SR-IOV logical port resources, and **physport** for SR-IOV physical port resources. Valid persistent memory resource subtypes are **volume** for persistent memory volume resources. Valid hardware accelerator resource subtypes are **gzip** for GZIP hardware accelerator resources.

The only valid shared memory pool resource subtype is **pgdev** for paging space devices. The only valid reserved storage device pool resource subtype is **rsdev** for reserved storage devices. On a managed system that supports Active Memory Sharing and partition suspend and resume operations, the command **chhwres -m** *managed-system* **-r mempool --rsubtype pgdev -o** {**a** | **r**} **-p** *VIOS-partition-name* **--device** *device-name* adds or removes a device in the reserved storage device pool, and is equivalent to the command **chhwres -m** *managed-system* **-r rspool --rsubtype rsdev -o** {**a** | **r**} **-p** *VIOS-partition-name* **--device** *device-name*.

This option is required for physical I/O and virtual I/O set operations, for virtual I/O add operations, and for virtual network, virtual switch, SR-IOV, persistent memory, and hardware accelerator operations. This option is not valid for memory, processor, or shared processor pool operations.

-m   The name of the managed system for which the hardware resource configuration is to be changed. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

-o   The operation to perform. Valid values are **a** to add hardware resources, **r** to remove hardware resources, **m** to move hardware resources from one partition to another, **s** to set hardware resources or attributes, **d** to disable a virtual ethernet adapter, virtual NIC, or SR-IOV logical port, **e** to enable a virtual ethernet adapter, virtual NIC, or SR-IOV logical port, **rs** to reset I/O entitled memory statistics for a partition or to reset statistics for an SR-IOV logical or physical port, **so** to switch over a running shared memory partition to its redundant paging VIOS partition or to switch over all virtual NIC backing devices on the managed system from the specified VIOS partition to other VIOS partitions, **sync** to synchronize the virtual switch mode, **c** to clear a physical I/O slot or bus, or clear a virtual NIC backing device error, **act** to make a virtual NIC backing device active, or **rc** to recover a migratable SR-IOV logical port.

The **c** operation is useful for clearing stale physical I/O slot or bus information after a physical I/O adapter or drawer has been concurrently removed but not replaced.

-p   The name of the partition for which to perform the operation. For a move operation, this is the source partition (the partition the resources will be moved from) for the operation.

When adding or removing a device in the shared memory pool or the reserved storage device pool, use this option to specify the name of the VIOS partition which has the device. If the device is accessed by more than one VIOS partition, then only one of the VIOS partitions must be specified, and the device name specified with the **--device** option must be the name of the device on that VIOS partition.

When switching over virtual NIC backing devices from one VIOS partition to other VIOS partitions, use this option to specify the name of the VIOS partition from which to switch over the virtual NIC backing devices.

You can either use this option to specify the name of the partition for which to perform the operation, or use the **--id** option to specify the partition's ID. The **-p** and the **--id** options are mutually exclusive.

--id   The ID of the partition for which to perform the operation. For a move operation, this is the source partition (the partition the resources will be moved from) for the operation.

When adding or removing a device in the shared memory pool or the reserved storage device pool, use this option to specify the ID of the VIOS partition which has the device. If the device is accessed by more than one VIOS partition, then only one of the VIOS partitions must be specified, and the device name specified with the **--device** option must be the name of the device on that VIOS partition.

When switching over virtual NIC backing devices from one VIOS partition to other VIOS partitions, use this option to specify the ID of the VIOS partition from which to switch over the virtual NIC backing devices.

You can either use this option to specify the ID of the partition for which to perform the operation, or use the **-p** option to specify the partition's name. The **--id** and the **-p** options are mutually exclusive.

-t   The name of the target partition for a move operation.

You can either use this option to specify the name of the target partition, or use the **--tid** option to specify the ID of the partition. The **-t** and the **--tid** options are mutually exclusive.

A target partition is required to be specified with this option or the **--tid** option for a move operation. This option is not valid for any other operation.

--tid   The ID of the target partition for a move operation.

You can either use this option to specify the ID of the target partition, or use the **-t** option to specify the name of the target partition. The **--tid** and the **-t** options are mutually exclusive.

A target partition is required to be specified with this option or the **-t** option for a move operation. This option is not valid for any other operation.

--poolname
The name of the shared processor pool for which to set attributes.

You can either use this option to specify the name of the shared processor pool, or use the **--poolid** option to specify the ID of the shared processor pool. The **--poolname** and the **--poolid** options are mutually exclusive.

A shared processor pool is required to be specified with this option or the **--poolid** option when setting the attributes for a shared processor pool. This option is not valid for any other operation.

--poolid
> The ID of the shared processor pool for which to set attributes.
>
> You can either use this option to specify the ID of the shared processor pool, or use the **--poolname** option to specify the name of the shared processor pool. The **--poolid** and the **--poolname** options are mutually exclusive.
>
> A shared processor pool is required to be specified with this option or the **--poolname** option when setting the attributes for a shared processor pool. This option is not valid for any other operation.

-l The DRC index of the physical I/O slot to add, remove, move, or clear.

> When adding, removing, or moving physical I/O slots, one or more DRC indexes can be specified. Multiple DRC indexes must be comma separated.
>
> When clearing a physical I/O slot, only one DRC index can be specified.

-s The virtual slot number of the virtual I/O adapter to add, change, disable, enable, or remove. When performing an operation on a virtual NIC backing device, this is the virtual slot number of the virtual NIC.

> When adding a virtual I/O adapter, if this option is not specified then the next available virtual slot number will be assigned to the virtual I/O adapter.
>
> When changing, disabling, enabling, or removing a virtual I/O adapter, or when performing an operation on a virtual NIC backing device, this option is required.

-q The quantity of memory to add, remove, move, or set, or the Quality of Service (QoS) hardware accelerator value to set.

> The *quantity* of memory specified must be in megabytes and it must be a multiple of the memory region size for the *managed-system*.
>
> For a partition using shared memory, this is the quantity of logical memory to add, remove, or set. Memory move operations are not supported for partitions using shared memory.
>
> When adding memory to a partition or removing memory from a partition, you can either specify an add or remove operation and specify the amount of memory you want to add or remove, or you can specify a set operation and specify the total amount of memory you want the partition to have when the operation completes.
>
> When the current, pending, and runtime memory values for a partition are not the same and an add or remove operation is being performed, the *quantity* of memory specified with this option is added to or removed from the current value.

--entitled
> The quantity of I/O entitled memory to add, remove, or set. The *quantity* specified must be in megabytes, or *quantity* can be **auto**. If *quantity* is a number, then automatic I/O entitled memory management will no longer be provided for the partition after the *quantity* of I/O entitled memory is added, removed, or set. If *quantity* is **auto**, then the partition will be set to have automatic I/O entitled memory management, and if necessary, I/O entitled memory will be added or removed at this time so that the partition has the amount of memory required with automatic I/O entitled memory management.

When adding I/O entitled memory to a partition or removing I/O entitled memory from a partition, you can either specify an add or remove operation and specify the amount of I/O entitled memory you want to add or remove, or you can specify a set operation and specify the total amount of I/O entitled memory you want the partition to have when the operation completes.

This option is only valid for partitions using shared memory.

--procs   When adding or removing processing resources to or from a partition using dedicated processors, or when moving processing resources from a partition using dedicated processors to another partition using dedicated processors, use this option to specify the quantity of dedicated processors to add, remove, move, or set.

When adding or removing processing resources to or from a partition using shared processors, or when moving processing resources from a partition using shared processors to another partition using shared processors, use this option to specify the quantity of virtual processors to add, remove, move, or set.

When moving processing resources from a partition using dedicated processors to a partition using shared processors, use this option to specify the quantity of dedicated processors to be moved from the source partition and added as shared processors to the target partition.

This option is not valid when moving processing resources from a partition using shared processors to a partition using dedicated processors. The **--procunits** option must be used instead.

The *quantity* of processing resources specified with this option must be a whole number.

When adding processing resources to a partition or removing processing resources from a partition, you can either specify an add or remove operation and specify the number of processing resources you want to add or remove, or you can specify a set operation and specify the total number of processing resources you want the partition to have when the operation completes.

When the current, pending, and runtime processing resource values for a partition are not the same and an add or remove operation is being performed, the *quantity* of processing resources specified with this option is added to or removed from the current value.

--procunits
When adding or removing processing resources to or from a partition using shared processors, or when moving processing resources from a partition using shared processors to another partition using shared processors, use this option to specify the quantity of processing units to add, remove, move, or set.

When moving processing resources from a partition using shared processors to a partition using dedicated processors, use this option to specify the quantity of shared processors to be moved from the source partition and added as dedicated processors to the target partition.

This option is not valid when moving processing resources from a partition using dedicated processors to a partition using shared processors. The **--procs** option must be used instead.

When moving processing resources from a partition using shared processors to a partition using dedicated processors, the *quantity* of processing units specified with this option must be a whole number. Otherwise, the *quantity* of processing units specified with this option can have up to 2 decimal places.

When adding processing resources to a partition or removing processing resources from a partition, you can either specify an add or remove operation and specify the number of processing resources you want to add or remove, or you can specify a set operation and specify the total

number of processing resources you want the partition to have when the operation completes.

When the current, pending, and runtime processing resource values for a partition are not the same and an add or remove operation is being performed, the *quantity* of processing resources specified with this option is added to or removed from the current value.

--logport
> The ID of the SR-IOV logical port of the virtual NIC backing device.

--vnetwork
> The virtual network name.
>
> This option is required for all virtual network operations. This option is not valid for any other operation.

--vswitch
> The virtual switch name.
>
> This option is required for all virtual switch operations. This option is not valid for any other operation.

--device
> When adding or removing a device in the shared memory pool or the reserved storage device pool, specify the name of the device to add or remove.
>
> When adding a persistent memory volume, specify **dram** to add a persistent memory dynamic random access memory (DRAM) volume.
>
> This option is required when adding or removing a device in the shared memory pool or the reserved storage device pool. It is also required when adding a persistent memory volume. This option is not valid for any other operation.

--volume
> The persistent memory volume name.
>
> This option is required when performing a persistent memory operation. This option is not valid for any other operation.

--manual
> When adding a device to the reserved storage device pool, specify this option to indicate that the device will only be available for manual assignment to partitions by the user. A reserved storage device that is added to the pool as a manual device cannot be automatically assigned to a partition by the Hardware Management Console (HMC).
>
> If this option is not specified when adding a device to the reserved storage device pool, the device will only be available for automatic assignment to partitions by the HMC.
>
> This option is only valid when adding a device to the reserved storage device pool.

-w
> The maximum time, in minutes, to wait for partition operating system commands issued by the HMC to complete. If a partition operating system command does not complete within the time specified, the operation will be stopped.
>
> *wait-time* must be a whole number. If *wait-time* is 0, partition operating system commands will not be timed out.
>
> If this option is not specified, a default value of 120 minutes is used for memory remove operations, and a default value of 5 minutes is used for all other operations.

This option is valid for add, remove, move, and memory, processor, and hardware accelerator set operations for AIX, Linux, and VIOS partitions. In addition, this option is valid for I/O entitled memory statistics reset operations and for migratable SR-IOV logical port recover operations for AIX and Linux partitions. This option is also valid for memory add, remove, move, and set operations for IBM i partitions, and when changing the additional VLAN IDs for a virtual ethernet adapter assigned to a VIOS partition.

-d   The level of detail to request from partition operating system commands issued by the HMC. Valid values are **1** (lowest) through **4** (highest).

If this option is not specified, a default value of 1 is used.

This option is valid for add, remove, move, and memory, processor, and hardware accelerator set operations for AIX, Linux, and VIOS partitions. In addition, this option is valid for I/O entitled memory statistics reset operations and for migratable SR-IOV logical port recover operations for AIX and Linux partitions. This option is also valid when changing the additional VLAN IDs for a virtual ethernet adapter assigned to a VIOS partition.

--force   This option allows you to force a remove or move operation to be performed for a physical I/O slot that is currently in use (varied on) by an IBM i partition.

This option also allows you to force an add, remove, move, or memory, processor, or hardware accelerator set operation to be performed for an AIX, Linux, or VIOS partition that does not have an RMC connection to the HMC. This option also allows you to force a migratable SR-IOV logical port recover operation to be performed for an AIX or Linux partition that does not have an RMC connection to the HMC. If this command completes successfully, you will need to restart your operating system for the change to take affect. You should only use this option if you intentionally configured your LAN to isolate the HMC from the operating system of your partition.

This option also allows you to force the additional VLAN IDs for a virtual ethernet adapter to be changed for a VIOS partition that does not have an RMC connection to the HMC.

This option also allows you to force a virtual switch to be set to VEPA mode when the physical switch does not support the IEEE 802.1Qbg standard.

--allownetdisrupt

This option must be specified when adding one or more backing devices to a virtual NIC that currently has only one backing device and its MAC address is the same as the virtual NIC's MAC address. The HMC will remove the existing backing device and recreate it with a different MAC address after adding the specified backing devices. The recreate will cause a short network disruption for the virtual NIC.

-a   The configuration data for the command. The configuration data consists of attribute name/value pairs, which are in comma separated value (CSV) format. The configuration data must be enclosed in double quotes.

The format of the configuration data is as follows:

attribute-name=value,attribute-name=value,...

Note that certain attributes accept a comma separated list of values, as follows:

"*attribute-name=value,value,...*",...

When a list of values is specified, the attribute name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

If '+=' is used in the attribute name/value pair instead of '=', then the specified *value* is added to the existing value for the attribute if the attribute is numerical. If the attribute is a list, then the specified *value*(s) is added to the existing list.

If '-=' is used in the attribute name/value pair instead of '=', then the specified *value* is subtracted from the existing value for the attribute if the attribute is numerical. If the attribute is a list, then the specified *value*(s) is deleted from the existing list.

Valid attribute names for attributes that can be set when adding, removing, or moving a physical I/O slot:

slot_io_pool_id

Valid attribute names for setting I/O pool attributes:

lpar_io_pool_ids
   comma separated

Valid attribute names for setting tagged I/O resources (IBM i partitions only):

load_source_slot
   DRC index of I/O slot, DRC index of SR-IOV logical
   port, or virtual slot number
alt_restart_device_slot
   DRC index of I/O slot, DRC index of SR-IOV logical
   port, or virtual slot number
console_slot
   DRC index of I/O slot, DRC index of SR-IOV logical
   port, virtual slot number, or the value **hmc**
alt_console_slot
   DRC index of I/O slot
op_console_slot
   DRC index of I/O slot

Valid attribute names for adding a virtual ethernet adapter:

ieee_virtual_eth
   Valid values:
   0 - not IEEE 802.1Q compatible
   1 - IEEE 802.1Q compatible
   Required
port_vlan_id
   Required
addl_vlan_ids
is_trunk
   Valid values:
   0 - no
   1 - yes
trunk_priority
   Valid values are integers between **1**
      and **15**, inclusive
   Required for a trunk adapter
vswitch
mac_addr
   12 hexadecimal characters
   If not specified, a unique MAC address will be
   automatically generated for the adapter. It is
   highly recommended that you use an automatically

generated MAC address.

allowed_os_mac_addrs

1 to 4 comma separated MAC addresses, each specified as 12 hexadecimal characters. Other valid values:

all - all OS defined MAC addresses are allowed

none - no OS defined MAC addresses are allowed

qos_priority

Valid values are **none** and integers between **0** and **7**, inclusive

vsi_manager_id

vsi_type_id

vsi_type_version

Valid attribute names for adding a virtual fibre channel adapter:

adapter_type

Valid values are **client** or **server**

Required

remote_lpar_id | **remote_lpar_name**

One of these attributes is required

remote_slot_num

Required

wwpns

Optional for a **client** adapter, and not valid for a **server** adapter. If this attribute is not specified, WWPNs will be automatically generated for a **client** adapter. It is highly recommended that you do not specify WWPNs so that they will be automatically generated. If you do specify WWPNs, you must specify exactly two, and they must be comma separated.

Valid attribute names for adding a virtual SCSI adapter:

adapter_type

Valid values are **client** or **server**

Required

remote_lpar_id | **remote_lpar_name**

One of these attributes is required for a **client** adapter

remote_slot_num

Required for a **client** adapter

Valid attribute names for adding a virtual serial adapter:

adapter_type

Valid values are **client** or **server**

Required

remote_lpar_id | **remote_lpar_name**

One of these attributes is required for a **client** adapter

remote_slot_num

Required for a **client** adapter

supports_hmc

The only valid value is **0** for no.

Valid attribute names for adding a virtual NIC:

backing_devices
  Required
  Comma separated list of virtual NIC backing devices,
  with each backing device having the following format:

  sriov/*vios-lpar-name*/*vios-lpar-ID*/
  sriov-adapter-ID/*sriov-physical-port-ID*/
  [*capacity*][/[*failover-priority*][/
  [*max-capacity*]]]

  The first 5 '/' characters must be present. The
  6th '/' character is optional, but it must be
  present if *failover-priority* or *max-capacity*
  is specified. The 7th '/' character is optional,
  but it must be present if *max-capacity* is
  specified.

  Optional values may be omitted. Optional values
  are *capacity*, either *vios-lpar-name* or
  vios-lpar-ID, *failover-priority*, and
  max-capacity.

  Specify *capacity* and *max-capacity* each as
  a percentage with up to 2 decimal places.
  max-capacity defaults to **100** if not specified.

  Specify *failover-priority* as a value between **1**
  and **100** inclusive, with **1** being the highest
  priority. It defaults to **50** if not specified.

  For example:
  sriov/vios1//1/3/5.5//15 specifies a virtual NIC
  backing device on VIOS **vios1** and physical port **3**
  of SR-IOV adapter **1** with a capacity of **5.5**% and a
  maximum capacity of **15**%.
port_vlan_id
  Port VLAN ID or **0** to disable VLAN tag insertions
  for untagged frames (default value)
pvid_priority
  Valid values are:
  An integer between **0** and **7**, inclusive.
  Default value is **0**.
allowed_vlan_ids
  Comma separated list of VLAN IDs, or one of the
  following values:
  all - all VLAN IDs are allowed (default value)
  none - no VLAN IDs are allowed
mac_addr
  12 hexadecimal characters
  If not specified, a unique MAC address will be
  automatically generated. It is highly recommended
  that you use an automatically generated MAC address.
allowed_os_mac_addrs
  Comma separated list of MAC addresses, each specified

as 12 hexadecimal characters. Other valid values are:

all - all OS defined MAC addresses are allowed
(default value)

none - no OS defined MAC addresses are allowed

auto_priority_failover

Valid values:

0 - automatic priority failover is disabled

1 - automatic priority failover is enabled
(default value when there is no system-level
setting or when the system-level setting does
not apply to new virtual NICs)

Valid attribute names for changing a virtual ethernet adapter assigned to a running partition:

ieee_virtual_eth

Valid values:

0 - not IEEE 802.1Q compatible

1 - IEEE 802.1Q compatible

addl_vlan_ids

qos_priority

Valid values are **none** and integers between **0** and **7**,
inclusive

vsi_manager_id

To remove a VSI profile, specify **none**

vsi_type_id

To remove a VSI profile, specify **none**

vsi_type_version

To remove a VSI profile, specify **none**

Valid attribute names for changing a virtual NIC assigned to a partition:

backing_devices

Comma separated list of virtual NIC backing devices
to add or remove. You must use the '+=' operator or
the '-=' operator with this attribute. Each backing
device has the following format:

sriov/*vios-lpar-name*/*vios-lpar-ID*/
sriov-adapter-ID/*sriov-physical-port-ID*/
[*capacity*][/[*failover-priority*][/
[*max-capacity*]]]

The first 5 '/' characters must be present. The
6th '/' character is optional, but it must be
present if *failover-priority* or *max-capacity*
is specified. The 7th '/' character is optional,
but it must be present if *max-capacity* is
specified.

Optional values may be omitted. Optional values
are *capacity*, either *vios-lpar-name* or
vios-lpar-ID, *failover-priority*, and
max-capacity.

Specify *capacity* and *max-capacity* each as
a percentage with up to 2 decimal places.

max-capacity defaults to **100** if not specified.

Specify *failover-priority* as a value between **1** and **100** inclusive, with **1** being the highest priority. It defaults to **50** if not specified.

For example:
sriov/vios1//1/0/6.25/10 specifies a virtual NIC backing device on VIOS **vios1** and physical port **0** of SR-IOV adapter **1** with a capacity of **6.25**% and a failover priority of **10**.

port_vlan_id
Port VLAN ID or **0** to disable VLAN tag insertions for untagged frames

pvid_priority
Valid values are:
An integer between **0** and **7**, inclusive.

allowed_vlan_ids
Comma separated list of VLAN IDs

allowed_os_mac_addrs
Comma separated list of MAC addresses, each specified as 12 hexadecimal characters

auto_priority_failover
Valid values:
0 - automatic priority failover is disabled
1 - automatic priority failover is enabled

Valid attribute names for changing the backing device for a virtual NIC assigned to a partition:

failover_priority
Valid values are:
An integer between **1** and **100** inclusive, with **1** being the highest priority.

Valid attribute names for setting virtual ethernet attributes for the *managed-system*:

mac_prefix

Valid attribute names for setting virtual OptiConnect attributes (IBM i partitions only):

virtual_opti_pool_id
Valid values are:
0 - virtual OptiConnect is disabled
1 - virtual OptiConnect is enabled

Valid attribute names for setting virtual NIC attributes for all existing virtual NICs on the *managed-system*:

auto_priority_failover
Valid values:
0 - disable automatic priority failover
1 - enable automatic priority failover
2 - no system-level setting (default value)

apply_to_new_vnics
Indicates whether to apply the system-level automatic priority failover setting to new virtual NICs added on the managed system unless the user explicitly specifies a value during the add operation

Valid values are:
0 - no (default value)
1 - yes

Valid attribute names for adding a virtual network:
   vlan_id
      Required
   vswitch
      Required
   is_tagged
      Valid values are:
      0 - do not use IEEE 802.1Q VLAN tagging
      1 - use IEEE 802.1Q VLAN tagging
      Required

Valid attribute names for setting virtual network attributes:
   new_name

Valid attribute names for adding a virtual switch:
   allowed_lpar_names | **allowed_lpar_ids**
      Comma separated list of partition names or IDs that
      are authorized to connect to this virtual switch.
      Specify **allowed_lpar_ids=all** to allow all partitions
      to connect (default value).

Valid attribute names for setting virtual switch attributes:
   new_name
   switch_mode
      Valid values are:
      VEB - Virtual Ethernet Bridge mode
      VEPA - Virtual Ethernet Port Aggregator mode
   allowed_lpar_names | **allowed_lpar_ids**
      Comma separated list of partition names or IDs that
      are authorized to connect to this virtual switch.
      Specify **allowed_lpar_ids=all** to allow all partitions
      to connect.

Valid attribute names for setting memory attributes for the *managed-system*:
   requested_num_sys_huge_pages
   mem_mirroring_mode
      Valid values are:
      none   - disable memory mirroring
      sys_firmware_only - enable memory mirroring for system
              firmware memory only
   pend_mem_region_size
      Memory region size of the *managed-system* after it is
      restarted. The valid values for the *managed-system*
      are returned by the **lshwres -m** *managed-system* **-r mem**
      --level sys -F possible_mem_region_sizes command.

Valid attribute names for setting memory attributes for a partition:
   mem_weight
   mem_expansion
      Valid values are from **1.00** to **10.00**

hardware_mem_encryption
Valid values are:
0 - disable hardware-accelerated encryption
1 - enable hardware-accelerated encryption
hardware_mem_expansion
Valid values are:
0 - disable hardware-accelerated Active Memory
Expansion
1 - enable hardware-accelerated Active Memory
Expansion

Valid attribute names for creating the shared memory pool or setting shared memory pool attributes:
pool_mem
megabytes
max_pool_mem
megabytes
paging_vios_names | **paging_vios_ids**
specify one or two VIOS partitions
mem_dedup
Valid values are:
0 - disable Active Memory Deduplication
1 - enable Active Memory Deduplication
dedup_table_ratio
Ratio of the deduplication table size to the maximum
memory for the pool. Valid values are displayed
by the **lshwres -r mem -m** *managed-system* **--level sys**
-F possible_dedup_table_ratios command.

Valid attribute names for creating the reserved storage device pool or setting reserved storage device pool attributes:
vios_names | **vios_ids**
specify one or two VIOS partitions

Valid attribute names for adding a persistent memory volume:
size
Required
Must be a multiple of **pmem_dram_block_size** for the
managed system which is displayed by the **lshwres**
-m *managed-system* **-r pmem --level sys**
-F pmem_dram_block_size command.
affinity
Valid values are:
0 - the volume may be presented as multiple volumes to
the OS, to help with affinity planning (default)
1 - the volume must be presented as a single volume to
the OS, and may be mixed across multiple affinity
domains

Valid attribute names for changing a persistent memory volume:
new_name

Valid attribute names for setting processing attributes for the *managed-system*:
max_curr_procs_per_lpar

The valid values for the *managed-system* are returned
by the **lshwres -r proc --level sys -m** *managed-system*
-F possible_max_curr_procs_per_lpar command.

Valid attribute names for setting processing attributes for a partition:
   sharing_mode
      Valid values for partitions using
      dedicated processors are:
      keep_idle_procs - never share
          processors
      share_idle_procs - share processors only
          when partition is inactive
      share_idle_procs_active - share
          processors only when partition
          is active
      share_idle_procs_always - always share
          processors

      Valid values for partitions using shared
      processors are:
      cap   - capped
      uncap - uncapped
   uncap_weight
      Default value is **128**

Valid attribute names for setting shared processor pool attributes:
   new_name
   max_pool_proc_units
   reserved_pool_proc_units

Valid attribute names for setting shared processor pool attributes for a partition:
   shared_proc_pool_name | **shared_proc_pool_id**

Valid attribute names for switching an SR-IOV adapter to shared mode:
   slot_id
      Required
   adapter_id
      Valid values are:
      1 - **32**, inclusive

      If the adapter ID is not specified, the next available
      adapter ID will be assigned.
   adapter_config_option
      Specify an option ID returned by the **lshwres**
      -m *managed-system* **-r sriov --rsubtype adapter**
      -F possible_adapter_config_options command. If
      adapter configuration options are supported and this
      attribute is not specified, the value returned by the
      lshwres -m *managed-system* **-r sriov --rsubtype**
      adapter -F default_adapter_config_option command
      will be used.

Valid attribute names for switching an SR-IOV adapter to dedicated mode:
   slot_id

Required

Valid attribute names for moving the configuration of an SR-IOV adapter:
    slot_id
        Required
        DRC index of the I/O slot of the failed SR-IOV adapter
    target_slot_id
        Required
        DRC index of the I/O slot of the new SR-IOV adapter

Valid attribute names for changing an SR-IOV physical port:

    Warning! When an attribute for an SR-IOV physical port
    is changed, a short network interruption may occur for
    all partitions that share the physical port.

    adapter_id
        Required
    phys_port_id
        Required
    conn_speed
        Possible valid values are:
        auto
        10   - 10 Mbps
        100   - 100 Mbps
        1000   - 1 Gbps
        10000 - 10 Gbps
        40000 - 40 Gpbs
        100000 - 100 Gbps
    max_eth_logical_ports
        An integer value less than or equal to the maximum
        number of Ethernet logical ports allowed on any
        physical port on the adapter. For physical ports that
        support option IDs for configuring the maximum number
        of logical ports supported for the physical port, this
        attribute is mutually exclusive with the
        max_logical_ports_option attribute, and if this
        attribute is specified, the value specified must match
        one of the values associated with one of the supported
        option IDs. For a RoCE physical port, setting this
        attribute also sets the **max_roce_logical_ports**
        attribute to the maximum number of RoCE logical ports
        that correlates with the maximum number of Ethernet
        logical ports specified.
    max_logical_ports_option
        The option ID associated with the maximum number of
        Ethernet logical ports and RoCE logical ports to allow
        on the physical port. For Ethernet physical ports,
        supported option IDs are displayed by the **lshwres**
        -r sriov -m *managed-system* **--rsubtype physport**
        --level ethc -F possible_max_logical_ports_options
        command. For RoCE physical ports, supported option
        IDs are displayed by the **lshwres -r sriov**
        -m *managed-system* **--rsubtype physport --level roce**

-F possible_max_logical_ports_options command. For
physical ports that support option IDs for configuring
the maximum number of logical ports supported for the
physical port, this attribute is mutually exclusive
with the **max_eth_logical_ports** attribute.

max_recv_packet_size
Valid values are:
1500 - 1500 bytes
9000 - 9000 bytes (Jumbo frames)

phys_port_label
1-16 characters
Specify **none** to clear the physical port label

phys_port_sub_label
1-8 charaters
Specify **none** to clear the physical port sublabel

recv_flow_control
Valid values are:
0 - disable
1 - enable

trans_flow_control
Valid values are:
0 - disable
1 - enable

veb_mode
Valid values are:
0 - disable Virtual Ethernet Bridge mode
1 - enable Virtual Ethernet Bridge mode

vepa_mode
Valid values are:
0 - disable Virtual Ethernet Port Aggregator mode
1 - enable Virtual Ethernet Port Aggregator mode

Valid attribute names for adding an SR-IOV logical port or recovering a migratable SR-IOV logi-
cal port:

adapter_id
Required

phys_port_id
Required

logical_port_type
Required
Valid values are:
eth - ethernet logical port
roce - RDMA over Converged Ethernet (RoCE) logical
port

allowed_os_mac_addrs
Comma separated list of MAC addresses, each specified
as 12 hexadecimal characters. Other valid values are:
all - all OS defined MAC addresses are allowed
(default value)
none - no OS defined MAC addresses are allowed

allowed_priorities
Comma separated list of integers between **0** and **7**,
inclusive, or one of the following values:
all - all supported priorities are allowed

none - no priorities are allowed (default value)

allowed_vlan_ids

Comma separated list of VLAN IDs, or one of the
following values:

all - all VLAN IDs are allowed (default value)

none - no VLAN IDs are allowed

capacity

A percentage with up to 2 decimal places. For an
ethernet logical port this must be a multiple of
min_eth_capacity_granularity of the physical port,
which is displayed by the **lshwres -m** *managed-system*
-r sriov --rsubtype physport --level {**eth** | **ethc**}
-F min_eth_capacity_granularity command.
The minimum value and the default value is
min_eth_capacity_granularity. The maximum value is
100. For a RoCE logical port this must be a
multiple of **min_roce_capacity_granularity** of the
physical port, which is displayed by the **lshwres**
-m *managed-system* **-r sriov --rsubtype physport --level**
roce -F min_roce_capacity_granularity command.
The minimum value and the default value is
min_roce_capacity_granularity. The maximum value
is **100**.

max_capacity

A percentage with up to 2 decimal places. The
minimum value is **capacity**. The maximum value
and the default value is **100**.

config_id

If not specified, the management console will assign
the next available value.

diag_mode

Valid values are:

0 - disable (default value)

1 - enable

Warning! If diagnostics mode is enabled, no other
logical port may be attached to the physical port.
If logical ports are already in use on the physical
port, you will have to power off partitions or use
Dynamic Logical Partitioning (DLPAR) to remove the
logical ports that are attached to the physical port.

huge_dma_window_mode

Valid values are:

0 - disable (default value)

1 - enable

logical_port_id

DRC index of an SR-IOV logical port. If not
specified, an SR-IOV logical port will be
automatically assigned.

mac_addr

12 hexadecimal characters
If not specified, a unique MAC address will be
automatically generated for the logical port. It
is highly recommended that you use an automatically

generated MAC address.

port_vlan_id

Port VLAN ID or **0** to disable VLAN tag insertions
for untagged frames (default value)

promisc_mode

Valid values are:

0 - disable (default value)

1 - enable

pvid_priority

Valid values are:

An integer between **0** and **7**, inclusive.

Default value is **0**.

migratable

Not allowed for recover operations

Valid values:

0 - this logical port cannot be migrated
(default value)

1 - this logical port can be migrated

backup_device_type

Not allowed for recover operations

Backup device type for a migratable logical port

Valid values:

vnic - virtual NIC (default)

veth - virtual ethernet

backup_device_slot_num

Required for recover operations

Defaults to the next available virtual slot number
for add operations

backup_vnic_backing_device

Not allowed for recover operations

Specify the following format:

sriov/*vios-lpar-name*/*vios-lpar-ID*/
sriov-adapter-ID/*sriov-physical-port-ID*/
[*capacity*][/[/[*max-capacity*]]]

The first 5 '/' characters must be present. The
6th and 7th '/' characters are optional, but they
must be present if *max-capacity* is specified.

Optional values may be omitted. Optional values
are *capacity*, either *vios-lpar-name* or
vios-lpar-ID, and *max-capacity*.

Specify *capacity* and *max-capacity* each as
a percentage with up to 2 decimal places.
max-capacity defaults to **100** if not specified.

When the backup device type is virtual NIC, the
management console assigns a backing device if this
attribute is not specified. Note that the
management console can only assign a backing device
on an SR-IOV physical port that has the same port
label as the physical port for this logical port.

backup_veth_vnetwork
    Not allowed for recover operations
    Required for add operations when the backup device
    type is virtual ethernet

Valid attribute names for changing an SR-IOV logical port:
    adapter_id
        Required
    logical_port_id
        Required
    allowed_os_mac_addrs
        Comma separated list of MAC addresses, each specified
        as 12 hexadecimal characters
    allowed_priorities
        Comma separated list of integers between **0** and **7**,
        inclusive
    allowed_vlan_ids
        Comma separated list of VLAN IDs
    diag_mode
        Valid values are:
        0 - disable (default value)
        1 - enable

        Warning! If diagnostics mode is enabled, no other
        logical port may be attached to the physical port.
        If logical ports are already in use on the physical
        port, you will have to power off partitions or use
        Dynamic Logical Partitioning (DLPAR) to remove the
        logical ports that are attached to the physical port.
    port_vlan_id
        Port VLAN ID or **0** to disable VLAN tag insertions
        for untagged frames
    pvid_priority
        Valid values are:
        An integer between **0** and **7**, inclusive.

Valid attribute names for removing an SR-IOV logical port:
    adapter_id
        Required
    logical_port_id
        Required

Valid attribute names for enabling or disabling an SR-IOV logical port:
    adapter_id
        Required
    logical_port_id
        Required

Valid attribute names for resetting statistics for an SR-IOV physical port:
    adapter_id
        Required
    phys_port_id
        Required

Valid attribute names for resetting statistics for an SR-IOV logical port:

> **adapter_id**
>> Required
>
> **logical_port_id**
>> Required

-v   Specify this option to enable verbose mode. When verbose mode is enabled, warning messages and informational messages are displayed for successful virtual NIC operations. Warning messages and informational messages are displayed for virtual NIC operations that fail, regardless of whether this option is specified.

--help Display the help text for this command and exit.

EXAMPLES

In the following examples nested double quote characters are preceded by an escape character ('\'). The escape characters are required to run the commands locally on an HMC.

Add the I/O slot with DRC index **21010001** to partition **p1** and set the I/O pool ID for the slot to **3**:

**chhwres -r io -m sys1 -o a -p p1 -l 21010001
 -a "slot_io_pool_id=3"**

Add I/O pools **2** and **3** to the I/O pools in which partition p1 is participating:

**chhwres -r io --rsubtype iopool -m 9406-520*1234321A -o s
 -p p1 -a "\"lpar_io_pool_ids+=2,3\""**

Clear the physical I/O slot with DRC index **21010207** after the physical I/O adapter in that slot was concurrently removed but not replaced:

chhwres -r io -m sys1 -o c -l 21010207

Add a virtual ethernet adapter to the partition with ID **3**:

**chhwres -r virtualio -m 9406-520*1234321A -o a --id 3
 --rsubtype eth -a "ieee_virtual_eth=1,
 port_vlan_id=4,\"addl_vlan_ids=5,6\",is_trunk=1,
 trunk_priority=1"**

Add a virtual fibre channel client adapter to the partition **p1**:

**chhwres -r virtualio -m sys1 -o a -p p1 --rsubtype fc
 -a "adapter_type=client,remote_lpar_name=vios,remote_slot_num=16"**

Add a virtual NIC to the partition **p1**:

**chhwres -r virtualio -m sys1 -o a -p p1 --rsubtype vnic -v
 -a "port_vlan_id=3,backing_devices=sriov/vios1//1/2/"**

Remove the virtual adapter in slot **3** from partition **p1**:

chhwres -r virtualio -m sys1 -o r -p p1 -s 3

Add an additional VLAN ID to the virtual ethernet adapter in slot **4** of the partition **AIX**:

chhwres -r virtualio -m sys1 -o s --rsubtype eth -p AIX -s 4

-a "addl_vlan_ids+=5"

Add additional VLAN IDs to the virtual NIC in slot **6** of the partition **lp4** and change its port VLAN ID priority:

**chhwres -r virtualio -m sys1 -o s --rsubtype vnic -p lp4 -s 6
-a "\"allowed_vlan_ids+=10,20,30\",pvid_priority=5"**

Add additional backing devices to the virtual NIC in slot **3** of the partition with ID **4**:

**chhwres -r virtualio -m sys1 -o s --rsubtype vnic --id 4 -s 3
-a "\"backing_devices+=sriov/vios1//1/0/4/50,sriov/vios2//2/0/4/62\""
--allownetdisrupt**

Remove a backing device from the virtual NIC in slot **3** of the partition **lp4**:

**chhwres -r virtualio -m sys1 -o s --rsubtype vnic -p lp4 -s 3
-a "backing_devices-=sriov///1/0//"**

Disable automatic priority failover for all existing virtual NICs on the managed system, but do not apply this setting to new virtual NICs:

**chhwres -r virtualio -m sys1 -o s --rsubtype vnic
-a "auto_priority_failover=0,apply_to_new_vnics=0"**

Change the failover priority of the backing device, with logical port ID **27004001**, for the virtual NIC in slot **3** of the partition **lp4**:

**chhwres -m sys1 -r virtualio -o s --rsubtype vnicbkdev -p lp4 -s 3
--logport 27004001 -a "failover_priority=75"**

Make the backing device, with logical port ID **27004001**, for the virtual NIC in slot **3** of the partition **lp4** active:

**chhwres -m sys1 -r virtualio -o act --rsubtype vnicbkdev -p lp4 -s 3
--logport 27004001**

Switch over all virtual NIC backing devices on VIOS partition **vios1** to other VIOS partitions:

chhwres -m sys1 -r virtualio -o so --rsubtype vnicbkdev -p vios1

Disable the virtual ethernet adapter in slot **2** of the partition **p5**:

chhwres -r virtualio -m sys1 -o d --rsubtype eth -p p5 -s 2

Enable virtual OptiConnect for the IBM i partition **i_p1**:

**chhwres -r virtualio -m sys1 -o s -p i_p1
--rsubtype virtualopti -a "virtual_opti_pool_id=1"**

Add the virtual network **vnet5**:

**chhwres -r virtualio --rsubtype vnetwork -m sys1 -o a --vnetwork vnet5
-a "vswitch=ETHERNET0,vlan_id=5,is_tagged=1"**

Add the virtual switch **vs1**:

chhwres -r virtualio --rsubtype vswitch -m sys1 -o a --vswitch vs1

Add **128** MB of memory to the partition with ID **1**, and time out after **10** minutes:

chhwres -r mem -m sys1 -o a --id 1 -q 128 -w 10

Remove **512** MB of memory from the AIX partition **aix_p1** and return a detail level of **5**:

chhwres -r mem -m 9406-520*1234321A -o r -p aix_p1 -q 512 -d 5

Set the total amount of memory for the partition **p1** to **8192** MB:

chhwres -r mem -m sys1 -o s -p p1 -q 8192

Remove **128** MB of logical memory and **100** MB of I/O entitled memory from the partition **smp1**:

chhwres -r mem -m sys1 -o r -p smp1 -q 128 --entitled 100

Set the partition **smp1** to automatic I/O entitled memory management mode:

chhwres -r mem -m sys1 -o a -p smp1 --entitled auto

Reset I/O entitled memory statistics for partition **smp1**:

chhwres -r mem -m sys1 -o rs -p smp1

Create the shared memory pool with redundant VIOS partitions (on a managed system that supports partition suspend and resume operations, this command also creates the reserved storage device pool if it does not already exist):

**chhwres -r mempool -m sys1 -o a -a "pool_mem=4096,max_pool_mem=
 8192,\"paging_vios_names=vios_p1,vios_p2\""**

Increase the size of the shared memory pool by **256** MB:

chhwres -r mempool -m sys1 -o s -a "pool_mem+=256"

Add the device **hdisk1** on VIOS partition **vios_p1** to the shared memory pool (on a managed system that supports partition suspend and resume operations, this command adds the device to the reserved storage device pool):

**chhwres -r mempool -m sys1 --rsubtype pgdev -o a -p vios_p1
 --device hdisk1**

Create the reserved storage device pool with a single VIOS partition:

chhwres -r rspool -m sys1 -o a -a "vios_names=vios_p2"

Add the VIOS partition with ID **1** to the reserved storage device pool:

chhwres -r rspool -m sys1 -o s -a "vios_ids+=1"

Remove the device **hdisk1** on VIOS partition **vios_p1** from the reserved storage device pool:

chhwres -r rspool -m sys1 --rsubtype rsdev -o r -p vios_p1
 --device hdisk1

Switch over the running shared memory partition **smp1** to its redundant paging VIOS partition:

chhwres -r mem -m sys1 -p smp1 -o so

Set the number of pages of huge page memory requested for the managed system to **2** (the managed system must be powered off):

chhwres -r mem -m sys1 -o s -a "requested_num_sys_huge_pages=2"

Create and add a persistent memory DRAM volume to a partition:

chhwres -r pmem -m mySys -o a --rsubtype volume --volume p1Vol
 --device dram -p p1 -a "size=512,affinity=1"

Remove a persistent memory DRAM volume from a partition and delete it:

chhwres -r pmem -m mySys -o r --rsubtype volume --volume p1Vol --id 3

Move **1** processor from partition **p1** to partition **p2** (both partitions are using dedicated processors):

chhwres -r proc -m 9406-520*1234321A -o m -p p1 -t p2 --procs 1

Move **.5** processing units from the partition with ID **1** to the partition with ID **2** (both partitions are using shared processors):

chhwres -r proc -m sys1 -o m --id 1 --tid 2 --procunits .5

Add **.25** processing units to the IBM i partition **i_p1**:

chhwres -r proc -m sys1 -o a -p i_p1 --procunits .25

Set the number of processors for partition **p1** to **2**:

chhwres -r proc -m sys1 -o s -p p1 --procs 2

Configure the shared processor pool with ID **1**:

chhwres -r procpool -m sys1 -o s --poolid 1 -a "new_name=
 pool1,max_pool_proc_units=2,reserved_pool_proc_units=.5"

Move the partition **sharedlpar1** to shared processor pool **pool1**:

chhwres -r procpool -m sys1 -o s -p sharedlpar1
 -a "shared_proc_pool_name=pool1"

Switch an SR-IOV adapter to shared mode:

chhwres -r sriov -m sys1 --rsubtype adapter -o a -a "slot_id=21010202,
 adapter_config_option=0"

Switch an SR-IOV adapter to dedicated mode:

chhwres -r sriov -m sys1 --rsubtype adapter -o r -a "slot_id=21010202"

Set the connection speed for SR-IOV physical port **0** to 100 Gbps:

**chhwres -r sriov -m sys1 --rsubtype physport -o s
 -a "adapter_id=1,phys_port_id=0,conn_speed=100000"**

Add an SR-IOV ethernet logical port (using defaults) to partition **lpar1**:

**chhwres -r sriov -m sys1 --rsubtype logport -o a -p lpar1
 -a "adapter_id=1,phys_port_id=1,logical_port_type=eth"**

Remove an SR-IOV ethernet logical port from partition **lpar1**:

**chhwres -r sriov -m sys1 --rsubtype logport -o r -p lpar1
 -a "adapter_id=1,logical_port_id=27004001"**

Change the port VLAN ID for an SR-IOV ethernet logical port in partition **lpar1**:

**chhwres -r sriov -m sys1 --rsubtype logport -o s -p lpar1
 -a "adapter_id=1,logical_port_id=27004001,port_vlan_id=2"**

Disable an SR-IOV logical port:

**chhwres -r sriov -m sys1 --rsubtype logport -o d --id 23
 -a "adapter_id=1,logical_port_id=2700402d"**

Reset the statistics for an SR-IOV physical port:

**chhwres -r sriov -m sys1 --rsubtype physport -o rs
 -a "adapter_id=1,phys_port_id=0"**

Recover the migratable SR-IOV logical port for the backup device in slot **3** after a partition migration operation:

**chhwres -r sriov -m sys1 --rsubtype logport -o rc -p aix1
 -a "adapter_id=1,phys_port_id=1,logical_port_type=eth,capacity=10,
 max_capacity=20,backup_device_slot_num=3"**

Set the GZIP QoS value to **100** for partition **aixLpar**:

chhwres -r accel -m system1 --rsubtype gzip -o s -p aixLpar -q 100

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
lshwres, **rsthwres**, **chsyscfg**, **lssyscfg**

NAME

        chipsec - change IPsec configuration

SYNOPSIS

        To create and start an IPsec connection to a managed system:

            chipsec -m *managed-system* **--left** *IPv6-address* **--passkey** *passphrase*

        To create and start a user-defined IPsec connection:

            chipsec -f *connection-file* **--passkey** *passphrase*

                [**--cert** *certificate-file*]

        To start, stop, or remove an IPsec connection:

            chipsec {**--up** *connection-name* | **--down** *connection-name* |

                -r *connection-name*}

        To start or stop the IPsec service on the Hardware Management Console:

            chipsec {**--start** | **--stop**}

DESCRIPTION

        chipsec changes the Internet Protocol Security (IPsec) configuration on the Hardware Management Console (HMC). It can also be used to manage IPsec connections and the IPsec service.

        An IPsec connection is automatically started when it is created. The IPsec service is automatically started when the first IPsec connection is created.

        The HMC uses the strongSwan IPsec implementation.

OPTIONS

        -m   The name of the managed system to which to create an IPsec connection. The name may either be the user-defined name for the managed system, or be in the form *tttt*-*mmm**sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt*-*mmm**sssssss form must be used if there are multiple managed systems with the same user-defined name.

        --left   The HMC IPv6 address to be used for the IPsec connection to the *managed-system*.

        --passkey

            The passphrase.

        -f   The name of the file that contains the configuration information for the user-defined IPsec connection to be created. The configuration information in the file must be the **conn** section for the **ipsec.conf** file. The file can contain the configuration information for one connection only.

            If the file is on removable media, the media must be present in the removable media device and the device must be mounted with the **mount** command before this command is issued. The **lsmediadev** command can be used to display all of the removable media devices on the HMC.

        --cert   The name of the file that contains the certificate for the user-defined IPsec connection to be created. The file name must end with the **.pem** suffix.

            If the file is on removable media, the media must be present in the removable media device and the device must be mounted with the **mount** command before this command is issued. The **lsmediadev** command can be used to display all of the removable media devices on the HMC.

        --up   Specify this option to start the IPsec connection *connection-name*. If the IPsec service is not running, it will be started.

            An IPsec connection is automatically started when it is created.

--down   Specify this option to stop the IPsec connection *connection-name*. If no other IPsec connections are active, the IPsec service will be stopped.

-r   Specify this option to remove the IPsec connection *connection-name*.

An active IPsec connection is stopped before it is removed.

--start   Specify this option to start the IPsec service on the HMC.

The IPsec service is automatically started when the first IPsec connection is created or started.

--stop   Specify this option to stop the IPsec service on the HMC.

The IPsec service is automatically stopped when the last IPsec connection is removed or stopped.

--help   Display the help text for this command and exit.

EXAMPLES

Create and start an IPsec connection to managed system **j21**:

chipsec -m j21 --left fe80:0:0:0:221:5eff:fe46:57ce
--passkey hmctest1234!

Create and start a user-defined IPsec connection:

chipsec -f connfile.txt --passkey passphrase1

Create and start a user-defined IPsec connection with certificate. Both files are on a USB flash memory device (the USB flash memory device must already be connected to the HMC):

lsmediadev (to obtain mount points)

mount /media/sdb1

chipsec -f /media/sdb1/user_file.txt --cert /media/sdb1/user_cert.pem
--passkey hmctest1234!

Start the IPsec connection **j21**:

chipsec --up j21

Stop the IPsec connection **j21**:

chipsec --down j21

Remove the IPsec connection **j21**:

chipsec -r j21

Start the IPsec service on the HMC:

chipsec --start

Stop the IPsec service on the HMC:

chipsec --stop

ENVIRONMENT
    None
BUGS
    None
AUTHOR
    IBM Austin
SEE ALSO
    lsipsec, **lsmediadev**

NAME
      chkmedia - check media readiness

SYNOPSIS
      chkmedia -r usbflashmem [**--help**]

DESCRIPTION
      chkmedia allows a user to test for media readiness on the Hardware Management Console (HMC). Media devices that can be tested for readiness are USB data storage devices. In order to test for media readiness the media device is mounted, then a small amount of data is written to, read from, then deleted from the media. Finally, the media device is unmounted. No other diagnostic actions are performed on the media or the media device. The media device cannot already be mounted when this command is run.

OPTIONS
      -r   The media device to be tested for readiness. The only valid value is **usbflashmem** for a flash memory device or other data storage device that is inserted into a USB port on the HMC.

      --help   Display the help text for this command and exit.

EXAMPLES
      Check a USB flash memory device for media readiness:

      chkmedia -r usbflashmem

ENVIRONMENT
      None

BUGS
      None

AUTHOR
      IBM Austin

NAME
>   chled - change LED

SYNOPSIS
>   To turn an LED on or off:
>>   **chled -m** *managed-system* **-o** {**on** | **off**}
>>>   **-r** {**sa** | **ident**} [**-t** {**phys** | **virtuallpar** | **virtualsys**}]
>>>   [{**-p** *partition-name* | **--id** *partition-ID*}] [**-l** *location-code*]
>>>   [**--help**]
>
>   To run an LED lamp test:
>>   **chled -m** *managed-system* **-o test -r lamp** [**--help**]

DESCRIPTION
>   **chled** changes the state of an LED or runs an LED lamp test on the *managed-system*.

OPTIONS
>   **-m**   The name of the managed system on which to change the LED or run the LED lamp test. The
>   name may either be the user-defined name for the managed system, or be in the form *tttt-*
>   *mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number
>   of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed
>   systems with the same user-defined name.
>
>   **-o**   The operation to perform on the LED. Valid values are **on** to activate the LED, **off** to deactivate
>   the LED, and **test** to run the LED lamp test.
>
>   The value **on** is not valid when changing the physical System Attention LED for the *managed-sys-*
>   *tem*.
>
>   **-r**   The type of LED resource to change. Valid values are **sa** for System Attention (SA) LED, **ident**
>   for identify LED, and **lamp** for LED lamp.
>
>   **-t**   The type of System Attention (SA) LED to change. Valid values are **phys** for the physical SA
>   LED for the *managed-system*, **virtuallpar** for a virtual partition SA LED, or **virtualsys** for the vir-
>   tual SA LED for the *managed-system*.
>
>   This option is required when changing an SA LED. This option is not valid for any other opera-
>   tion.
>
>   **-p**   The name of the partition for which to change the virtual partition SA LED.
>
>   To change a virtual partition SA LED, you must either use this option to specify the name of the
>   partition, or use the **--id** option to specify the partition's ID. The **-p** and the **--id** options are mutu-
>   ally exclusive.
>
>   This option is not valid for any other type of LED operation.
>
>   **--id**   The ID of the partition for which to change the virtual partition SA LED.
>
>   To change a virtual partition SA LED, you must either use this option to specify the ID of the par-
>   tition, or use the **-p** option to specify the partition's name. The **--id** and the **-p** options are mutu-
>   ally exclusive.
>
>   This option is not valid for any other type of LED operation.
>
>   **-l**   The location code of the enclosure or FRU for which to change the identify LED.
>
>   This option is required when changing an identify LED. This option is not valid for any other
>   operation.

--help   Display the help text for this command and exit.

EXAMPLES

Deactivate the physical SA LED for the system:

chled -m 9406-570*100103C -r sa -t phys -o off

Activate the virtual partition SA LED for partition **lpar3**:

chled -m system1 -r sa -t virtuallpar -o on -p lpar3

Deactivate the virtual partition SA LED for the partition with ID **3**:

chled -m system1 -r sa -t virtuallpar -o off --id 3

Activate the identify LED for the FRU with location code **U78D2.001.RCH0048-P1-C1**:

chled -m system1 -r ident -o on -l U78D2.001.RCH0048-P1-C1

Run the LED lamp test:

chled -m system1 -r lamp -o test

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

lsled

NAME
        chlickey - change license key information

SYNOPSIS
        chlickey -m *managed-system* **-o a** {**-p** *partition-name* | **--id** *partition-ID*}
        {**-a** "*attributes*" | **-f** *file*} [**-l** {**disk** | **sftp** | **usb**}] [**-d** *directory*]
        [**-h** *host-name*] [**-u** *user-ID*] [**--passwd** *password*] [**-k** *SSH-private-key*]
        [**--help**]

DESCRIPTION
        chlickey adds license key information to a running IBM i partition.

OPTIONS
        -m   The name of the managed system which has the IBM i partition to which to add license key infor-
                  mation. The name may either be the user-defined name for the managed system, or be in the form
                  *tttt***-***mmm*******sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial num-
                  ber of the managed system. The *tttt***-***mmm*******sssssss* form must be used if there are multiple man-
                  aged systems with the same user-defined name.

        -o   The operation to perform. The only valid value is **a** to add license key information.

        -p   The name of the IBM i partition for which to perform the operation.

                  You can either use this option to specify the name of the partition for which to perform the opera-
                  tion, or use the **--id** option to specify the partition's ID. The **-p** and the **--id** options are mutually
                  exclusive.

        --id   The ID of the IBM i partition for which to perform the operation.

                  You can either use this option to specify the ID of the partition for which to perform the operation,
                  or use the **-p** option to specify the partition's name. The **--id** and the **-p** options are mutually
                  exclusive.

        -a   The license key information to add. The information consists of attribute name/value pairs, which
                  are in comma separated value (CSV) format. The information must be enclosed in double quotes.

                  The format of the information is as follows:

                  *attribute-name***=***value***,***attribute-name***=***value***,***...*

                  Valid attribute names:
                      prdid
                      lictrm
                          Specify in **V***x*, **V***x***R***y*, or **V***x***R***y***M***z* format, where *x* and *y*
                          can be a number from **0** through **9**, and *z* can be a
                          number from **0** through **9** or a letter from **A**
                          through **Z**
                      feature
                      [**serial**]
                          Defaults to ***LOCAL**
                      [**prcgrp**]
                          Specify in **P***xx* format where *xx* is a number from **00** to
                          99
                          Defaults to **999**
                      usglmt
                          Specify ***NOMAX** for no limit
                      [**expdate**]
                          Specify in **1***YYMMDD* format
                          Defaults to **9999999** which correlates to ***NONE**

[**vnddta**]
Defaults to blank which correlates to ***NONE**
lickey

The **-a** and the **-f** options are mutually exclusive.

-f   The name of the license key file.

The **-a** and the **-f** options are mutually exclusive.

-l   The location of the license key file. Valid values are **disk** for the HMC hard disk, **sftp** for a remote secure FTP (SFTP) server, and **usb** for a USB data storage device.

If the location of the license key file is on a USB data storage device, the device must be connected to the HMC and must be mounted with the **mount** command before this command is issued. The **lsmediadev** command can be used to display the mount point for the USB device.

This option is required when a license key file is used. Otherwise, this option is not valid.

-d   The directory that contains the license key file.

This option is required when the license key file is located on a USB data storage device. If the license key file is located on the HMC hard disk or a remote SFTP server, this option defaults to the user's home directory if not specified.

-h   The host name or IP address of the SFTP server where the license key file is located.

This option is required when the license key file is located on a remote SFTP server. Otherwise, this option is not valid.

-u   The user ID to use to log in to the SFTP server.

This option is required when the license key file is located on a remote SFTP server. Otherwise, this option is not valid.

--passwd
The password to use to log in to the SFTP server.

If both this option and the **-k** option are omitted and the license key file is located on a remote SFTP server, you will be prompted to enter the password. The **--passwd** and **-k** options are mutually exclusive.

This option is only valid when the license key file is located on a remote SFTP server.

-k   The name of the file that contains the SSH private key. If the file name is not fully qualified, the file must exist in the user's home directory on the HMC.

Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen** command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so when you run the command on the HMC, you must specify both the directory and the file name for the private key. If you generate a key with a passphrase, you will be prompted to enter the passphrase when you run any HMC command that uses the key.

If both this option and the **--passwd** option are omitted and the license key file is located on a remote SFTP server, you will be prompted to enter the password. The **-k** and **--passwd** options are mutually exclusive.

This option is only valid when the license key file is located on a remote SFTP server.

--help   Display the help text for this command and exit.

EXAMPLES

Add the specified license key information:

**chlickey -m sys1 -o a -p i1 -a "prdid=1MYPROD,lictrm=V3,usglmt=1,
feature=5101,lickey=1234567890ABCDEF12"**

Add license key information from a file on a remote SFTP server (you will be prompted to enter the user's password):

**chlickey -m 9080-M9S*1234567 -o a --id 1 -f licKeyFile -l sftp
-h sftpserver -u sftpuser -d /home/sftpuser/lickeys**

Add license key information from a file on a remote SFTP server and use SSH keys for authentication:

**chlickey -m sys1 -o a -p lp-i-1 -f licKeyFile -l sftp -h 9.3.123.25
-u sftpuser -k /home/hmcuser/keys/id_rsa**

Add license key information from a file on a USB data storage device (the USB device must already be connected to the HMC):

lsmediadev (to obtain mount points)

mount /media/sdb1

chlickey -m sys1 -o a -p p1 -f licKeyFile -l usb -d /media/sdb1

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

lsmediadev

NAME

chlparstate - change partition state

SYNOPSIS

To suspend a partition or validate to suspend a partition:

chlparstate -m *managed-system* **-o** {**suspend** | **validate**} [**-t suspend**]
{**-p** *partition-name* | **--id** *partition-ID*}
[{**-f** *input-data-file* | **-i** "*input-data*"}]
[**--protectstorage** {**1** | **2**}]
[**-w** *wait-time*] [**-d** *detail-level*] [**-v**] [**--nodetails**]

To resume a partition or validate to resume a partition:

chlparstate -m *managed-system* **-o** {**resume** | **validate**} [**-t resume**]
{**-p** *partition-name* | **--id** *partition-ID*}
[**--mpio** {**1** | **2**}] [**--vlanbridge** {**1** | **2**}]
[**--vsi** {**1** | **2**}]
[**-w** *wait-time*] [**-d** *detail-level*] [**-v**] [**--nodetails**]

To cancel a partition suspend or resume operation:

chlparstate -m *managed-system* **-o cancel -t** {**suspend** | **resume**}
{**-p** *partition-name* | **--id** *partition-ID*}
[**-w** *wait-time*] [**-d** *detail-level*]

To recover a partition suspend or resume operation:

chlparstate -m *managed-system* **-o recover -t** {**suspend** | **resume**}
{**-p** *partition-name* | **--id** *partition-ID*}
[**-w** *wait-time*] [**-d** *detail-level*] [**-v**] [**--nodetails**]
[**--force**]

To shut down a suspended partition:

chlparstate -m *managed-system* **-o shutdown**
{**-p** *partition-name* | **--id** *partition-ID*}
[**--mpio** {**1** | **2**}] [**--vlanbridge** {**1** | **2**}]
[**-w** *wait-time*] [**-d** *detail-level*] [**-v**] [**--nodetails**]
[**--immed**] [**--force**]

To shut down or restart a partition that is not suspended:

chlparstate -m *managed-system* **-o shutdown**
{**-p** *partition-name* | **--id** *partition-ID*}
[**--immed**] [**--restart**] [**--force**]

DESCRIPTION

chlparstate changes the state of a partition on the *managed-system*.

chlparstate is used to perform partition suspend and resume operations. Partition suspend and resume operations can be performed for AIX, Linux, and IBM i partitions.

See the **chsysstate** command for additional partition state change operations.

chlparstate can also be used to perform partition shutdown operations. Either **chlparstate** or **chsysstate** can be used to shut down a partition that is not suspended.

The recommended procedure for shutting down a suspended partition is to resume the partition first, then shut it down. However, if you want to shut down a partition while it is suspended, then it is recommended that **chlparstate**, not **chsysstate**, be used to shut down the partition because **chlparstate** supports additional options that **chsysstate** does not.

OPTIONS

-o   The operation to perform. Valid values are **suspend** to validate then suspend a partition if validation succeeds, **resume** to validate then resume a suspended partition if validation succeeds, **validate** to validate a partition suspend or resume operation, **cancel** to stop a partition suspend or resume operation, **recover** to recover from a failed partition suspend or resume operation, and **shutdown** to shut down a partition.

-t   To validate, cancel, or recover a partition suspend operation, specify **suspend** with this option.

To validate, cancel, or recover a partition resume operation, specify **resume** with this option.

-m   The name of the managed system on which to perform the partition state change operation. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

-p   The name of the partition for which to perform the operation.

You must either use this option to specify the name of the partition, or use the **--id** option to specify the partition's ID. The **-p** and the **--id** options are mutually exclusive.

--id   The ID of the partition for which to perform the operation.

You must either use this option to specify the ID of the partition, or use the **-p** option to specify the partition's name. The **--id** and the **-p** options are mutually exclusive.

-f   The name of the file containing the input data for this command. The data consists of attribute name/value pairs, which are in comma separated value (CSV) format.

The format of the data is as follows:

attribute-name=value,*attribute-name=value*,...

Valid attribute names for this command:
    primary_rs_vios_name | **primary_rs_vios_id**
    secondary_rs_vios_name | **secondary_rs_vios_id**
    primary_vios_name | **primary_vios_id**
        These attributes are deprecated. Use the
        primary_rs_vios_name | **primary_rs_vios_id**
        attributes instead.
    secondary_vios_name | **secondary_vios_id**
        These attributes are deprecated. Use the
        secondary_rs_vios_name | **secondary_rs_vios_id**
        attributes instead.

Input data for this command can be specified with this option or the **-i** option. The **-f** and the **-i** options are mutually exclusive.

Input data can be specified when suspending a partition or validating a partition suspend operation only.

-i   This option allows you to enter input data on the command line, instead of using a file. Data entered on the command line must follow the same format as data in a file, and must be enclosed in double quotes.

Input data for this command can be specified with this option or the **-f** option. The **-i** and the **-f** options are mutually exclusive.

Input data can be specified when suspending a partition or validating a partition suspend operation only.

--protectstorage
When suspending a partition or validating a partition suspend operation, use this option to specify whether the partition's virtual storage devices are required to be protected to prevent accidental reassignment of the devices while the partition is suspended. To protect a suspended partition's virtual storage devices, all Virtual I/O Server (VIOS) partitions hosting the devices must be capable of reporting virtual storage device usage of suspended partitions (VIOS version 2.2.1.4 or later).

Valid values for this option are **1** if the partition's virtual storage devices are required to be protected while the partition is suspended, or **2** if the partition's virtual storage devices are not required to be protected while the partition is suspended, but should be protected if possible. If this option is not specified, this option defaults to the value **1**.

If this option has a value of **1** and not all of the VIOS partitions hosting the partition's virtual storage devices are capable of reporting virtual storage device usage of suspended partitions, an error will occur and the operation will fail since not all of the partition's virtual storage devices can be protected. The operation can succeed if this option has a value of **2**, but you would be responsible for ensuring the integrity of the partition's virtual storage devices while the partition is suspended.

This option is valid when suspending a partition or validating a partition suspend operation only.

--mpio
When resuming a partition, validating a partition resume operation, or shutting down a suspended partition, use this option to specify whether the management console is required to maintain an equivalent multipath I/O (MPIO) configuration of the partition's virtual SCSI and virtual fibre channel adapters. Valid values are **1** if the management console is required to maintain an equivalent MPIO configuration, or **2** if the management console is not required to maintain an equivalent MPIO configuration, but should do so if possible. If this option is not specified, then this option defaults to the value **1**.

If this option has a value of **1** and the management console cannot guarantee that an equivalent MPIO configuration of all of the partition's virtual SCSI and virtual fibre channel adapters can be maintained, then an error will occur and the operation will fail.

This option is valid when resuming a partition, validating a partition resume operation, or shutting down a suspended partition only.

--vlanbridge
When resuming a partition, validating a partition resume operation, or shutting down a suspended partition, use this option to specify whether each of the partition's virtual ethernet adapters is required to be configured so that it is bridged on the same VLAN to an external network. Valid values are **1** if the partition's virtual ethernet adapters are required to be bridged, or **2** if the partition's virtual ethernet adapters are not required to be bridged, but should be bridged if possible. If this option is not specified, then this option defaults to the value **1**.

If this option has a value of **1** and the management console cannot guarantee that all of the partition's virtual ethernet adapters can be bridged, then an error will occur and the operation will fail.

This option is valid when resuming a partition, validating a partition resume operation, or shutting down a suspended partition only.

--vsi
When resuming a partition or validating a partition resume operation, use this option to specify whether the partition's virtual ethernet adapter Virtual Station Interface (VSI) profiles are required to be configured. Valid values are **1** if VSI profiles are required to be configured, or **2** if VSI profiles are not required to be configured, but should be configured if possible. If this option is not

specified, then this option defaults to the value of the **--vlanbridge** option.

If this option has a value of **1** and the management console cannot configure all of the partition's VSI profiles, an error will occur and the operation will fail.

A value of **1** cannot be specified with this option when a value of **2** is specified with the **--vlanbridge** option.

This option is valid when resuming a partition or validating a partition resume operation only.

-w   The maximum time, in minutes, to wait for operating system commands issued by the management console during the partition state change operation to complete. If an operating system command does not complete within the time specified, the partition state change operation will be stopped.

wait-time must be a whole number. If wait-time is 0, the partition state change operation will not be timed out.

If this option is not specified, a default value of 3 minutes is used.

-d   The level of detail requested from operating system commands issued by the management console during the partition state change operation. Valid values are **1** (lowest) through **5** (highest).

If this option is not specified, a default value of 1 is used.

-v   Specify this option to enable verbose mode for the partition state change operation. When verbose mode is enabled, detail messages and warning messages are displayed for a successful partition state change operation. Detail messages and warning messages are always displayed for a partition state change operation that fails, regardless of whether this option is specified.

When the **--nodetails** option is also specified, no detail messages are displayed.

This option can be specified for a partition suspend, resume, or recover operation. This option can also be specified when shutting down a suspended partition.

--nodetails
Specify this option to suppress the display of all detail messages.

--immed
Specify this option on a partition shutdown or restart operation to perform an immediate shutdown or restart.

If this option is specified, but the **--restart** option is not, then an immediate shutdown (operator panel function 8) is performed. If both the **--immed** and the **--restart** options are specified, an immediate restart (operator panel function 3) is performed. If neither the **--immed** nor the **--restart** option is specified, a delayed shutdown is performed.

When shutting down a suspended partition, this option is ignored.

--restart
Specify this option on a partition shutdown operation to restart the partition.

If this option is specified, but the **--immed** option is not, a dump restart operation (operator panel function 22) is performed. If both the **--immed** and the **--restart** options are specified, an immediate restart (operator panel function 3) is performed.

This option is not valid when shutting down a suspended partition.

--force When performing a recover operation, use this option to force the recover operation to proceed when errors are encountered.

When performing a shutdown operation for a suspended partition, use this option to immediately power off the partition without restoring the configuration of its virtual I/O. You will not be able to restart the partition without manually restoring the virtual I/O configuration.

You can also use this option to force a migrating partition to be shut down. Use this option carefully as manual intervention may be required to recover the failed migration after the partition is shut down.

--help Display the help text for this command and exit.

EXAMPLES

Suspend partition **aix1**:

chlparstate -m sys1 -o suspend -p aix1

Resume partition **aix1**:

chlparstate -m sys1 -o resume -p aix1

Resume partition **aix1**, and do not fail if an equivalent MPIO configuration of all of the partition's virtual SCSI and virtual fibre channel adapters cannot be maintained:

chlparstate -m sys1 -o resume -p aix1 --mpio 2

Validate the operation to suspend the partition with ID **8**:

chlparstate -m 8233-E8B*7654321 -o validate -t suspend --id 8

Stop the partition suspend opertion that is just starting for partition **mylpar**:

chlparstate -m systemP -o cancel -t suspend -p mylpar

Recover the failed partition resume operation for partition **mylpar**:

chlparstate -m systemP -o recover -t resume -p mylpar

Shut down the partition with ID **1**:

chlparstate -m 9406-570*1234567 -o shutdown --id 1

Immediately restart the partition **p1**:

chlparstate -m sys1 -o shutdown -p p1 --immed --restart

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
     chsysstate, **lssyscfg**

NAME

chlparutil - change utilization data collection settings

SYNOPSIS

chlparutil -r config [**-m** *managed-system*] **-s** *sample-rate*
[**--help**]

DESCRIPTION

chlparutil changes the Hardware Management Console (HMC) settings for utilization data collection for managed systems.

OPTIONS

-r   The type of utilization data collection resources to change. The only valid value is **config** for configuration settings.

-m   The name of the managed system for which the settings for utilization data collection are to be changed. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*ssssssss*, where *tttt* is the machine type, *mmm* is the model, and *ssssssss* is the serial number of the managed system. The *tttt-mmm*ssssssss* form must be used if there are multiple managed systems with the same user-defined name, or if the HMC does not currently have a connection to the managed system.

If this option is not specified, then the HMC settings for utilization data collection for all of the systems currently managed by this HMC, and for all of the systems for which utilization data has been previously collected by this HMC will be changed. Even though utilization data collection is enabled for a managed system, the HMC will only collect utilization data for that managed system if the HMC currently has a connection to that managed system.

This command only changes the settings for utilization data collection for this HMC. Utilization data collection by other HMCs for the same managed systems is not affected.

-s   The rate, in seconds, at which to sample the utilization data. Sample rates of **0**, **30** (30 seconds), **60** (60 seconds), **300** (5 minutes), **1800** (30 minutes), and **3600** (1 hour) are supported. A sample rate of **0** disables utilization data collection.

--help   Display the help text for this command and exit.

EXAMPLES

Enable the collection of utilization data with a sample rate of 1 hour for all managed systems:

chlparutil -r config -s 3600

Enable the collection of utilization data with a sample rate of 60 seconds for the managed system **mySystem**:

chlparutil -r config -s 60 -m mySystem

Disable the collection of utilization data for the managed system with the type, model, and serial number **9406-520*98765432**:

chlparutil -r config -s 0 -m 9406-520*98765432

ENVIRONMENT

None

BUGS

None

AUTHOR
    IBM Austin

SEE ALSO
    lslparutil, **rmlparutil**

NAME

chnportlogin - N_Port log in and log out

SYNOPSIS

chnportlogin -o {**login** | **logout**} **-m** *managed-system*
{**-p** *partition-name* | **--id** *partition-ID*} [**-n** *profile-name*]
[**-w** *wait-time*] [**-d** *detail-level*] [**-v**] [**--help**]

DESCRIPTION

chnportlogin performs N_Port login and logout operations for virtual Fibre Channel client adapters that are configured in a partition or a partition profile.

When performing a login operation, all inactive WWPNs will be activated, including the second WWPN in the pair assigned to each virtual Fibre Channel client adapter. When performing a logout operation, all WWPNs not in use will be deactivated.

To successfully log in a virtual Fibre Channel client adapter, the corresponding virtual Fibre Channel server adapter must exist and it must be mapped.

The primary intent of the login operation is to allow the system administrator to allocate, log in and zone WWPNs before the client partition is activated. With best practices, the WWPNs should be logged out after they are zoned on the Storage Area Network (SAN) and before the partition is activated. If a partition is activated with WWPNs still logged in, the WWPNs used for client access are automatically logged out so they can be logged in by the client.

The login operation can also be used to zone the inactive WWPNs in preparation for a partition mobility operation. If the login operation is performed when a partition is already active, only the inactive WWPNs are activated to the "constant login" state similar to physical Fibre Channel adapters. The WWPNs that are already in use by the virtual Fibre Channel client adapters remain in control of the virtual Fibre Channel clients and are not under the control of this command. This means that active client virtual Fibre Channel WWPNs do not achieve a "constant login" state similar to physical Fibre Channel adapters.

The login operation can interfere with partition mobility operations. Best practice is to perform a logout operation for a partition before attempting to migrate the partition to another server. If a mobility operation is attempted with WWPNs still logged in, the firmware will attempt to automatically log out the WWPNs. However, in some cases, the logouts may not complete in time and may therefore cause the mobility operation to fail.

OPTIONS

-o
The operation to perform. Valid values are **login** to log in the WWPNs assigned to the virtual Fibre Channel client adapters, or **logout** to log out the WWPNs assigned to the virtual Fibre Channel adapters.

-m
The name of the managed system on which to perform the operation. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

-p
The name of the partition for which to perform the operation.

You must either use this option to specify the name of the partition, or use the **--id** option to specify the partition's ID. The **-p** and the **--id** options are mutually exclusive.

--id
The ID of the partition for which to perform the operation.

You must either use this option to specify the ID of the partition, or use the **-p** option to specify the partition's name. The **--id** and the **-p** options are mutually exclusive.

-n   The name of the partition profile for which to perform the operation. The operation will be performed for all of the virtual Fibre Channel client adapters configured in the partition profile. If this option is not specified, then the operation will be performed for all of the virtual Fibre Channel client adapters in the current configuration of the partition.

-w   The maximum time, in minutes, to wait for each Virtual I/O Server (VIOS) command issued by the HMC to complete. If a VIOS command does not complete within the time specified, the login or logout operation for the virtual Fibre Channel client adapter will be stopped.

wait-time must be a whole number. If wait-time is 0, the operation will not be timed out.

If this option is not specified, a default value of 3 minutes is used.

-d   The level of detail requested from VIOS commands issued by the HMC. Valid values are **0** (none) through **5** (highest).

If this option is not specified, a default value of 1 is used.

-v   Specify this option to enable verbose mode. When verbose mode is enabled and this command succeeds, all warning messages are displayed. When this command partially succeeds or fails, all warning and error messages are displayed regardless of whether this option is specified.

--help Display the help text for this command and exit.

EXIT STATUS
This command has the following return codes:

0   Success

100   Partial success

Any other value means the command failed.

EXAMPLES
Log in all of the inactive WWPNs assigned to the virtual Fibre Channel client adapters in a partition's current configuration:

chnportlogin -m 9117-MMB*1234567 -o login -p clientPartition

Log in all of the WWPNs assigned to the virtual Fibre Channel client adapters in a partition profile:

chnportlogin -m sys1 -o login -p clientPartition -n defaultProf

Log out all of the WWPNs assigned to the virtual Fibre Channel client adapters in a partition profile:

chnportlogin -m sys1 -o logout -p clientPartition -n defaultProf

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
lsnportlogin

NAME
>   chpcm - change Performance and Capacity Monitoring settings

SYNOPSIS
>   **chpcm -o s -t energy -a "***attributes***"** [**--help**]

DESCRIPTION
>   **chpcm** changes Performance and Capacity Monitoring (PCM) settings.

OPTIONS
>   **-o**   The operation to perform. The only valid value is **s** for set.
>
>   **-t**   The type of settings to change. The only valid value is **energy** for energy metrics settings.
>
>   **-a**   The attributes to be set with this command. The attribute data consists of attribute name/value
>   pairs, which are in comma separated value (CSV) format. The attribute data must be enclosed in
>   double quotes.
>
>   The format of the attribute data is as follows:
>
>   *attribute-name*=*value*,*attribute-name*=*value*,...
>
>   Valid attribute names:
>   **pue**
>   Power Usage Effectiveness used in the calculation of
>   carbon footprint
>   **carbon_intensity**
>   Specify in grams/watt-hour
>
>   **--help**   Display the help text for this command and exit.

EXAMPLES
>   Change the PUE and carbon intensity settings:
>
>   **chpcm -o s -t energy -a "pue=1.25,carbon_intensity=.35"**

ENVIRONMENT
>   None

BUGS
>   None

AUTHOR
>   IBM Austin

SEE ALSO
>   **lspcm**

NAME
    chprimhmc - change primary Hardware Management Console

SYNOPSIS
    chprimhmc -m *managed-system* [**--help**]

DESCRIPTION
    chprimhmc forces this Hardware Management Console (HMC) to become the primary HMC for perform-
    ing service functions for *managed-system*.

OPTIONS
    -m   The name of the managed system for which to force this HMC to become the primary HMC. The
             name may either be the user-defined name for the managed system, or be in the form *tttt-*
             mmm*sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number
             of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed
             systems with the same user-defined name.

    --help Display the help text for this command and exit.

EXAMPLES
    Force this HMC to become the primary HMC for managed system **server1**:

    chprimhmc -m server1

ENVIRONMENT
    None

BUGS
    None

AUTHOR
    IBM Austin

SEE ALSO
    lsprimhmc

NAME
chproxy - change proxy settings

SYNOPSIS
chproxy -t sslproxy -o {**enable** | **disable**}
 [**-h** *host-name* **-p** *port* [**-u** *user-ID* [**--passwd** *password*]]]
 [**--help**]

DESCRIPTION
chproxy changes the Secure Sockets Layer (SSL) proxy settings used by the Hardware Management Console when performing call-home functions.

This command is deprecated. Use the chsacfg command instead.

OPTIONS
-t   The type of proxy settings to change. The only valid value is **sslproxy** to change the SSL proxy settings used when performing call-home functions.

-o   The operation to perform. Valid values are **enable** to enable the use of an SSL proxy server for call-home functions, and **disable** to disable the use of an SSL proxy server for call-home functions.

-h   The host name or IP address of the SSL proxy server.

           This option is required when enabling the use of an SSL proxy server. Otherwise, this option is not valid.

-p   The port number to use on the SSL proxy server.

           This option is required when enabling the use of an SSL proxy server. Otherwise, this option is not valid.

-u   The user ID to use for SSL proxy server authentication.

           This option is only valid when enabling the use of an SSL proxy server.

--passwd
           The password to use for SSL proxy server authentication. If this option is omitted, you will be prompted to enter the password.

           This option is only valid when enabling the use of an SSL proxy server.

--help   Display the help text for this command and exit.

EXAMPLES
Enable the use of an SSL proxy server without authentication for call-home:

chproxy -t sslproxy -o enable -h 9.3.12.345 -p 30000

Enable the use of an SSL proxy server with authentication for call-home (you will be prompted for the password):

chproxy -t sslproxy -o enable -h server1 -p 30000 -u adminuser

Disable the use of an SSL proxy server for call-home:

chproxy -t sslproxy -o disable

ENVIRONMENT
None

BUGS
        None
AUTHOR
        IBM Austin
SEE ALSO
        lsproxy

NAME
       chpsm - change Power systems management console configuration

SYNOPSIS
       chpsm -o s -a "*attributes***"** [**-r**] [**--help**]

DESCRIPTION
       chpsm changes Power systems management console configuration settings.

       You must restart the management console for the changes to take effect.

OPTIONS
       -o   The operation to perform. The only valid value is **s** for a set operation.

       -a   The configuration data to set. The configuration data consists of attribute name/value pairs, which
                 are in comma separated value (CSV) format. The configuration data must be enclosed in double
                 quotes.

                 The format of the configuration data is as follows:

                 attribute-name=*value***,***attribute-name*=*value***,***...*

                 Note that certain attributes accept a comma separated list of values, as follows:

                 "*attribute-name*=*value***,***value***,***...***",***...*

                 When a list of values is specified, the attribute name/value pair must be enclosed in double quotes.
                 Depending on the shell being used, nested double quote characters may need to be preceded by an
                 escape character, which is usually a '\' character.

                 Valid attribute names:
                    lpar_rmc_comm_ifs
                        Comma separated list of management console network
                        interfaces, in priority order, to enable for partition
                        communication. The following special values are also
                        allowed:
                        all - enable all management console network
                            interfaces for partition communication
                            (default value)
                        none - disable all management console network
                            interfaces for partition communication
                    rmc_comm_mode
                        RMC communication mode
                        Valid values:
                        legacy   - use TCP/UDP over port 657 only
                        tls_preferred - use TLS over port 12601 if
                                    supported by the partition or
                                    management console being communicated
                                    with, otherwise use TCP/UDP over
                                    port 657. Note that selecting this
                                    mode can impact performance if the
                                    partition or management console being
                                    communicated with does not support
                                    TLS.
                        tls_exclusive - use TLS over port 12601 only
                    rmc_conn_priority
                        RMC connection priority

Valid values:
default - default priority
direct - use direct TLS connections first. If
connection is unsuccessful it will be
proxied.
indirect - use indirect or proxy TLS connections
first

-r   Specify this option to restart the management console to apply the changes.

--help   Display the help text for this command and exit.

EXAMPLES

Enable only the **eth0** interface for partition communication and restart the HMC to apply the change:

chpsm -o s -a "lpar_rmc_comm_ifs=eth0" -r

Enable the **eth0** and **eth1** interfaces for partition communication, giving priority to **eth0**:

chpsm -o s -a ""lpar_rmc_comm_ifs=eth0,eth1""

Set the RMC communication mode to **tls_exclusive** and set the RMC connection priority to **direct**:

chpsm -o s -a "rmc_comm_mode=tls_exclusive,rmc_conn_priority=direct"

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

lspsm

NAME
>   chpwdpolicy - change password policies

SYNOPSIS
>   To activate a password policy:
>   **chpwdpolicy -o a** [**-n** *policy-name*]
>
>   To disable password policies:
>   **chpwdpolicy -o d**
>
>   To modify a password policy:
>   **chpwdpolicy -o m** {**-f** *input-data-file* | **-i "***input-data***"**}

DESCRIPTION
>   **chpwdpolicy** activates and disables password policies on the Hardware Management Console (HMC). **chp-wdpolicy** also modifies password policies.
>
>   Password policies are enforced for locally authenticated HMC users only. All HMC user passwords that are created or changed after a password policy is activated must conform to the activated policy.
>
>   After password policies are disabled, the only password rules that are enforced are the minimum and maximum password ages that are configured for each user.
>
>   The active password policy cannot be modified.

OPTIONS
>   **-o**   The operation to perform. Valid values are **a** to activate a password policy, **d** to disable password policies, and **m** to modify a password policy.
>
>   **-n**   The name of the password policy to activate. If this option is omitted, the pre-defined **HMC Medium Security Password Policy** password policy will be activated.
>
>   **-f**   The name of the file containing the data to modify a password policy. The data consists of attribute name/value pairs, which are in comma separated value (CSV) format.
>
>   The format of the data is as follows:
>
>   *attribute-name*=*value***,***attribute-name*=*value***,**...
>
>   Valid attribute names for this command:
>   **name**
>   The name of the password policy to modify.
>   [**new_name**]
>   The new name of the password policy.
>   [**description**]
>   [**min_pwage**]
>   The number of days that must elapse before a password
>   can be changed.
>   [**pwage**]
>   The number of days that can elapse before a password
>   expires and must be changed. A value of **99999**
>   indicates no password expiration.
>   [**warn_pwage**]
>   The number of days prior to password expiration when a
>   warning message will begin to be displayed.
>   [**min_length**]
>   The minimum password length.

[**hist_size**]
> The number of times a password must be changed before
> a password can be reused. This value cannot exceed
> 50.

[**min_digits**]
> The minimum number of digits that a password must
> contain.

[**min_uppercase_chars**]
> The minimum number of uppercase characters that a
> password must contain.

[**min_lowercase_chars**]
> The minimum number of lowercase characters that a
> password must contain.

[**min_special_chars**]
> The minimum number of special characters that a
> password must contain. Special characters include
> symbols, punctuation, and white space characters.

[**inactivity_expiration**]
> The number of days that can elapse before an HMC
> user is disabled due to inactivity. A value of **0**
> indicates no inactivity expiration.

Brackets around an attribute name indicate that the attribute is optional.

Comments are allowed in the input file. Comments must begin with the '#' character.

The data to modify a password policy is required to be specified with this option or the **-i** option.
The **-f** and the **-i** options are mutually exclusive.

-i   This option allows you to enter the data to modify a password policy on the command line, instead
of using a file. Data entered on the command line must follow the same format as data in a file,
and must be enclosed in double quotes.

The data to modify a password policy is required to be specified with this option or the **-f** option.
The **-i** and the **-f** options are mutually exclusive.

--help   Display the help text for this command and exit.

EXAMPLES

Activate the password policy **xyzPolicy**:

chpwdpolicy -o a -n xyzPolicy

Disable password policies:

chpwdpolicy -o d

Modify the password policy **xyzPolicy**:

chpwdpolicy -o m -i "name=xyzPolicy,min_pwage=5,pwage=90"

ENVIRONMENT
None

BUGS
None

AUTHOR

    IBM Austin

SEE ALSO

    lspwdpolicy, **mkpwdpolicy**, **rmpwdpolicy**

NAME

      chpwrmgmt - change power management settings

SYNOPSIS

      To enable or disable power saver mode:

          chpwrmgmt -m *managed-system* **-r sys -o** {**enable** | **disable**}

              [**-t** {**static** | **dynamic_favor_perf** | **dynamic_favor_power** |

                    fixed_max_frequency | **balanced_perf** |

                    dynamic_perf | **max_perf** | **power_saving** |**idle**}]

              [**--help**]

      To set or reset dynamic or idle power saver parameters:

          chpwrmgmt -m *managed-system* **-r sys -o** {**set** | **reset**}

              -t {**dynamic_parms** | **idle_parms**} [**-a "***attributes***"**]

              [**--help**]

DESCRIPTION

      chpwrmgmt configures the power management settings for the *managed-system*.

OPTIONS

      -m   The name of the managed system for which to configure power management settings. The name may either be the user-defined name for the managed system, or be in the form *tttt***-***mmm*******sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt***-***mmm*******sssssss* form must be used if there are multiple managed systems with the same user-defined name.

      -r   The type of resource for which to configure power management settings. The only valid value is **sys** for managed system.

      -o   The operation to perform. Valid values are **enable** to enable power saver mode, **disable** to disable power saver mode, **set** to set dynamic or idle power saver parameters, and **reset** to reset dynamic or idle power saver parameters to their default values.

                Power saver mode cannot be disabled on Power10 servers.

                Warning: enabling any of the power saver modes will cause changes in processor frequencies, changes in processor utilization, and changes in power consumption, which can cause performance of the managed system to vary.

                Warning: changing dynamic or idle power saver parameters can result in unexpected behavior and performance impacts. It is recommended that you consult your system provider before changing dynamic or idle power saver parameters.

      -t   The type of power saver mode to enable or the type of power saver parameters to set or reset. Valid power saver mode types are **static** for static power saver mode (POWER8 and POWER9 servers only) or fixed base frequency (Power10 servers only), **dynamic_favor_perf** for dynamic power saver mode favoring performance (POWER8 servers only), **dynamic_favor_power** for dynamic power saver mode favoring power (POWER8 servers only), **fixed_max_frequency** for fixed maximum frequency power saver mode (POWER8 servers only), **balanced_perf** for dynamic performance power saver mode (Power10 servers only), **dynamic_perf** for dynamic performance power saver mode (POWER9 servers only), **max_perf** for maximum performance power saver mode (POWER9 and Power10 servers only), **power_saving** for static power saver mode (Power10 servers only), and **idle** for idle power saver mode. Valid power saver parameter types are **dynamic_parms** for dynamic power saver tuning parameters and **idle_parms** for idle power saver parameters.

                When enabling power saver mode, if this option is not specified it defaults to **static**. With the exception of idle power saver mode, only one power saver mode can be enabled at a time. Idle

power saver mode can be enabled independently of all other modes.

You can use the **lspwrmgmt -m** *managed-system* **-r sys -F supported_power_saver_mode_types** command to display the power saver modes that are supported on the *managed-system*. Note that **idle** will not appear in this list. If **idle** power saver mode is not supported on the *managed-system*, the **lspwrmgmt -m** *managed-system* **-r sys -F idle_power_saver_mode** command will display **unavailable**.

To disable idle power saver mode, you must specify **idle** with this option. Otherwise, this option is not allowed when disabling power saver mode, as the current power saver mode will be disabled.

-a The power saver parameters to set. The data consists of attribute name/value pairs, which are in comma separated value (CSV) format.

The format of the attribute data is as follows:

attribute-name=value,*attribute-name=value*,...

The valid attribute names for setting dynamic power saver tuning parameters are listed below. Issue the **lspwrmgmt -m** *managed-system* **-r sys -t dynamic_parms** command to display the minimum and maximum values allowed for each parameter. Dynamic power saver tuning parameters are not supported for Enterprise Baseboard Management Controller (BMC) based managed systems.

    util_thresh_incr_freq
      percentage with up to 1 decimal place
    util_thresh_decr_freq
      percentage with up to 1 decimal place
    num_samples_util_stats
      integer
    freq_step_up_size
      percentage with up to 1 decimal place
    freq_step_down_size
      percentage with up to 1 decimal place
    active_cores_delta
      percentage
    active_slack_cores_util_thresh
      percentage with up to 1 decimal place
    core_freq_delta_state
      Valid values:
      0 - disable
      1 - enable
    core_max_freq_delta
      percentage

The valid attribute names for setting idle power saver parameters are listed below. Issue the **lspwrmgmt -m** *managed-system* **-r sys -t idle_parms** command to display the minimum and maximum values allowed for each parameter. For Enterprise BMC-based managed systems, the minimum and maximum values are documented below.

    enter_delay_seconds
      integer
      10 - **600** for Enterprise BMC-based managed systems
    exit_delay_seconds
      integer

10 - **600** for Enterprise BMC-based managed systems

enter_util_thresh
percentage
1 - **95** for Enterprise BMC-based managed systems
exit_util_thresh
percentage
5 - **95** for Enterprise BMC-based managed systems

This option is required when setting dynamic or idle power saver parameters. Otherwise this option is not valid.

--help   Display the help text for this command and exit.

EXAMPLES

Enable dynamic power saver mode favoring performance on managed system **system1**:

chpwrmgmt -m system1 -r sys -o enable -t dynamic_favor_perf

Enable idle power saver mode on managed system **system1**:

chpwrmgmt -m system1 -r sys -o enable -t idle

Disable the current power saver mode on managed system **9117-MMA*1234567**:

chpwrmgmt -m 9117-MMA*1234567 -r sys -o disable

Disable idle power saver mode on managed system **system1**:

chpwrmgmt -m system1 -r sys -o disable -t idle

Set the utilization thresholds for increasing and decreasing frequency on managed system **system1** to **95.5**%:

**chpwrmgmt -m system1 -r sys -o set -t dynamic_parms
 -a "util_thresh_incr_freq=95.5,util_thresh_decr_freq=95.5"**

Reset the dynamic power saver tuning parameters on managed system **system1** to their default values:

chpwrmgmt -m system1 -r sys -o reset -t dynamic_parms

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
lspwrmgmt

NAME
>   chrmtsupt - change remote support connection

SYNOPSIS
>   **chrmtsupt -o** {**open** | **close** | **gencode**} [**-m** *minutes*] [**-a** *access-code*]
>   [**-t** {**direct** | **proxy**}] [**-p** *proxy*] [**--help**]

DESCRIPTION
>   **chrmtsupt** starts or stops a remote support connection on the Hardware Management Console (HMC).

OPTIONS
>   **-o**   The operation to perform. Valid values are **open** to open a new remote support connection, **close**
>   to close the existing remote support connection, and **gencode** to generate a random access code for
>   a remote support connection.
>
>   **-m**   The number of minutes to keep the remote support connection open. Valid values are 1 - 2880
>   minutes.
>
>   This option is required when opening a remote support connection. Otherwise this option is not
>   valid.
>
>   **-a**   The access code to be used for the remote support connection.
>
>   This option is only allowed when opening a remote support connection. If this option is omitted,
>   no access code for the remote support connection is required.
>
>   **-t**   The type of connection to use. Valid values are **direct** to use a direct internet connection, and
>   **proxy** to use an SSH proxy server to connect to the internet.
>
>   This option is only allowed when opening a remote support connection. If this option is omitted,
>   it defaults to **direct**.
>
>   **-p**   The SSH proxy server and port to use. The format is *host-name-or-IP-address***:***port*.
>
>   This option is required when opening a remote support connection using an SSH proxy server.
>   Otherwise this option is not valid.
>
>   **--help**   Display the help text for this command and exit.

EXAMPLES
>   Open a direct remote support connection for 30 minutes and require an access code of
>   **PiMj7HHeTMI9AdkJ**:
>
>   **chrmtsupt -o open -m 30 -t direct -a PiMj7HHeTMI9AdkJ**
>
>   Open a remote support connection for 2 hours using an SSH proxy:
>
>   **chrmtsupt -o open -m 120 -t proxy -p proxy.company.com:80**
>
>   Generate a random access code for a remote support connection:
>
>   **chrmtsupt -o gencode**
>
>   Close the existing remote support connection:
>
>   **chrmtsupt -o close**

ENVIRONMENT
>   None

BUGS

     None

AUTHOR

     IBM Austin

SEE ALSO

     lsrmtsupt

NAME
>   chsacfg - change Service Agent configuration

SYNOPSIS
>   To add or remove authorized users:
>> **chsacfg -t authuser -o** {**add** | **remove**} **-a** *email-address*
>
>   To enable or disable call-home for a managed system or this HMC:
>> **chsacfg -t callhome -o** {**enable** | **disable**}
>>> {**-m** {*managed-system* | **hmc**} | **--all**}
>
>   To change call-home settings:
>> **chsacfg -t callhomeserver -o set**
>>> {**-f** *input-data-file* | **-i "***input-data***"**}
>
>   To test an existing Internet connection for performing call-home functions over an encrypted SSL connection (this operation may take a long time to complete):
>> **chsacfg -t callhomeserver -o test**
>
>   To enable or disable connection monitoring for a managed system:
>> **chsacfg -t connmon -o** {**enable** | **disable**}
>>> **-m** *managed-system*
>
>   To change connection monitoring timer settings for this HMC:
>> **chsacfg -t connmontimer -o set**
>>> {**-f** *input-data-file* | **-i "***input-data***"**}
>
>   To change customer information:
>> **chsacfg -t custinfo -o set**
>>> {**-f** *input-data-file* | **-i "***input-data***"**}
>
>   To change customer email notification settings:
>> **chsacfg -t email**
>>> **-o** {**enable** | **disable** | **setsmtp** | **add** | **remove** |
>>>>   **test** | **addfrom** | **rmfrom**}
>>> [**-a** {*email-address* | **all**}]
>>> [**--events** {**all** | **callhome**}]
>>> [**--schedops** {**all** | **failed** | **none**}]
>>> [**-h** *host-name* [**-p** *port-number*]]
>>> [**-e** {**ssl** | **tls** | **none**}]
>>> [**--auth** {**auto** | **digest-md5** | **login** | **plain** | **none**}]
>>> [**-u** *user-ID*] [**--passwd** *password*]
>
>   To test FTP server and firewall settings for the offload of service information or reset those settings to their default values:
>> **chsacfg -t ftp -o** {**test** | **reset**}
>
>   To change FTP firewall settings:
>> **chsacfg -t ftpfirewall**
>>> [**-o** {**add** | **remove** | **enable** | **disable**}]
>>> [**-h** *host-name*] [**-p** *port-number*]
>>> [**-u** *user-ID*] [**--passwd** *password*]
>>> [**--passive** *passive-mode*]
>>> [**--fwtype** *firewall-type*] [**-n** *name*]

To change FTP offload server settings:
>   **chsacfg -t ftpoffload**
>>   [**-o** {**enable** | **disable**}]
>>   [**-h** *host-name*] [**-p** *port-number*]
>>   [**-u** *user-ID*] [**--passwd** *password*]
>>   [**--passive** *passive-mode*] [**-d** *directory*]

To change SNMP trap configuration:
>   **chsacfg -t snmp**
>>   **-o** {**add** | **remove**}
>>   **-a** {*SNMP-address* | **all**} [**-p** *port-number*]
>>   [**--events** *SNMP-trap-list*]

To set SNMP options:
>   **chsacfg -t snmpopt -o set**
>>   {**-f** *input-data-file* | **-i** "*input-data*"}

DESCRIPTION

chsacfg changes the Service Agent configuration.

OPTIONS

-t   The type of Service Agent configuration information to change. Valid values are **authuser** for the
users that are authorized to access information collected by Electronic Service Agent for the systems managed by this Hardware Management Console (HMC), **callhome** for the call-home state for a managed system or this HMC, **callhomeserver** for the call-home server settings for this HMC, **connmon** for the connection monitoring setting for a managed system, **connmontimer** for the connection monitoring timer settings for this HMC, **custinfo** for customer information settings, **email** for customer email notification settings, **ftp** to test FTP server and firewall settings for the offload of service information or to reset those settings to their default values, **ftpfirewall** for FTP firewall settings, **ftpoffload** for FTP offload server settings, **snmp** for SNMP trap configuration, and **snmpopt** for SNMP options.

-o   The operation to perform. Valid values are:
>   **enable** - enable call-home for a managed system or this HMC,
>>   connection monitoring, customer email notification,
>>   FTP firewall settings, or FTP offload of service
>>   information
>   **disable** - disable call-home for a managed system or this
>>   HMC, connection monitoring, customer email
>>   notification, FTP firewall settings, or FTP offload
>>   of service information
>   **setsmtp** - set the SMTP server information for
>>   customer notification email
>   **add**   - add an authorized user, a notification email
>>   address, a name to the exclusion list for the FTP
>>   firewall server, or an address for SNMP trap
>>   notifications
>   **remove** - remove an authorized user, a notification email
>>   address, a name from the exclusion list for the FTP
>>   firewall server, or an address from the SNMP trap
>>   notification list
>   **set**   - set call-home server settings, connection
>>   monitoring timer settings, customer information, or
>>   SNMP options
>   **test**   - test an existing Internet connection for performing
>>   call-home functions, send a test email to a

notification email address, or test FTP server
and firewall settings used to transmit service
information

reset   - reset FTP server and firewall settings to
their default values

addfrom - set the email address from which customer
notification emails are sent

rmfrom   - reset the email address from which customer
notification emails are sent to the default
value

-a   The email address to add or remove as an authorized user, the email address to add, remove, or test
for customer notification email, the email address to set as the email address from which customer
notification emails are sent, or the SNMP address to add or remove for SNMP trap notifications.
SNMP addresses are specified in the form *Community-Name@IP-Address*. *Community-Name*
cannot contain the character '@'.

When adding or removing an authorized user, multiple email addresses can be specified with this
option. The email addresses must be comma separated.

When performing a remove or test operation for a customer notification email address, **all** can be
specified with this option instead of a specific email address. If **all** is specified, then the remove or
test operation will be performed for all notification email addresses.

When performing a remove operation for an SNMP address, **all** can be specified with this option
instead of a specific SNMP address. If **all** is specified, then the remove operation will be per-
formed for all SNMP trap notification addresses.

This option is required when adding or removing authorized users, when adding, removing, or
testing a customer notification email address, when setting the email address from which customer
notification emails are sent, or when adding or removing an SNMP trap notification address. This
option is not valid for any other operation.

-m   The name of the managed system for which to enable or disable call-home or connection monitor-
ing. The name may either be the user-defined name for the managed system, or be in the form *tttt-*
mmm*sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number
of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed
systems with the same user-defined name.

Specify **hmc** with this option to enable or disable call-home for this HMC.

You can either use this option to enable or disable call-home for this HMC or a single managed
system, or use the **--all** option to enable or disable call-home for this HMC and all systems man-
aged by this HMC. The **-m** and the **--all** options are mutually exclusive.

--all   Specify this option to enable or disable call-home for this HMC and all systems managed by this
HMC.

You can either use this option to enable or disable call-home for this HMC and all systems man-
aged by this HMC, or use the **-m** option to enable or disable call-home for this HMC or a single
managed system. The **--all** and the **-m** options are mutually exclusive.

-f   The name of the file containing the input data for this command. The input data consists of
attribute name/value pairs, which are in comma separated value (CSV) format.

The format of the input data is as follows:

attribute-name=*value***,***attribute-name*=*value***,**...

Note that certain attributes accept a comma separated list of values, as follows:

"*attribute-name*=*value***,***value***,**...**",**...

When a list of values is specified, the attribute name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

If '+=' is used in the attribute name/value pair instead of '=', then the specified *value* is added to the existing list.

If '**-=**' is used in the attribute name/value pair instead of '=', then the specified *value* is subtracted from the existing list.

Valid attribute names for setting call-home server settings:
> **is_hmc_callhome_server**
> > Valid values:
> > **0** - disable this HMC as a call-home server
> > **1** - enable this HMC as a call-home server
>
> **use_internet_conn**
> > Valid values:
> > **0** - do not use an existing Internet connection to
> >   perform call-home functions
> > **1** - use an existing Internet connection to perform
> >   call-home functions
>
> **use_ssl_proxy**
> > Valid values:
> > **0** - do not use an SSL proxy to access the Internet
> > **1** - use an SSL proxy to access the Internet
>
> **use_authentication**
> > Valid values:
> > **0** - do not authenticate with the SSL proxy
> > **1** - authenticate with the SSL proxy
>
> **host**
> > Host name or IP address of the SSL proxy
>
> **port**
> > Port number of the SSL proxy
>
> **user**
> > User name used to authenticate with the SSL proxy
>
> **password**
> > Password used to authenticate with the SSL proxy. If
> > omitted, you will be prompted to enter the password.
>
> **protocol**
> > Internet protocol used by the SSL proxy
> > Valid values:
> > **ipv4**   - IPv4
> > **ipv6**   - IPv6
> > **ipv4,ipv6** - try IPv6 then IPv4
>
> **servers**
> > Comma separated list of host names or IP addresses or
> > the value **discover**

Valid attribute names for setting connection monitoring timer settings:
    new_incident_minutes
    outage_disconnected_minutes
    recover_connected_minutes

Valid attribute names for setting customer information:
    admin_company_name
    admin_name
    admin_email
    admin_phone
    admin_alt_phone
    admin_fax
    admin_alt_fax
    admin_addr
    admin_addr2
    admin_city
    admin_country
        ISO 3166 2-letter country code
    admin_state
        2-letter abbreviation
    admin_postal_code
    sys_use_admin_info
        Valid values:
        0 - do not use the administrator's information as
          the system location
        1 - use the administrator's information as the
          system location
    sys_phone
    sys_addr
    sys_addr2
    sys_city
    sys_country
        ISO 3166 2-letter country code
    sys_state
        2-letter abbreviation
    sys_postal_code
    acct_customer_num
    acct_enterprise_num
    acct_sales_office
    acct_service_office
    acct_area

Valid attribute names for setting SNMP options:
    enhanced
        Valid values:
        0 - disable enhanced information for SNMP traps
        1 - enable enhanced information for SNMP traps

Input data for this command can be specified with this option or the **-i** option. The **-f** and the **-i** options are mutually exclusive.

-i   This option allows you to enter input data on the command line, instead of using a file. Data entered on the command line must follow the same format as data in a file, and must be enclosed in double quotes.

Input data for this command can be specified with this option or the **-f** option. The **-i** and the **-f** options are mutually exclusive.

--events

When adding a customer email notification address, specify the type of problem events for which the email address is to be notified. Valid values are **all** for all problem events and **callhome** for only call home problem events. If this option is not specified, then the email address will be notified for all problem events.

When adding an address for SNMP trap notifications, specify the list of SNMP traps for which the SNMP address is to be notified. If there is more than one SNMP trap, the SNMP traps must be separated by blanks. The defined SNMP traps can be listed by issuing the command **lssacfg -t snmptrapnames**.

This option is only valid when adding a customer email notification address or when adding an SNMP address for SNMP trap notifications.

--schedops

When adding a customer email notification address, specify the scheduled operations for which the email address is to be notified. Valid values are **all** for all scheduled operations, **failed** for failed schedule operations only, and **none** for no scheduled operations. If this option is not specified, then the email address will not be notified for any scheduled operations.

This option is only valid when adding a customer email notification address.

-h   When enabling customer email notification or setting the SMTP server information for customer notification email, use this option to specify the host name or IP address of the SMTP server.

When changing the FTP firewall settings, use this option to specify the host name or IP address of the firewall server.

When changing the FTP offload server settings, use this option to specify the host name or IP address of the FTP offload server.

This option is required when setting the SMTP server information for customer notification email.

-p   When setting the SMTP server information for customer notification email, use this option to specify the port number to use on the SMTP server. The default port number is 25.

When changing the FTP firewall settings, use this option to specify the port number to use on the firewall server. The default port number is 21.

When changing the FTP offload server settings, use this option to specify the port number to use on the FTP offload server. The default port number is 21.

When adding an SNMP trap notification address, use this option to specify the port number to listen for the SNMP trap. The default port number is 162.

-u   When setting the SMTP server information for customer notification email, use this option to specify the user ID to use for email authentication.

When changing the FTP firewall settings, use this option to specify the user ID to use to log in to the firewall server.

When changing the FTP offload server settings, use this option to specify the user ID to use to log in to the FTP offload server.

--passwd
> When setting the SMTP server information for customer notification email, use this option to specify the password for the user ID to use for email authentication. If this option is omitted, you will be prompted to enter the password.
>
> When changing the FTP firewall settings, use this option to specify the password to use to log in to the firewall server. If this option is omitted, you will be prompted to enter the password.
>
> When changing the FTP offload server settings, use this option to specify the password to use to log in to the FTP offload server. If this option is omitted, you will be prompted to enter the password.

-e   When setting the SMTP server information for customer notification email, use this option to specify the encryption method to use for email notification. Valid values are **ssl**, **tls**, and **none**.

--auth   When setting the SMTP server information for customer notification email, use this option to specify the authentication method to use for email notification. Valid values are **auto**, **digest-md5**, **login**, **plain**, and **none**.

-d   The directory to use on the FTP offload server.

--passive
> When changing the FTP firewall settings, use this option to specify the passive mode to use. Valid values are **on** for always use PASV, **off** for always use PORT, and **optional** for try PASV then PORT.
>
> When changing the FTP offload server settings, use this option to specify the passive mode to use. Valid values are **on** for always use PASV and **off** for always use PORT.

--fwtype
> The FTP firewall type to use when offloading service information. Valid values are:
> > **0** - do not use a firewall
> > **1** - connect to firewall server, but send
> >   "USER user@real.host.name"
> > **2** - connect to firewall server, log in with
> >   "USER fwuser" and "PASS fwpassword", and
> >   then "USER user@real.host.name"
> > **3** - connect to and log in to firewall server,
> >   and then use "SITE real.host.name" followed
> >   by "USER user" and "PASS password"
> > **4** - connect to and log in to firewall server,
> >   and then use "OPEN real.host.name" followed
> >   by "USER user" and "PASS password"
> > **5** - connect to firewall server, but send
> >   "USER user@fwuser@real.host.name" and
> >   "PASS pass@fwpass" to log in
> > **6** - connect to firewall server, but send
> >   "USER fwuser@real.host.name" and "PASS
> >   fwpass" followed by "USER user" and
> >   "PASS password" to complete the login
> > **7** - connect to firewall server, but send
> >   "USER user@real.host.name fwuser" and
> >   "PASS pass" followed by "ACCT fwpass" to
> >   complete the login
>
> This option is only valid when changing the FTP firewall settings.

      -n   The host name or domain name to add to or remove from the exclusion list for the firewall server. The exclusion list is a list of domains or hosts where the firewall should not be used.

                This option is required when adding or removing a name in the exclusion list for the FTP firewall server. This option is not valid for any other operation.

      --help   Display the help text for this command and exit.

EXAMPLES

Add users that are authorized to access information collected by Electronic Service Agent for the systems managed by this HMC:

chsacfg -t authuser -o add -a user1@company.com,user2@company.com

Enable call-home for this HMC and all systems managed by this HMC:

chsacfg -t callhome -o enable --all

Disable call-home for this HMC:

chsacfg -t callhome -o disable -m hmc

Configure the call-home server settings for this HMC:

chsacfg -t callhomeserver -o set -i "is_hmc_callhome_server=1, use_internet_conn=1,use_ssl_proxy=1,use_authentication=1, host=9.53.2.5,port=8080,user=joeuser,protocol=ipv4, "servers=sys1.company.com,sys2.company.com""

Enable connection monitoring for the managed system **sys1**:

chsacfg -t connmon -o enable -m sys1

Change a connection monitoring timer setting for this HMC:

chsacfg -t connmontimer -o set -i "new_incident_minutes=30"

Set customer information:

chsacfg -t custinfo -o set -i "admin_company_name=My Company, admin_name=Joe Customer,admin_email=joe@my.company.com, admin_phone=512-555-1212,admin_addr=1234 Company Ave., admin_city=Austin,admin_country=US,admin_state=TX, admin_postal_code=78759,sys_use_admin_info=1"

Enable customer email notification for problem events:

chsacfg -t email -o enable

Set the SMTP server information for customer notification email (you will be prompted to enter the password):

chsacfg -t email -o setsmtp -h mycompany.com -p 30 -e ssl --auth auto -u user1

Add an email address to be notified when call home problem events occur:

chsacfg -t email -o add -a addr1@mycompany.com
--events callhome

Send a test email to all customer notification email addresses:

chsacfg -t email -o test -a all

Set the email address from which customer notification emails are sent:

chsacfg -t email -o addfrom -a myuser@mycompany.com

Enable the use of FTP to offload service information and set the FTP server information:

chsacfg -t ftpoffload -o enable -h ftphost -u ftpuser
--passwd userpwd

Set the FTP firewall server information to be used when offloading service information:

chsacfg -t ftpfirewall --fwtype 1 -h ftpfirewall
-u ftpuser --passwd userpwd

Add a name to the exclusion list for the FTP firewall server:

chsacfg -t ftpfirewall -o add -n excludedhost

Disable the use of an FTP firewall when offloading service information:

chsacfg -t ftpfirewall --fwtype 0

Add an SNMP notification to community **mySNMP** at IP address **target.com** for SNMP trap 3:

chsacfg -t snmp -o add -a mySNMP@target.com --events Trap3

Remove all SNMP trap notification addresses:

chsacfg -t snmp -o remove -a all

Enable enhanced information for SNMP traps:

chsacfg -t snmpopt -o set -i "enhanced=1"

ENVIRONMENT
       None
BUGS
       None
AUTHOR
       IBM Austin
SEE ALSO
       lssacfg

NAME

> chspsnmp - change service processor Simple Network Management Protocol configuration

SYNOPSIS

> **chspsnmp -m** *managed-system* **-o** {**add** | **remove**} **-h** *host-name* [**-p** *port*]
> [**--help**]

DESCRIPTION

> **chspsnmp** changes the Simple Network Management Protocol (SNMP) trap-based alert target configuration for an OpenPower managed system.

OPTIONS

> **-m**   The name of the OpenPower managed system for which to change the SNMP trap-based alert target configuration. The name may either be the user-defined name for the managed system, or be in the form *tttt*-*mmm**sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt*-*mmm**sssssss form must be used if there are multiple managed systems with the same user-defined name.
>
> **-o**   The operation to perform. Valid values are **add** to add a target for SNMP trap-based alerts from the *managed-system*, and **remove** to remove a target from the SNMP trap-based alerts list for the *managed-system*.
>
> **-h**   The host name or IP address of the target to add or remove.
>
> **-p**   The network port number of the target to add. If this option is not specified when adding a target, the network port number is set to 162.
>
> > This option is only valid when adding a target.
>
> **--help**   Display the help text for this command and exit.

EXAMPLES

> Add the target with IP address **9.3.15.143** to receive SNMP trap-based alerts from the OpenPower managed system **bmcSys**:
>
> **chspsnmp -m bmcSys -o add -h 9.3.15.143**

ENVIRONMENT

> None

BUGS

> None

AUTHOR

> IBM Austin

SEE ALSO

> **lsspsnmp**

NAME

chstat - change statistics collection settings

SYNOPSIS

chstat -r vlan [**-m** *managed-system*] **-s** *sample-rate* [**--help**]

DESCRIPTION

chstat changes the Hardware Management Console (HMC) settings for statistics collection for managed systems.

OPTIONS

-r   The type of resources for which to change the settings for statistics collection. The only valid value is **vlan** for Virtual Local Area Network (VLAN) statistics.

-m   The name of the managed system for which to change the settings for statistics collection. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

If this option is not specified, then the settings for statistics collection for all of the systems that support statistics collection and are currently managed by this HMC will be changed.

This command only changes the settings for statistics collection for this HMC. Statistics collection by other HMCs for the same managed systems is not affected.

-s   The rate, in seconds, at which to sample the statistics. Sample rates of **0**, **60** (1 minute), and **120** (2 minutes) are supported. A sample rate of **0** disables statistics collection.

--help   Display the help text for this command and exit.

EXAMPLES

Enable VLAN statistics collection with a sample rate of 1 minute for all managed systems that support VLAN statistics collection:

chstat -r vlan -s 60

Enable VLAN statistics collection with a sample rate of 2 minutes for managed system **mySystem**:

chstat -r vlan -s 120 -m mySystem

Disable VLAN statistics collection for the managed system with the type, model, and serial number **8233-E8B*7654321**:

chstat -r vlan -s 0 -m 8233-E8B*7654321

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chsvc, **lsstat**

NAME

      chsvc - change a service

SYNOPSIS

      To start or stop monitoring managed systems using SNMP:

          chsvc -s snmp -o {**start** | **stop**} [**-m** *managed-system*] [**--help**]

      To add or remove a network management system to or from the SNMP trap notification list:

          chsvc -s snmp -o {**add** | **remove**} **--ip** *IP-address*

              [**--traps** *trap-list*] [**--help**]

      To start, stop, or restart the cloud connector:

          chsvc -s cloudconn -o {**start** | **stop** | **restart**} [**-k** *key*]

              [**--http** *proxy-URI*] [**--socks** *proxy-URI*]

              [**--auth** {**kerberos** | **ldap** | **digest-md5** | **basic**}]

              [**--addcert**] [**--purge**] [**--help**]

DESCRIPTION

      chsvc changes the configuration of a service, such as SNMP or cloud connector, on the Hardware Manag-
      ment Console (HMC).

OPTIONS

      -s   The service for which to change the configuration. Valid values are **snmp** for Simple Network
              Management Protocol (SNMP) version 3, and **cloudconn** for the cloud connector.

      -o   The operation to perform.

              Specify **start** to start monitoring managed systems on the HMC using SNMP. If the SNMPv3
              agent is not already running on the HMC, it will be started. In addition, Virtual Local Area Net-
              work (VLAN) statistics collection for the managed systems will be enabled, and the sample rate
              will be set to 1 minute. The **chstat** command can be used to change the sample rate.

              Specify **start** to start the cloud connector on the HMC.

              Specify **stop** to stop monitoring managed systems on the HMC using SNMP. Also, VLAN statis-
              tics collection for the managed systems will be disabled. In addition, if there are no remaining
              managed systems on the HMC that are being monitored, the SNMPv3 agent on the HMC will be
              stopped.

              Specify **stop** to stop the cloud connector on the HMC.

              Specify **add** to add a network management system to the SNMP trap notification list.

              Specify **remove** to remove a network management system from the SNMP trap notification list.

              Specify **restart** to stop then start the cloud connector on the HMC.

      -m   The name of the managed system to start or stop being monitored by the SNMPv3 agent on the
              HMC. The name may either be the user-defined name for the managed system, or be in the form
              tttt-mmm*sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial num-
              ber of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple man-
              aged systems with the same user-defined name.

              If this option is not specified for a start operation, then a maximum of five of the systems currently
              managed by the HMC will be monitored. If this option is not specified for a stop operation, then
              monitoring for all managed systems will be stopped.

--ip   The IP address or host name of the network management system to add to or remove from the SNMP trap notification list.

--traps A list of traps to send to the network management system. If multiple traps are specified, they must be comma separated.

For a list of all of the traps supported by the SNMPv3 agent on the HMC, run the **lssvc -s snmp -r trapnames** command.

This option is required when adding a network management system to the SNMP trap notification list. This option is not valid otherwise.

-k   The cloud connector key. This key is obtained from the Cloud Management Console Portal settings page under the Cloud Connector tab.

This option is required when starting or restarting the cloud connector. This option is not valid otherwise.

--http The HTTP proxy URI. This URI must be specified in the format [*user-ID***:**[*password*]**@**]*host-name*[**:***port*]. If *password* is omitted, you will be prompted to enter the password. If *port* is omitted, it will default to **3128**. *host-name* can either be the host name or IP address of the HTTP proxy server.

This option is only valid when starting or restarting the cloud connector.

--socks The SOCKS proxy URI. This URI must be specified in the format [*user-ID***:**[*password*]**@**]*host-name*[**:***port*]. If *password* is omitted, you will be prompted to enter the password. If *port* is omitted, it will default to **1080**. *host-name* can either be the host name or IP address of the SOCKS proxy server.

This option is only valid when starting or restarting the cloud connector.

--auth The user authentication type for the proxy connection. Valid values are **kerberos** for remote Kerberos authentication, **ldap** for remote LDAP authentication, **digest-md5** for digest authentication, and **basic** for basic authentication.

If this option is omitted when starting or restarting the cloud connector with a proxy, the user authentication type defaults to **basic**.

This option is only valid when starting or restarting the cloud connector with a proxy.

--addcert

The cloud connector must connect to cloud endpoints to start successfully. These endpoints are specified on the Cloud Management Console Portal settings page under the Cloud Connector tab. If the cloud connector encounters a non-trusted certificate chain in this communication path due to a proxy or a company's network firewall settings, these non-trusted certificates must be added to the HMC's truststore to enable communication between the cloud connector and the cloud endpoints. Specifying this **--addcert** option will automatically add the required certificates to the HMC's truststore. Alternatively the user can run the **chhmccert** command to add the required certificates to the HMC's truststore prior to starting or restarting the cloud connector.

This option is only valid when starting or restarting the cloud connector.

--purge

Specify this option to purge all data associated with this HMC in the cloud when the cloud connector is stopped.

This option is only valid when stopping the cloud connector.

      --help   Display the help text for this command and exit.

EXAMPLES

      Start the SNMPv3 agent on the HMC if it is not already running, and start monitoring managed system **sys1**:

      chsvc -s snmp -o start -m sys1

      Stop monitoring managed system **sys1** and stop the SNMPv3 agent on the HMC if no other managed systems are being monitored:

      chsvc -s snmp -o stop -m sys1

      Stop monitoring all managed systems and stop the SNMPv3 agent on the HMC:

      chsvc -s snmp -o stop

      Add notification of the network management system with IP address **9.3.99.100** of the **linkUp** and **linkDown** traps:

      chsvc -s snmp -o add --ip 9.3.99.100 --traps linkUp,linkDown

      Remove notification of the network management system with IP address **9.3.99.100**:

      chsvc -s snmp -o remove --ip 9.3.99.100

      Start the cloud connector on the HMC. You will be prompted to enter the password for **socksUser1**:

      chsvc -o start -s cloudconn --socks socksUser1:@socks.proxy.com:8080
      -k DxyzUFBhMVVYZ0hOeV1232FtVi03aERFdkI4NURoTG0yMTc1dHMyZGlMYU02ZabcSD
      V5ZEJRNFc2N3l3eU1EanNtTlExVXdZSENzc292cHAxZ95AzdR9elFfZzBYNnY1UjB1LUh
      vVGdjVEFXWUVVM2lWYWJkb1hsT3lzSW1Fa634R2xhd0lXcGtQYnFXb054MUF5WGs2UkxF
      S0ZUZ2Y1OFNJNDBRLWgzWE5DemlVbXVuSkZTZHN6ZDNzeHNuZmlKcXhlbHQtVStuV3lzM
      zQ0dEVMUUMzdFZyV2E1MndhekhSd1RxMS1pOXR0SpidRkFDR3lfdUFJcVBXVThWUnRKKR1
      BzeVRFXDJTTGNpSncyY3U2SE83VVF2VXBGQkRMVHRrbGRBaldGOEVDNG-
      pITkh3T1RmQWp
      uWDdYMkExWUZreEdLZ05ENkdNOTw4OHh3WXhRdF9WeDVBOnRyaMYsLXBvd2VyY2xvd-
      WQp
      resibHVlbWl4Lm5ldA

      Stop the cloud connector on the HMC:

      chsvc -o stop -s cloudconn

ENVIRONMENT
      None

BUGS
      None

AUTHOR
      IBM Austin

SEE ALSO
      chhmccert, **chstat**, **lsstat**, **lssvc**

25

NAME
    chsvcevent - updates serviceable events on the HMC

SYNOPSIS
    chsvcevent -o {**close** | **closeall** | **approve** | **callhome**}
     [**-p** *problem-number* **-h** *analyzing-HMC*] [**-c** *comment*] [**-n** *name*] [**--help**]

DESCRIPTION
    chsvcevent closes serviceable events on the Hardware Management Console (HMC).

    When the Event Manager for Call Home is enabled on the HMC, **chsvcevent** can also be used to approve
    and initiate call home of a serviceable event.

    chsvcevent can also be used to initiate call home of a serviceable event when the Event Manager for Call
    Home is not enabled on the HMC.

OPTIONS
    -o   The operation to perform. Valid values are **close** to close the specified serviceable event, **closeall**
        to close all serviceable events on this HMC, **approve** to approve and initiate call home of the spec-
        ified serviceable event when the Event Manager for Call Home is enabled on the HMC, and **call-**
        home to initiate call home of the specified serviceable event.

        When the Event Manager for Call Home is enabled on the HMC, the **-o callhome** option can be
        specified to initiate call home of the specified serviceable event, but the event will not be called
        home until it has been approved. The **-o approve** option can be specified instead to both approve
        and initiate call home of the event.

    -p   The problem number of the serviceable event to close, approve and initiate call home, or just initi-
        ate call home.

        The problem number can be obtained using the **lssvcevents** command.

        This option is not allowed when closing all serviceable events. This option is required for all other
        operations.

    -h   The analyzing HMC for the serviceable event to close, approve and initiate call home, or just initi-
        ate call home.

        The analyzing HMC can be obtained using the **lssvcevents** command.

        This option is not allowed when closing all serviceable events. This option is required for all other
        operations.

    -c   The comment to add to a serviceable event when closing it.

        This option is only valid when closing a single serviceable event or closing all serviceable events.

    -n   The comment author to add to a serviceable event when closing it.

        This option is only valid when closing a single serviceable event or closing all serviceable events.

    --help Display the help text for this command and exit.

EXAMPLES
    Close a serviceable event:

    chsvcevent -p 1048 -h 7315-C02/KLRMT0L -o close

    Close a serviceable event with a comment:

chsvcevent -p 1048 -h 7315-C02/KLRMT0L -o close -c "Resolved"
 -n "My Name"

Close all serviceable events on this HMC:

chsvcevent -o closeall

Approve and initiate the call home of a serviceable event:

chsvcevent -p 56 -h VM-V6a7-f60/6d11908 -o approve

Initiate the call home of a serviceable event:

chsvcevent -p 1092 -h 7042-CR8/21E401C -o callhome

ENVIRONMENT
   None
BUGS
   None
AUTHOR
   IBM Austin
SEE ALSO
   lssvcevents

NAME

    chsyscfg - change system resources

SYNOPSIS

    To change attributes:

        chsyscfg -r {**lpar** | **prof** | **sys** | **sysprof**} **-m** *managed-system*

            {**-f** *configuration-file* | **-i** "*configuration-data*"}

            [**--force**]

            [**--help**]

    To change partition attributes by applying a partition profile:

        chsyscfg -r lpar -m *managed-system*

            -o apply {**-p** *partition-name* | **--id** *partition-ID*}

            [**-n** *profile-name*]

            [**--help**]

DESCRIPTION

    chsyscfg changes the attributes of partitions, partition profiles, or system profiles for the *managed-system*. It can also change the attributes of the *managed-system*.

USAGE IN A POWERVM MANAGEMENT CONTROLLER MODE ENVIRONMENT

    When the *managed-system* is in PowerVM management controller mode, both the **chsyscfg -r lpar** and the **chsyscfg -r prof** commands may be used to change the current configuration of a partition. The following attributes are not allowed with the **chsyscfg -r lpar** command: **profile_name** and **sync_curr_profile**. The following attributes are not allowed with the **chsyscfg -r prof** command: **name** and **new_name**. The partition will be configured immediately with the specified attributes.

    When running **chsyscfg -r lpar -o apply** the **-n** option is not allowed. The last valid configuration partition profile will always be applied.

    The Hardware Management Console (HMC) must be the current PowerVM management controller for the *managed-system* when running the **chsyscfg -r lpar** and **chsyscfg -r prof** commands.

    The **chsyscfg -r sysprof** command is not allowed.

OPTIONS

    -r   The type of resources to change. Valid values are **lpar** for partitions, **prof** for partition profiles, **sys** for the managed system, and **sysprof** for system profiles.

    -m   The name of either the managed system to be changed, or the managed system which has the system resources to be changed. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

    -f   The name of the file containing the configuration data needed to change the resources. The configuration data consists of attribute name/value pairs, which are in comma separated value (CSV) format. These attribute name/value pairs form a configuration record. A line feed marks the end of a configuration record. The file must contain one configuration record for each resource to be changed, and each configuration record must be for the same resource type. If the resource type is the managed system, then the file must contain only one configuration record.

            The format of a configuration record is as follows:

            attribute-name=*value***,***attribute-name*=*value***,**...<LF>

            Note that certain attributes accept a comma separated list of values, as follows:

"*attribute-name*=*value*,*value*,...",...<LF>

When a list of values is specified, the attribute name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

If '+=' is used in the attribute name/value pair instead of '=', then the specified *value* is added to the existing value for the attribute if the attribute is numerical. If the attribute is a list, then the specified *value*(s) is added to the existing list.

If '-=' is used in the attribute name/value pair instead of '=', then the specified *value* is subtracted from the existing value for the attribute if the attribute is numerical. If the attribute is a list, then the specified *value*(s) is deleted from the existing list.

Attribute names for partitions:
    name | **lpar_id**
        name or ID of the partition to change (required)
    new_name
    default_profile
    ipl_source
        IBM i only
        Valid values are **a**, **b**, **c**, or **d**
    allow_perf_collection
        Valid values are:
        0 - do not allow
        1 - allow
        This attribute replaces the
        shared_proc_pool_util_auth attribute.
        Setting this attribute also sets the
        shared_proc_pool_util_auth attribute
        to the same value.
    shared_proc_pool_util_auth
        Valid values are:
        0 - do not allow authority
        1 - allow authority
        This attribute has been deprecated. Use
        the **allow_perf_collection** attribute
        instead. Setting this attribute also
        sets the **allow_perf_collection**
        attribute to the same value.
    work_group_id
        Specify **none** if you are not using
        Enterprise Workload Manager (EWLM)
    lpar_avail_priority
        Valid values are **0** - **255**.
    electronic_err_reporting
        IBM i only
        Valid values are:
        0 - disable
        1 - enable
    msp
        Virtual I/O server only
        Valid values are:
        0 - the partition is not a mover service

      partition

     1 - the partition is a mover service
      partition

time_ref
    Valid values are:
    0 - the partition is not a time reference
      partition
    1 - the partition is a time reference
      partition

suspend_capable
    AIX, Linux, and IBM i only
    Valid values are:
    0 - the partition cannot be suspended
    1 - the partition can be suspended

simplified_remote_restart_capable
    AIX, Linux, and IBM i only
    Valid values are:
    0 - remote restart without using a reserved storage
      device cannot be performed for the partition
    1 - remote restart without using a reserved storage
      device can be performed for the partition

remote_restart_capable
    AIX, Linux, and IBM i only
    Valid values are:
    0 - remote restart using a reserved storage device
      cannot be performed for the partition
    1 - remote restart using a reserved storage device
      can be performed for the partition

primary_rs_vios_name | **primary_rs_vios_id**
    Remote restart capable partitions only

secondary_rs_vios_name | **secondary_rs_vios_id**
    Remote restart capable partitions only
    To set no secondary reserved storage VIOS specify
    none for **secondary_rs_vios_id**

rs_device_name
    Remote restart capable partitions only
    Name of the device on the primary reserved storage
    VIOS partition

vtpm_enabled
    AIX, Linux, and VIOS only
    Valid values are:
    0 - virtual Trusted Platform Module (vTPM) is not
      enabled for this partition
    1 - vTPM is enabled for this partition

vtpm_version
    AIX, Linux, and VIOS only
    The valid values for the *managed-system* are
    displayed by the **lssyscfg -r sys -m** *managed-system*
    -F supported_vtpm_versions command.

vtpm_encryption
    AIX, Linux, and VIOS only
    The valid values for the *managed-system* are
    displayed by the **lssyscfg -r sys -m** *managed-system*
    -F supported_vtpm_encryptions command.

os400_restricted_io_mode
   IBM i only
   Valid values are:
   0 - disable IBM i restricted I/O mode
   1 - enable IBM i restricted I/O mode
sync_curr_profile
   Specifies whether this partition's current
   configuration is to be synchronized with its
   current active profile. Valid values are:
   0 - disable synchronization
   1 - enable synchronization
   2 - suspend synchronization until the next
      time a profile is activated or applied
powervm_mgmt_capable
   Linux only
   Valid values are:
   0 - do not allow this partition to provide
      PowerVM management functions
   1 - enable this partition to provide PowerVM
      management functions
migration_disabled
   AIX, Linux, and IBM i only
   Valid values are:
   0 - do not disable partition migration for this
      partition
   1 - disable partition migration for this
      partition
boot_string
   AIX, Linux, and VIOS only
secure_boot
   AIX, Linux, and VIOS only
   Valid values are:
   0   - disable secure boot for this partition
   1   - enable secure boot in log only mode for
      this partition
   2   - enable secure boot for this partition
   3 - **9** - advanced settings, consult your operating
      system documentation
virtual_serial_num
   AIX, Linux, and IBM i only
   Virtual serial number, or one of the following values:
   auto - automatically assign a virtual serial number
   none - no virtual serial number
keystore_kbytes
   kilobytes
description
keystore_signed_updates
   Valid values are:
   0 - disable
   1 - enable
linux_dynamic_key_secure_boot
   Linux only
   Valid values are:
   0 - disable

1 - enable
keystore_signed_updates_without_verification
Valid values are:
0 - disable
1 - enable

Attribute names for partition profiles:
name
name of the partition profile to
change (required)
lpar_name | **lpar_id**
name or ID of the partition for
which the profile to change is
defined (required)
new_name
min_mem
megabytes
desired_mem
megabytes
max_mem
megabytes
min_num_huge_pages
AIX and Linux only
desired_num_huge_pages
AIX and Linux only
max_num_huge_pages
AIX and Linux only
mem_mode
Valid values are:
ded   - dedicated memory
shared - shared memory
desired_io_entitled_mem
Specify the number of megabytes or specify **auto** for
automatic I/O entitled memory management mode
mem_weight
primary_paging_vios_name | **primary_paging_vios_id**
secondary_paging_vios_name | **secondary_paging_vios_id**
To set no secondary paging VIOS specify **none** for
secondary_paging_vios_id
mem_expansion
Valid values are:
0   - disable Active Memory Expansion
1.00-**10.00** - expansion factor
hpt_ratio
Ratio of hardware page table size to the maximum
memory for the partition. Valid values are displayed
by the **lshwres -r mem -m** *managed-system*
--level sys -F possible_hpt_ratios command.
ppt_ratio
Ratio of physical page table size to the maximum
memory for the partition. Valid values are displayed
by the **lshwres -r mem -m** *managed-system*
--level sys -F possible_ppt_ratios command.
proc_mode

Valid values are:
ded   - dedicated processors
shared - shared processors
min_procs
desired_procs
max_procs
min_proc_units
desired_proc_units
max_proc_units
sharing_mode
Valid values for partitions using
dedicated processors are:
keep_idle_procs - never share
processors
share_idle_procs - share processors only
when partition is inactive
share_idle_procs_active - share
processors only when partition
is active
share_idle_procs_always - always share
processors
Valid values for partitions using shared
processors are:
cap   - capped
uncap - uncapped
uncap_weight
Default value is **128**
shared_proc_pool_name | **shared_proc_pool_id**
affinity_group_id
Memory and processor affinity group in which the
partition will participate. Valid values are
none and **1** - **255**.
io_slots
Comma separated list of I/O slots, with
each I/O slot having the following
format:

slot-DRC-index/[*slot-IO-pool-ID*]/
is-required

Both '/' characters must be present, but
optional values may be omitted. Optional
values are *slot-IO-pool-ID*.

Valid values for *is-required*:
0 - no
1 - yes

For example:
21010003/3/1 specifies an I/O slot with a
DRC index of **21010003**, it is assigned to
I/O pool **3**, and it is a required slot.
lpar_io_pool_ids
comma separated

load_source_slot
   IBM i only
   DRC index of I/O slot, DRC index of SR-IOV logical
   port, or virtual slot number
alt_restart_device_slot
   IBM i only
   DRC index of I/O slot, DRC index of SR-IOV logical
   port, or virtual slot number
console_slot
   IBM i only
   DRC index of I/O slot, DRC index of SR-IOV logical
   port, virtual slot number, or the value **hmc**
alt_console_slot
   IBM i only
   DRC index of I/O slot
op_console_slot
   IBM i only
   DRC index of I/O slot
auto_start
   Valid values are:
   0 - off
   1 - on
boot_mode
   AIX, Linux, and virtual I/O server only
   Valid values are:
   norm - normal
   dd - diagnostic with default boot list
   ds - diagnostic with stored boot list
   of - Open Firmware OK prompt
   sms - System Management Services
power_ctrl_lpar_ids | **power_ctrl_lpar_names**
   comma separated
conn_monitoring
   Valid values are:
   0 - off
   1 - on
virtual_opti_pool_id
   IBM i only
   Valid values are:
   0 - virtual OptiConnect is disabled
   1 - virtual OptiConnect is enabled
max_virtual_slots
virtual_eth_adapters
   Comma separated list of virtual ethernet adapters,
   with each adapter having the following format:

   virtual-slot-number/*is-IEEE*/*port-vlan-ID*/
   [*additional-vlan-IDs*]/[*trunk-priority*]/
   is-required[/[*virtual-switch*][/[*MAC-address*]/
   [*allowed-OS-MAC-addresses*]/[*QoS-priority*]]]

   The first 5 '/' characters must be present. The 6th
   '/' character is optional, but it must be present if
   virtual-switch or any of the values following

virtual-switch are specified. The last 3 '/'
characters are optional, but all 3 must be present if
MAC-address, *allowed-OS-MAC-addresses*, or *QoS-priority*
is specified.

Optional values may be omitted. Optional values are
additional-vlan-IDs, *trunk-priority*, *virtual-switch*,
MAC-address, *allowed-OS-MAC-addresses*, and
QoS-priority.

Valid values for *is-IEEE* and *is-required*:
0 - no
1 - yes

If values are specified for *additional-vlan-IDs*, they
must be comma separated.

Valid values for *trunk-priority*:
0   - this adapter is not a trunk adapter (default
             value)
1 - **15** - this adapter is a trunk adapter with the
             specified priority

If *MAC-address* is not specified, a unique MAC address
will be automatically generated for the adapter. If
it is specified, it must be specified as 12
hexadecimal characters. It is highly recommended that
you do not specify *MAC-address* so that the MAC address
will be automatically generated.

allowed-OS-MAC-addresses can be a comma separated list
of 1 to 4 MAC addresses, where each MAC address is
specified as 12 hexadecimal characters, or it can be
one of the following values:
all - all OS defined MAC addresses are allowed
        (default value)
none - no OS defined MAC addresses are allowed

Valid values for *QoS-priority*:
none - do not use Quality of Service (QoS) (default
         value)
0 - **7** - the QoS priority level to use

For example:
13/1/5/6,7/2/1
specifies a virtual ethernet adapter with a virtual
slot number of **13**, it is IEEE 802.1Q compatible, it
has a port virtual LAN ID of **5**, additional virtual LAN
IDs of **6** and **7**, it is a trunk adapter with a trunk
priority of **2**, and it is required. It also
uses the default virtual switch, it uses an
automatically generated MAC address, it allows all OS
defined MAC addresses, and it does not use QoS.

4/1/3//0/1///fecd537a910b,fecd537a910c/2
specifies a virtual ethernet adapter with a virtual
slot number of **4**, it is IEEE 802.1Q compatible, it
has a port virtual LAN ID of **3**, no additional virtual
LAN IDs, it is not a trunk adapter, it is required, it
uses the default virtual switch, it uses an
automatically generated MAC address, it allows the OS
defined MAC addresses FE:CD:53:7A:91:0B and
FE:CD:53:7A:91:0C, and it uses a QoS priority level
of **2**.

virtual_eth_vsi_profiles
Comma separated list of virtual ethernet adapter
Virtual Station Interface (VSI) profile attributes:

virtual-slot-number/*VSI-manager-ID*/*VSI-type-ID*/
VSI-type-version

All 3 '/' characters must be present, and all values
are required.

For example:
15/2/1193040/1
specifies a VSI profile for the virtual ethernet
adapter in slot **15**. The VSI profile has a VSI
manager ID of **2**, a VSI type ID of **1193040**, and a
VSI type version of **1**.

virtual_fc_adapters
Comma separated list of virtual fibre channel
adapters, with each adapter having the following
format:

virtual-slot-number/*client-or-server*/
[*remote-lpar-ID*]/[*remote-lpar-name*]/
remote-slot-number/[*wwpns*]/*is-required*

All 6 '/' characters must be present, but optional
values may be omitted. Optional values are
remote-lpar-ID or *remote-lpar-name* (one of those
values is required, but not both).

wwpns is optional for a client adapter, and is not
allowed for a server adapter. If *wwpns* is not
specified, WWPNs will be automatically generated for a
client adapter. It is highly recommended that you do
not specify *wwpns* so that WWPNs will be automatically
generated, unless you are changing an existing virtual
fibre channel adapter and you want to retain its
existing WWPNs. If you do specify *wwpns*, you must
specify exactly two WWPNs, and they must be comma
separated.

Valid values for *client-or-server*:
client
server

Valid values for *is-required*:
0 - no
1 - yes

For example:
4/client//vios_p1/16//1
specifies a virtual fibre channel **client** adapter
with a virtual slot number of **4**, a remote (server)
partition name of **vios_p1**, a remote (server) slot
number of **16**, and it is required. WWPNs will be
automatically generated for this client adapter.

virtual_scsi_adapters
Comma separated list of virtual SCSI
adapters, with each adapter having the
following format:

virtual-slot-number/client-or-server/
[*remote-lpar-ID*]/[*remote-lpar-name*]/
[*remote-slot-number*]/*is-required*

All 5 '/' characters must be present, but
optional values may be omitted. Optional
values for server adapters are
remote-lpar-ID, *remote-lpar-name*,
and *remote-slot-number*. Optional values
for client adapters are *remote-lpar-ID* or
remote-lpar-name (one of those values
is required, but not both).

Valid values for *client-or-server*:
client
server

Valid values for *is-required*:
0 - no
1 - yes

For example:
14/client/2//13/0
specifies a virtual SCSI **client** adapter
with a virtual slot number of **14**, a
remote (server) partition ID of **2**, a
remote (server) slot number of **13**, and
it is not required.

virtual_serial_adapters
Comma separated list of virtual serial
adapters, with each adapter having the
following format:

virtual-slot-number/client-or-server/
[*supports-HMC*]/[*remote-lpar-ID*]/
[*remote-lpar-name*]/[*remote-slot-number*]/
is-required

All 6 '/' characters must be present, but
optional values may be omitted. Optional
values for server adapters are
supports-HMC, *remote-lpar-ID*,
remote-lpar-name, and *remote-slot-number*.
Optional values for client adapters are
remote-lpar-ID or *remote-lpar-name* (one
of those values is required, but not
both), and the *supports-HMC* value is
not allowed.

Valid values for *client-or-server*:
client
server

Valid values for *supports-HMC*:
0 - no

Valid values for *is-required*:
0 - no
1 - yes

For example:
14/server/0////0
specifies a virtual serial **server** adapter
with a virtual slot number of **14**, it does
not support an HMC connection, any client
adapter is allowed to connect to it, and
it is not required.

vnic_adapters
AIX, Linux, and IBM i only
Comma separated list of virtual NICs, with each
virtual NIC consisting of a list of colon separated
property name/value pairs, which can be specified
in any order:

property-name=*value***:***property-name*=*value***:**...

Property names:

slot_num
Required
port_vlan_id
Port VLAN ID or **0** to disable VLAN tag
insertions for untagged frames (default value)
pvid_priority
Valid values:
An integer between **0** and **7**, inclusive.
Default value is **0**.
allowed_vlan_ids
Comma separated list of VLAN IDs, or one of the
following values:
all - all VLAN IDs are allowed (default value)
none - no VLAN IDs are allowed

mac_addr
> 12 hexadecimal characters
> If not specified, a unique MAC address will be
> automatically generated for the virtual NIC.
> It is highly recommended that you use an
> automatically generated MAC address.

allowed_os_mac_addrs
> Comma separated list of MAC addresses, each
> specified as 12 hexadecimal characters. Other
> valid values:
> **all** - all OS defined MAC addresses are allowed
>   (default value)
> **none** - no OS defined MAC addresses are allowed

is_required
> Valid values:
> **0** - no
> **1** - yes (default value)

auto_priority_failover
> Valid values:
> **0** - automatic priority failover is disabled
> **1** - automatic priority failover is enabled
>   (default value)

backing_devices
> Required
> Comma separated list of virtual NIC backing
> devices, with each backing device having the
> following format:
>
> **sriov**/*vios-lpar-name*/*vios-lpar-ID*/
> *sriov-adapter-ID*/*sriov-physical-port-ID*/
> [*capacity*][/[*failover-priority*][/
> [*max-capacity*]]]
>
> The first 5 '/' characters must be present. The
> 6th '/' character is optional, but it must be
> present if *failover-priority* or *max-capacity*
> is specified. The 7th '/' character is optional,
> but it must be present if *max-capacity* is
> specified.
>
> Optional values may be omitted. Optional values
> are *capacity*, either *vios-lpar-name* or
> *vios-lpar-ID*, *failover-priority*, and
> *max-capacity*.
>
> Specify *capacity* and *max-capacity* each as
> a percentage with up to 2 decimal places.
> *max-capacity* defaults to **100** if not specified.
>
> Specify *failover-priority* as a value between **1**
> and **100** inclusive, with **1** being the highest
> priority. It defaults to **50** if not specified.
>
> For example:

**slot_num=5:backing_devices=sriov/vios1//1/0//1,
sriov/vios2//2/0//10/50** specifies a virtual NIC with
a virtual slot number of **5** and 2 backing devices.
The first backing device is on VIOS **vios1** and
physical port **0** of SR-IOV adapter **1** and has a failover
priority of **1**. The second backing device is on VIOS
vios2 and physical port **0** of SR-IOV adapter **2** and
has a failover priority of **10** and a maximum capacity
of **50**%. All the other virtual NIC properties are
configured with default values.

work_group_id
   Specify **none** if you are not using
   Enterprise Workload Manager (EWLM)

redundant_err_path_reporting
   Valid values are:
   0 - disable
   1 - enable

electronic_err_reporting
   IBM i only
   Valid values are:
   0 - disable
   1 - enable

lpar_proc_compat_mode
   The valid values for the *managed-system* are
   displayed by the **lssyscfg -r sys -m** *managed-system*
   -F lpar_proc_compat_modes command.

sriov_eth_logical_ports
   Comma separated list of SR-IOV ethernet logical ports,
   with each logical port consisting of a list of colon
   separated property name/value pairs, which can be
   specified in any order:

   property-name=*value***:***property-name*=*value***:**...

   Property names:

   adapter_id
      Required when using the = or += operator
   phys_port_id
      Required when using the = or += operator
   allowed_os_mac_addrs
      Comma separated list of MAC addresses, each
      specified as 12 hexadecimal characters. Other
      valid values:
      all - all OS defined MAC addresses are allowed
          (default value)
      none - no OS defined MAC addresses are allowed
   allowed_priorities
      Comma separated list of integers between **0** and
      7, inclusive, or one of the following values:
      all - all supported priorities are allowed
      none - no priorities are allowed (default value)
   allowed_vlan_ids
      Comma separated list of VLAN IDs, or one of the

following values:

all - all VLAN IDs are allowed (default value)

none - no VLAN IDs are allowed

capacity

A percentage with up to 2 decimal places. Must be a multiple of **min_eth_capacity_granularity** of the physical port, which is displayed by the **lshwres -m** *managed-system* **-r sriov --rsubtype physport --level** {**eth** | **ethc**} **-F min_eth_capacity_granularity** command. The minimum value and the default value is **min_eth_capacity_granularity**. The maximum value is **100**.

max_capacity

A percentage with up to 2 decimal places. The minimum value is **capacity**. The maximum value and the default value is **100**.

config_id

If not specified, the management console will assign the next available value.

Required when using the **-=** operator

diag_mode

Valid values:

0 - disable (default value)

1 - enable

Warning! If diagnostics mode is enabled, no other logical port may be attached to the physical port. If logical ports are already in use on the physical port, you will have to power off partitions or use Dynamic Logical Partitioning (DLPAR) to remove the logical ports that are attached to the physical port.

huge_dma_window_mode

Valid values:

0 - disable (default value)

1 - enable

logical_port_id

DRC index of an SR-IOV logical port. If not specified, an SR-IOV logical port will be automatically assigned.

mac_addr

12 hexadecimal characters

If not specified, a unique MAC address will be automatically generated for the logical port. It is highly recommended that you use an automatically generated MAC address.

port_vlan_id

Port VLAN ID or **0** to disable VLAN tag insertions for untagged frames (default value)

promisc_mode

Valid values:

0 - disable (default value)

1 - enable

      pvid_priority
        Valid values:
        An integer between **0** and **7**, inclusive.
        Default value is **0**.
      migratable
        Valid values:
        0 - this logical port cannot be migrated
          (default value)
        1 - this logical port can be migrated
      backup_device_type
        Backup device type for a migratable logical port
        Valid values:
        vnic - virtual NIC (default)
        veth - virtual ethernet
      backup_device_slot_num
        Defaults to the next available virtual slot
        number
      backup_vnic_backing_device
        Specify the following format:

        sriov/*vios-lpar-name*/*vios-lpar-ID*/
        sriov-adapter-ID/*sriov-physical-port-ID*/
        [*capacity*][/[/[*max-capacity*]]]

        The first 5 '/' characters must be present. The
        6th and 7th '/' characters are optional, but they
        must be present if *max-capacity* is specified.

        Optional values may be omitted. Optional values
        are *capacity*, either *vios-lpar-name* or
        vios-lpar-ID, and *max-capacity*.

        Specify *capacity* and *max-capacity* each as
        a percentage with up to 2 decimal places.
        max-capacity defaults to **100** if not specified.

        When the backup device type is virtual NIC, the
        management console assigns a backing device if
        this attribute is not specified. Note that the
        management console can only assign a backing
        device on an SR-IOV physical port that has the
        same port label as the physical port for this
        logical port.
      backup_veth_vnetwork
        Required when the backup device type is virtual
        ethernet

      For example:
      adapter_id=1:phys_port_id=0 specifies that an
      unconfigured SR-IOV logical port on physical port **0**
      of the SR-IOV adapter with the adapter ID of **1** will
      be selected and configured with default ethernet
      logical port values.
    sriov_roce_logical_ports

Comma separated list of SR-IOV RDMA over Converged
Ethernet (RoCE) logical ports, with each logical port
consisting of a list of colon separated property
name/value pairs, which can be specified in any order:

property-name=*value***:***property-name*=*value***:**...

Property names:

adapter_id
   Required when using the = or += operator
phys_port_id
   Required when using the = or += operator
allowed_os_mac_addrs
   Comma separated list of MAC addresses, each
   specified as 12 hexadecimal characters. Other
   valid values:
   all - all OS defined MAC addresses are allowed
       (default value)
   none - no OS defined MAC addresses are allowed
allowed_priorities
   Comma separated list of integers between **0** and
   7, inclusive, or one of the following values:
   all - all supported priorities are allowed
   none - no priorities are allowed (default value)
allowed_vlan_ids
   Comma separated list of VLAN IDs, or one of the
   following values:
   all - all VLAN IDs are allowed (default value)
   none - no VLAN IDs are allowed
capacity
   A percentage with up to 2 decimal places. Must
   be a multiple of **min_roce_capacity_granularity**
   of the physical port, which is displayed by the
   lshwres -m *managed-system* **-r sriov**
   --rsubtype physport --level roce -F
   min_roce_capacity_granularity command.
   The minimum value and the default value is
   min_roce_capacity_granularity. The maximum
   value is **100**.
max_capacity
   A percentage with up to 2 decimal places. The
   minimum value is **capacity**. The maximum value
   and the default value is **100**.
config_id
   If not specified, the management console will
   assign the next available value.
   Required when using the **-=** operator
diag_mode
   Valid values:
   0 - disable (default value)
   1 - enable

   Warning! If diagnostics mode is enabled, no other

logical port may be attached to the physical
port. If logical ports are already in use on the
physical port, you will have to power off
partitions or use Dynamic Logical Partitioning
(DLPAR) to remove the logical ports that are
attached to the physical port.

huge_dma_window_mode
Valid values:
0 - disable (default value)
1 - enable

logical_port_id
DRC index of an SR-IOV logical port. If not
specified, an SR-IOV logical port will be
automatically assigned.

mac_addr
12 hexadecimal characters
If not specified, a unique MAC address will be
automatically generated for the logical port.
It is highly recommended that you use an
automatically generated MAC address.

port_vlan_id
Port VLAN ID or **0** to disable VLAN tag
insertions for untagged frames (default value)

promisc_mode
Valid values:
0 - disable (default value)
1 - enable

pvid_priority
Valid values:
An integer between **0** and **7**, inclusive.
Default value is **0**.

For example:
adapter_id=1:phys_port_id=0:capacity=10 specifies that
an unconfigured SR-IOV logical port on physical port **0**
of the SR-IOV adapter with the adapter ID of **1** will
be selected and configured with a capacity of **10**% and
with default RoCE logical port values for the other
attributes.

Attribute names for a managed system:
new_name
power_off_policy
Valid values are:
0 - power off after all partitions are
shut down
1 - do not power off after all partitions
are shut down

service_lpar_id
Specify **none** to remove the service
partition assignment

service_lpar_name
power_on_lpar_start_policy
Valid values are **autostart**, **userinit**, or **autorecovery**.

This attribute replaces the **power_on_option** attribute.
Setting this attribute also sets the **power_on_option**
attribute to the equivalent value.

power_on_option
Valid values are **autostart** or **standby**.
This attribute has been deprecated. Use the
power_on_lpar_start_policy attribute instead. Setting
this attribute also sets the
power_on_lpar_start_policy attribute to the equivalent
value.

power_on_side
Valid values are **perm** or **temp**

sp_failover_enabled
Valid values are:
0 - disable service processor failover
1 - enable service processor failover

addr_broadcast_perf_policy
Valid values are:
chip_affinity
no_affinity
node_affinity

sys_time
Managed system date and time in the following format:

MM/*DD*/*YYYY hh*:*mm*:*ss*

where *MM* is the month, *DD* is the day, *YYYY* is the
year, *hh* is the hour in 24 hour format, *mm* is the
minute, and *ss* is the seconds.

This attribute can be set only when the managed system
is powered off.

mfg_default_boot_mode
Valid values are:
norm - normal
dd   - diagnostic with default boot list
ds   - diagnostic with stored boot list
of   - Open Firmware OK prompt
sms - System Management Services

mfg_default_ipl_source
Valid values are **a**, **b**, **c**, or **d**

description

vpp
Valid values are:
0 - disable Virtualization Protection Profile (VPP)
      auditing
1 - enable VPP auditing

Attribute names for system profiles:
name
name of the system profile to
change (required)
new_name
lpar_names | **lpar_ids**

comma separated
profile_names
comma separated

The **-f** and the **-i** options are mutually exclusive.

-i   This option allows you to enter configuration data on the command line, instead of using a file. Data entered on the command line must follow the same format as data in a file, and must be enclosed in double quotes.

When this option is used, only a single resource can be changed.

The **-i** and the **-f** options are mutually exclusive.

-o   The operation to perform. The only valid value is **apply** to apply a partition profile to a shutdown partition. Applying a partition profile is equivalent to activating a partition with that partition profile except the partition is not powered on.

-p   The name of the partition to which to apply the partition profile.

You can either use this option to specify the name of the partition, or use the **--id** option to specify the partition's ID. The **-p** and the **--id** options are mutually exclusive.

--id   The ID of the partition to which to apply the partition profile.

You can either use this option to specify the ID of the partition, or use the **-p** option to specify the partition's name. The **--id** and the **-p** options are mutually exclusive.

-n   The name of the partition profile to apply. If this option is omitted, the last valid configuration partition profile will be applied.

--force   When changing a partition profile, specify this option to allow a partition profile that is synchronized with the partition's current configuration to be changed. After the profile is changed, synchronization of a profile with the partition's current configuration will be suspended until the next time the partition is activated with a profile or a profile is applied to the partition.

When disabling the remote restart capability of a partition, specify this option to allow the capability to be disabled when the reserved storage device assigned to the partition cannot be read. Note that this will cause some partition settings, such as the partition's boot or IPL settings and the partition's time of day, to be reset to their default values.

--help   Display the help text for this command and exit.

EXAMPLES
In the following examples nested double quote characters are preceded by an escape character ('\'). The escape characters are required to run the commands locally on an HMC.

Change the managed system's user-defined name and power off policy:

chsyscfg -r sys -m 9406-570*89320051 -i "new_name=sys1, power_off_policy=1"

Change partitions using the configuration data in the file **/tmp/lparfile**:

chsyscfg -r lpar -m sys1 -f /tmp/lparfile

Change the attributes of a shutdown partition by applying the profile **prof1**:

chsyscfg -r lpar -m system1 -o apply -p p1 -n prof1

Change a partition profile's memory amounts (reduce the profile's current memory amounts each by 256 MB), and number of desired processors:

chsyscfg -r prof -m sys1 -i "name=profile1, lpar_name=partition3,min_mem-=256,desired_mem-=256, max_mem-=256,desired_procs=2"

Add 2 virtual fibre channel adapters with user-specified WWPNs to a partition profile:

chsyscfg -r prof -m mySys -i "name=p1,lpar_name=lpar3, \"virtual_fc_adapters+=\"\"5/client//vios1/15/c0508301e9ac0008, c0508301e9ac0009/1\"\",\"\"6/client//vios2/6/c0508301e9ac00a0, c0508301e9ac00a1/1\"\"\""

Add a virtual NIC to a partition profile:

chsyscfg -r prof -m P9-1 -i "name=prof1,lpar_id=1,\"vnic_adapters+= \"\"slot_num=11:backing_devices=sriov//1/3/2/10/1/30, sriov//2/2/1/10/2/30\"\"\""

Change a system profile (add 2 new partition profiles):

chsyscfg -r sysprof -m sys1 -i "name=sysprof1, \"lpar_names+=partition3,partition4\",\"profile_names+=3_prof1, 4_defaultProf\""

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

lssyscfg, **mksyscfg**, **rmsyscfg**, **chhwres**

NAME
        chsysconn - change system connection

SYNOPSIS
        To configure the Virtualization Management Interface (VMI) network settings:
               chsysconn -r vmi -m *managed-system* **-o set -i** {**eth0** | **eth1**}
                        -t {**ipv4dhcp** | **ipv6dhcp** | **slaac** | **static**}
                        [**-a** *IP-address*] [**--nm** *network-mask*] [**-g** *gateway*]
                        [**--force**] [**--help**]

        To clear the VMI network settings:
               chsysconn -r vmi -m *managed-system* **-o clear -i** {**eth0** | **eth1**}
                        [**-a** *IP-address*] [**--force**] [**--help**]

DESCRIPTION
        chsysconn changes the network settings for the Virtualization Management Interface (VMI) for an Enter-
        prise Baseboard Management Controller (BMC) based managed system.

OPTIONS
        -r   The type of resource to change. The only valid value is **vmi** for VMI network settings.

        -m   The name of the Enterprise BMC-based managed system for which to change the VMI network
                settings. The name may either be the user-defined name for the managed system, or be in the form
                tttt-*mmm**sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial num-
                ber of the managed system. The *tttt*-*mmm**sssssss form must be used if there are multiple man-
                aged systems with the same user-defined name.

        -o   The operation to perform. Valid values are **set** to configure the VMI network settings, and **clear** to
                clear the VMI network settings.

        -i   The name of the VMI network interface to set or clear. Valid values are **eth0** and **eth1**.

        -t   The type of network protocol to use. Valid values are **ipv4dhcp** for IPv4 Dynamic Host Configu-
                ration Protocol (DHCP), **ipv6dhcp** for IPv6 DHCP, **slaac** for IPv6 stateless address auto-configu-
                ration (SLAAC), and **static** for a static IP address.

        -a   The network IPv4 or IPv6 address. When setting an IPv6 address, it must be specified in the fol-
                lowing format: *IPv6-address*/*prefix-length*.

                This option is required when setting a static IP address. This option is not valid when using
                DHCP or SLAAC.

        --nm   The IPv4 network mask. This option is required when setting a static IPv4 address, otherwise this
                option is not valid.

        -g   The gateway IPv4 or IPv6 address. This option is required when setting a static IP address, other-
                wise this option is not valid.

        --force Specify this option to change or clear the network settings for the VMI network interface currently
                being used for communication between the Hardware Management Console (HMC) and the man-
                aged system. This will cause the managed system to go into No Connection state and cause any
                HMC operations to the managed system currently in progress to fail.

        --help   Display the help text for this command and exit.

EXAMPLES
        Configure the VMI eth0 interface to use IPv4 DHCP:

        chsysconn -m ebmcSys -r vmi -o set -i eth0 -t ipv4dhcp

        Configure the VMI eth1 interface to use IPv6 SLAAC:

chsysconn -m 9105-22A*1234567 -r vmi -o set -i eth1 -t slaac

Configure the VMI eth0 interface to use a static IPv4 address:

**chsysconn -m ebmcSys -r vmi -o set -i eth0 -t static -a 9.140.2.155
-g 9.140.2.1 --nm 255.255.255.0**

Configure the VMI eth0 interface to use a static IPv6 address:

**chsysconn -m ebmcSys -r vmi -o set -i eth0 -t static
-a 2002:903:15f:325:9:3:1:123/64 -g 2002:903:15f:325::1**

Clear the network settings for the VMI eth1 interface:

chsysconn -m ebmcSys -r vmi -o clear -i eth1

Clear the IPv6 address from the VMI eth0 interface:

**chsysconn -m ebmcSys -r vmi -o clear -i eth0
-a 2002:903:15f:325:9:3:1:123**

ENVIRONMENT
> None

BUGS
> None

AUTHOR
> IBM Austin

SEE ALSO
> **lssysconn**, **mksysconn**, **rmsysconn**

NAME
    chsyspwd - change system password

SYNOPSIS
    chsyspwd [**-t** {**access** | **admin** | **general**}] **-m** *managed-system*
     [**-u** *user-ID*] [**--passwd** *current-password*] [**--newpasswd** *new-password*]
     [**--help**]

DESCRIPTION
    chsyspwd changes a password for the *managed-system*.

    chsyspwd can also be used to enter the password for the *managed-system* when it is in Failed Authentication state.

OPTIONS
    -t   The type of password to change or enter. Valid values are **access** for the Hardware Management Console (HMC) Access password, **admin** for the Advanced System Management (ASM) Administrator password, and **general** for the ASM General password.

              This option is not allowed when entering the password for an Enterprise BMC-based managed system in Failed Authentication state. This option is required for all other operations.

    -m   The name of the managed system for which to change or enter the password. The name may either be the user-defined name for the managed system, or be in the form *tttt*-*mmm*****ssssss*, where *tttt* is the machine type, *mmm* is the model, and *ssssss* is the serial number of the managed system. The *tttt*-*mmm*****ssssss* form must be used if there are multiple managed systems with the same user-defined name.

    -u   The user ID for the Enterprise Baseboard Management Controller (BMC).

              This option is required when entering the password for an Enterprise BMC-based managed system in Failed Authentication state. This option is not valid for any other operation.

    --passwd
              The current password. If this option is required and it is omitted, you will be prompted to enter the current password.

    --newpasswd
              The new password. If this option is omitted, you will be prompted to enter the new password.

              Use this option, not the **--passwd** option, when entering the password for a managed system in Failed Authentication state. If you omit this option, you will be prompted for the password.

    --help   Display the help text for this command and exit.

EXAMPLES
    Change the HMC Access password for the managed system **system1**:

    chsyspwd -m system1 -t access --passwd sys1pw --newpasswd
     sys1newpw

    Change the ASM Administrator password (the current password, if required, and the new password must be entered when prompted) for the managed system **9406-520*10013CA**:

    chsyspwd -m 9406-520*10013CA -t admin

    Enter the current password for the managed system **system1**, which is in Failed Authentication state:

    chsyspwd -m system1 -t access --newpasswd sys1pw

Enter the current password for the Enterprise BMC-based managed system **ebmcSys**, which is in Failed Authentication state:

chsyspwd -m ebmcSys -u ebmcSysUser --newpasswd ebmcSyspw

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

NAME

chsysstate - change partition state or system state

SYNOPSIS

To power on a managed system:

chsysstate {**-m** *managed-systems* | **--all**} **-r sys**
    -o {**on** | **onstandby** | **onstartpolicy** | **onsysprof** |
        onhwdisc}
    [**-f** *system-profile-name*] [**-k** *keylock-position*]

To power on an OpenPower managed system:

chsysstate {**-m** *managed-systems* | **--all**} **-r sys -o on**

To power off a managed system:

chsysstate {**-m** *managed-systems* | **--all**} **-r sys -o off**
    [**--immed**] [**--force**]

To power off an OpenPower managed system:

chsysstate {**-m** *managed-systems* | **--all**} **-r sys -o off**

To restart a managed system (not valid for OpenPower managed systems):

chsysstate {**-m** *managed-systems* | **--all**} **-r sys**
    -o off --immed --restart

To rebuild a managed system (not valid for OpenPower managed systems):

chsysstate {**-m** *managed-systems* | **--all**} **-r sys -o rebuild**

To recover partition data for a managed system (not valid for OpenPower managed systems):

chsysstate -m *managed-system* **-r sys -o recover**

To initiate service processor failover for a managed system (not valid for OpenPower managed systems):

chsysstate -m *managed-system* **-r sys -o spfailover**

To set the keylock position for a managed system or a partition (not valid for OpenPower managed systems):

chsysstate -m *managed-system* **-r** {**sys** | **lpar**}
    -o chkey -k *keylock-position*
    [{**-n** *partition-name* | **--id** *partition-ID*}]

To activate a partition with a profile:

chsysstate -m *managed-system* **-r lpar -o on**
    {**-n** *partition-name* | **--id** *partition-ID*}
    -f *partition-profile-name*
    [**-k** *keylock-position*]
    [**-b** *boot-mode*] [**-i** *IPL-source*]
    [**--novsi**] [**--force**]

To activate a partition with its current configuration:

chsysstate -m *managed-system* **-r lpar -o on**
    {**-n** *partition-names* | **--id** *partition-IDs* | **--all**}
    [**-b** *boot-mode*]

To activate and perform a network install of an IBM i partition:

chsysstate -m *managed-system* **-r lpar -o on**
    {**-n** *partition-name* | **--id** *partition-ID*}

       [**-f** *partition-profile-name*] [**-k** *keylock-position*]
       [**-t** {**nfs** | **iscsi**}]
       --ip *IP-address* [**--netmask** *network-mask*]
       --gateway *gateway-IP-address*
       [**--serverip** *NFS-server-IP-address*]
       [**--serverdir** *NFS-server-directory*]
       [**--targetip** *iSCSI-target-IP-address*]
       [**--targetname** *iSCSI-target-name*]
       [**--targetport** *iSCSI-port*]
       [**--initiatorname** *iSCSI-initiator-name*]
       [**--chapname** *CHAP-name* [**--chapsecret** *CHAP-secret*]]
       [**--speed** {**auto** | **1** | **10** | **100** | **1000**}]
       [**--duplex** {**auto** | **half** | **full**}]
       [**--mtu** {**1500** | **9000**}]
       [**--vlan** *VLAN-ID*]

To shut down or restart a partition (it is recommended that the **chlparstate** command be used to shut down a suspended partition):
    chsysstate -m *managed-system* **-r lpar**
        -o {**shutdown** | **osshutdown** | **dumprestart** |
          retrydump}
        {**-n** *partition-name* | **--id** *partition-ID* | **--all** |
         --allnonvios}
        [**--immed**] [**--restart**] [**--force**]

To perform an operator panel service function on a partition:
    chsysstate -m *managed-system* **-r lpar**
        -o {**dston** | **remotedstoff** | **remotedston** |
          consoleservice | **iopreset** | **iopdump**}
        {**-n** *partition-name* | **--id** *partition-ID*}

To validate or activate a system profile:
    chsysstate -m *managed-system* **-r sysprof**
        -n *system-profile-name*
        [**-o on**] [**--continue**] [**--test**]

DESCRIPTION

    chsysstate changes the state of a partition or the *managed-system*.

    See the **chlparstate** command for additional partition state change operations.

USAGE IN A POWERVM MANAGEMENT CONTROLLER MODE ENVIRONMENT

    When the *managed-system* is in PowerVM management controller mode, the **-f** option is not allowed when activating a partition or performing a network install of an IBM i partition. For both of those operations partitions will be activated with their current configurations. The **chsyscfg -r lpar** and **chsyscfg -r prof** commands can be used to modify the current configuration of a partition before activating it.

    The Hardware Management Console (HMC) must be the current PowerVM management controller for the *managed-system* when running the **chsysstate -r lpar** command.

    The **chsysstate -r sysprof** and **chsysstate -r sys -o onsysprof** commands are not allowed.

OPTIONS

    -m   The name of the managed system on which to perform the operation. The name may either be the user-defined name for the managed system, or be in the form *tttt*-*mmm**sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The

tttt-mmm*sssssss form must be used if there are multiple managed systems with the same user-defined name.

When powering on managed systems (**-o on** or **-o onstandby**), powering off or restarting managed systems (**-o off**), or rebuilding managed systems (**-o rebuild**), multiple managed system names can be specified with this option, or the **--all** option can be specified to perform the operation on all managed systems. Multiple managed system names must be comma separated.

This option is required when performing a partition or a system profile operation. When performing a managed system operation, either this option or the **--all** option is required.

The **-m** and **--all** options are mutually exclusive for managed system operations.

-r The type of resource on which to perform the operation. Valid values are **lpar** for partition, **sys** for managed system, and **sysprof** for system profile.

-o The operation to perform. Valid values are:
  on - activates a partition or a system profile, or powers
    on the *managed-system*. When powering on the
    managed-system, partitions that are marked as auto
    start are activated unless the managed system is an
    OpenPower managed system.
  onstandby - powers on the *managed-system* to Standby state.
  onstartpolicy - powers on the *managed-system* as defined
    by the next partition start policy.
  onsysprof - powers on the *managed-system* then activates a
    system profile. Only those partitions in the system
    profile are activated.
  onhwdisc - powers on the *managed-system* and runs the
    hardware discovery process. When the hardware
    discovery process completes, the *managed-system*
    will be in Operating state, but no partitions will
    be automatically started.
  off - powers off the *managed-system*. If
    the **--immed** option is specified, a fast
    power off (operator panel function 8) is
    performed, otherwise a normal power off is
    performed. If both the **--immed** and the
    --restart options are specified, a
    restart (operator panel function 3) of the
    managed-system is performed.
  rebuild - rebuilds the *managed-system*.
  recover - recovers partition data for the
    managed-system by restoring the data
    from the backup file on the HMC.
  spfailover - initiates service processor
    failover for the *managed-system*.
  chkey - sets the keylock position for a
    partition or the *managed-system*.
  shutdown - shuts down a partition. If the
    --immed option but not the **--restart**
    option is specified, an immediate shutdown
    (operator panel function 8) is performed.
    If the **--restart** option but not the
    --immed option is specified, a **dumprestart**
    operation (operator panel function 22)

is performed. If both the **--immed** and
the **--restart** options are specified,
an immediate restart (operator panel
function 3) of the partition is performed.
If neither the **--immed** nor the **--restart**
option is specified, a delayed shutdown
is performed.

It is recommended that the **chlparstate** command
be used to shut down a suspended partition.

osshutdown - issues the operating system
shutdown command to shut down a partition.
If the **--immed** option is specified, the
immediate option is included on the operating
system shutdown command to immediately shut down
the partition. If the **--restart** option
is specified, the restart option is included
on the operating system shutdown command
to restart the partition. Normal operating system
shutdown IBM i, with or without the **--restart**
option, will take longer to complete.

dumprestart - initiates a dump on the partition
and restarts the partition when the dump
is complete (operator panel function 22).

retrydump - retries the dump on the partition
and restarts the partition when the dump
is complete (operator panel function 34).
This operation is valid for IBM i
partitions only.

dston - activates dedicated service tools for
the partition (operator panel function
21). This operation is valid for IBM i
partitions only.

remotedstoff - disables a remote service session
for the partition (operator panel function
65). This operation is valid for IBM i
partitions only.

remotedston - enables a remote service session
for the partition (operator panel function
66). This operation is valid for IBM i
partitions only.

consoleservice - enables console service
functions for the partition (operator
panel function 65 followed by 21). This
operation is valid for IBM i partitions
only.

iopreset - resets or reloads the failed IOP
(operator panel function 67). This
operation is valid for IBM i partitions
only.

iopdump - allows use of the IOP control storage
dump (operator panel function 70). This
operation is valid for IBM i partitions
only.

-f   When activating a partition with a profile, use this option to specify the name of the partition pro-
            file to use.

            If the *managed-system* is in the manufacturing default configuration and this option is not speci-
            fied, the partition will be activated with no configuration changes and the *managed-system* will
            remain in the manufacturing default configuration. If the *managed-system* is in the manufacturing
            default configuration and this option is specified, the partition will be activated with the configura-
            tion specified by *partition-profile-name* and the manufacturing default configuration will be per-
            manently exited.

            When powering on a managed system with a system profile, use this option to specify the name of
            the system profile to use. This option is required.

-k   The keylock position to set. Valid values are **manual** and **norm** for normal.

            This option is required when setting the keylock position for a partition or a managed system.
            This option is optional when powering on a managed system or activating a partition.

--immed
            If this option is specified when powering off a managed system, a fast power off is performed.

            This option must be specified when restarting a managed system.

            If this option is specified when shutting down or restarting a partition, an immediate shutdown or
            restart is performed.

--restart
            If this option is specified, the partition or managed system will be restarted.

-n   When performing a system profile operation, use this option to specify the name of the system
            profile on which to perform the operation.

            When performing a partition operation, use this option to specify the name of the partition on
            which to perform the operation, the **--id** option to specify the partition's ID, the **--all** option to per-
            form the operation on all partitions, or the **--allnonvios** option to perform the operation on all par-
            titions except Virtual I/O Server (VIOS) partitions. The **--all** option is only allowed when activat-
            ing partitions with their current configurations (**-o on**), or when shutting down or restarting parti-
            tions (**-o shutdown**). The **--allnonvios** option is only allowed when shutting down or restarting
            partitions (**-o shutdown**).

            When activating partitions with their current configurations, multiple partition names can be speci-
            fied with this option. The partition names must be comma separated.

            The **-n**, **--id**, **--all**, and **--allnonvios** options are mutually exclusive for partition operations.

--id   When performing a partition operation, use this option to specify the ID of the partition on which
            to perform the operation, the **-n** option to specify the partition's name, the **--all** option to perform
            the operation on all partitions, or the **--allnonvios** option to perform the operation on all partitions
            except VIOS partitions. The **--all** option is only allowed when activating partitions with their cur-
            rent configurations (**-o on**), or when shutting down or restarting partitions (**-o shutdown**). The
            --allnonvios option is only allowed when shutting down or restarting partitions (**-o shutdown**).

            When activating partitions with their current configurations, multiple partition IDs can be specified
            with this option. The partition IDs must be comma separated.

            The **--id**, **-n**, **--all**, and **--allnonvios** options are mutually exclusive for partition operations.

--all   When performing a managed system operation, specify this option to perform the operation on all
                   of the systems currently managed by this HMC. This option is only allowed for the following
                   managed system operations: power on (**-o on** or **-o onstandby**), power off or restart (**-o off**), or
                   rebuild (**-o rebuild**).

                   When performing a partition operation, specify this option to perform the operation on all of the
                   partitions in the *managed-system*. This option is only allowed for the following partition opera-
                   tions: activate with current configuration (**-o on**), or shut down or restart (**-o shutdown**).

--allnonvios
                   When performing a partition shutdown or restart operation (**-o shutdown**), specify this option to
                   perform the operation on all of the partitions in the *managed-system* except VIOS partitions.

-b   The boot mode to use when activating an AIX, Linux, or Virtual I/O Server partition. Valid values
                   are **norm** for normal, **dd** for diagnostic with default boot list, **ds** for diagnostic with stored boot
                   list, **of** for Open Firmware OK prompt, or **sms** for System Management Services.

-i   The IPL source to use when activating an IBM i partition. Valid values are **a**, **b**, **c**, or **d**.

-t   The type of network installation server to use to perform a network install for an IBM i partition.
                   Valid values are **nfs** for an NFS server or **iscsi** for an iSCSI server. If this option is not specified, it
                   defaults to **nfs**.

--ip   The IP address of the Ethernet adapter or SR-IOV logical port assigned as the alternate restart
                   device of the IBM i partition for which to perform the network install operation. When perform-
                   ing a network install using an NFS server, either an IPv4 or an IPv6 address can be specified. If an
                   IPv6 address is specified, it must be in the following format: *IPv6-address/prefix-length*. When
                   performing a network install using an iSCSI server, an IPv4 address must be specified.

--netmask
                   If the IP address specified with the **--ip** option is an IPv4 address, this option is required and is
                   used to specify the network mask. If the IP address specified with the **--ip** option is an IPv6
                   address, this option is not valid.

--gateway
                   The IP address of the gateway to use when performing a network install of an IBM i partition.
                   When performing a network install using an NFS server, either an IPv4 or an IPv6 address can be
                   specified. When performing a network install using an iSCSI server, an IPv4 address must be
                   specified.

--serverip
                   The IP address of the NFS server that contains the network install images for an IBM i partition.
                   Either an IPv4 or an IPv6 address can be specified.

                   This option is required when performing a network install of an IBM i partition using an NFS
                   server.

--serverdir
                   The directory on the NFS server that contains the network install images for an IBM i partition.

                   This option is required when performing a network install of an IBM i partition using an NFS
                   server.

--targetip
                   The IPv4 address of the iSCSI target that contains the network install images for an IBM i parti-
                   tion.

                   This option is required when performing a network install of an IBM i partition using an iSCSI
                   server.

--targetname

>The name of the iSCSI target that contains the network install images for an IBM i partition.

>This option is required when performing a network install of an IBM i partition using an iSCSI server.

--targetport

>The port to use for the iSCSI connection. If this option is not specified when performing a network install using an iSCSI server, it defaults to **3260**.

>This option is only valid when performing a network install of an IBM i partition using an iSCSI server.

--initiatorname

>The name of the iSCSI initiator associated with the iSCSI target that contains the network install images for an IBM i partition. If this option is not specified, it defaults to the value displayed by the **lssyscfg -r lpar -m** *managed-system* **-F os400_iscsi_initiator_name_default** command.

>This option is only valid when performing a network install of an IBM i partition using an iSCSI server.

--chapname

>The Challenge-Handshake Authentication Protocol (CHAP) name used by the IBM i iSCSI initiator to authenticate with the iSCSI target.

>This option is only valid when performing a network install of an IBM i partition using an iSCSI server.

--chapsecret

>The CHAP secret used by the IBM i iSCSI initiator to authenticate with the iSCSI target.

>This option is required when a CHAP name is specified. If a CHAP name is specified and this option is omitted, you will be prompted to enter the secret.

>This option is only valid when performing a network install of an IBM i partition using an iSCSI server and a CHAP name.

--speed The speed setting to use when performing a network install of an IBM i partition. Valid values are:

>>**auto** - automatically detect and set speed
>>**1**   - 1 Mbps
>>**10** - 10 Mbps
>>**100** - 100 Mbps
>>**1000** - 1000 Mbps

>If this option is not specified, it defaults to **auto**.

--duplex

>The duplex setting to use when performing a network install of an IBM i partition. Valid values are:

>>**auto** - automatically detect and set duplex
>>**half** - half duplex
>>**full** - full duplex

>If this option is not specified, it defaults to **auto**.

--mtu The maximum transmission unit, in bytes, to use when performing a network install of an IBM i partition. Valid values are **1500** or **9000** bytes. If this option is not specified, it defaults to **1500** bytes.

--vlan   The VLAN ID to use when performing a network install of an IBM i partition. Ethernet packets will be tagged with the specified VLAN ID. If this option is not specified, Ethernet packets will be untagged.

--novsi   When activating a partition that uses virtual ethernet adapter Virtual Station Interface (VSI) profiles, use this option to allow the partition to be activated without VSI profiles. Note that when this option is specified, the partition will still be activated with VSI profiles if possible.

--force   This option allows you to power off a managed system while a dump from the managed system is being offloaded to the HMC. It is recommended that you wait until the dump offload operaion is complete before powering off. If you choose to not wait the dump may be corrupted or incomplete and unable to be used for problem determination.

This option allows you to shut down a Virtual I/O Server (VIOS) partition which is the only VIOS partition providing access to the paging device or reserved storage device for one or more partitions.

This option also allows you to activate a shared memory partition under any of the following conditions:

- the partition is configured to use redundant paging VIOS partitions, but only one paging VIOS partition is currently available and that paging VIOS partition has access to an available paging space device in the shared memory pool,

- the partition is configured to use redundant paging VIOS partitions, but there is no available paging space device in the shared memory pool that can be accessed by both paging VIOS partitions. However, there is an available paging space device in the shared memory pool that can be accessed by one of the paging VIOS partitions,

- the partition is configured to use a single paging VIOS partition which is not currently available or does not have access to an available paging space device in the shared memory pool, but there is another paging VIOS partition in the shared memory pool that is available and that has access to an available paging space device in the shared memory pool.

--test   If this option is specified when performing a system profile operation, the system profile is validated.

--continue
If this option is specified when activating a system profile, remaining partitions will continue to be activated after a partition activation failure occurs.

--help   Display the help text for this command and exit.

EXIT STATUS
This command has the following return codes:

0   Success

100   Partial success

This value is returned when performing an operation on multiple managed systems or multiple partitions and at least one operation succeeded, and at least one failed.

Any other value means the command failed.

EXAMPLES
Power on a managed system and auto start partitions if not an OpenPower managed system:

chsysstate -m 9406-520*10110CA -r sys -o on

Power on a managed system with a system profile:

chsysstate -m sys1 -r sys -o onsysprof -f mySysProf

Power off a managed system normally:

chsysstate -m sys1 -r sys -o off

Power off a managed system fast:

chsysstate -m sys1 -r sys -o off --immed

Restart a managed system:

chsysstate -m 9406-570*12345678 -r sys -o off --immed
 --restart

Rebuild a managed system:

chsysstate -m 9406-570*12345678 -r sys -o rebuild

Recover partition data for a managed system:

chsysstate -m sys1 -r sys -o recover

Initiate service processor failover for a managed system:

chsysstate -m myServer -r sys -o spfailover

Set the keylock position for a managed system:

chsysstate -m sys1 -r sys -o chkey -k manual

Activate IBM i partition **p1** using partition profile **p1_prof1** and IPL source **b**:

chsysstate -m sys1 -r lpar -o on -n p1 -f p1_prof1 -i b

Activate partitions **p1**, **p2**, and **p3** with their current configurations:

chsysstate -m sys1 -r lpar -o on -n p1,p2,p3

Activate and perform a network install of the IBM i partition **iLpar** using an NFS server:

chsysstate -m mySys -r lpar -o on -n iLpar -f iProf --ip 9.1.2.33
 --netmask 255.255.255.0 --gateway 9.1.0.1 --serverip 9.5.12.34
 --serverdir /IBMi/611

Activate and perform a network install of the IBM i partition **iLpar** using an iSCSI server:

chsysstate -m mySys -r lpar -o on -n iLpar -t iscsi --ip 9.1.2.3
 --netmask 255.255.254.0 --gateway 9.1.0.1 --targetip 9.1.2.35
 --targetname iqn.2000-03.com.falconstor:vtl.dsitest.Target-40
 --initiatorname
 iqn.1924-02.com.ibm:ibmi.5749fde66af6445c846d02ebae0006ee-i0

Shut down the partition with ID **1**:

chsysstate -m 9406-570*12345678 -r lpar -o shutdown --id 1

Issue the operating system shutdown command to immediately shut down the partition **p1**:

chsysstate -m 9406-570*12345678 -r lpar -o osshutdown
 -n p1 --immed

Issue the operating system shutdown command to shut down then restart the partition **p1**:

chsysstate -m 9406-570*12345678 -r lpar -o osshutdown
 -n p1 --restart

Immediately restart the partition with ID **1**:

chsysstate -m 9406-570*12345678 -r lpar -o shutdown --id 1
 --immed --restart

Enable a remote service session for the IBM i partition **mylpar**:

chsysstate -m sys1 -r lpar -o remotedston -n mylpar

Validate system profile **sp1**:

chsysstate -m sys1 -r sysprof -n sp1 --test

Validate then activate system profile **sp1**:

chsysstate -m sys1 -r sysprof -n sp1 -o on --test

Activate system profile **mySysProf** and continue activating remaining partitions if a partition activation failure occurs:

chsysstate -m 9406-570*12345678 -r sysprof -n mySysProf
 -o on --continue

ENVIRONMENT
       None
BUGS
       None
AUTHOR
       IBM Austin
SEE ALSO
       chlparstate, **lssyscfg**

NAME

chtskey - change trusted system key

SYNOPSIS

chtskey -m *managed-system* **-o** {**change** | **restore**}
--newkey *file* [**--oldkey** *file*] [**--force**] [**--help**]

DESCRIPTION

chtskey changes the trusted system key for the *managed-system*. The trusted system key is used for virtual Trusted Platform Module (vTPM) data encryption.

If the trusted system key for a managed system is not set, the managed system automatically generates the default trusted system key when the first partition that uses vTPM is activated.

OPTIONS

-m The name of the managed system for which to set the trusted system key. The name may either be the user-defined name for the managed system, or be in the form *tttt*-*mmm**sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt*-*mmm**sssssss form must be used if there are multiple managed systems with the same user-defined name.

-o The operation to perform. Valid values are **change** to set the trusted system key and re-encrypt vTPM data, and **restore** to set the trusted system key without re-encrypting vTPM data.

   The restore operation is only allowed when all of the partitions that are using vTPM are shut down.

   Re-encryption of vTPM data may take a long time to complete.

--newkey
   The name of the binary file that contains the new key.

   If the file is on removable media, the media must be present in the removable media device and the device must be mounted with the **mount** command before this command is issued. The **lsmediadev** command can be used to display all of the removable media devices on the HMC.

--oldkey
   The name of the binary file that contains the current key. This option is not required the first time a user sets the trusted system key for the *managed-system*. After the first time, this option is required.

   If the file is on removable media, the media must be present in the removable media device and the device must be mounted with the **mount** command before this command is issued. The **lsmediadev** command can be used to display all of the removable media devices on the HMC.

--force Specify this option to force the trusted system key to be changed when vTPM data is still being re-encrypted due to a previous trusted system key change operation. vTPM data loss may occur.

--help Display the help text for this command and exit.

EXAMPLES

Set the trusted system key for the first time. The key file exists in the user's home directory on the HMC:

chtskey -m sys1 -o change --newkey keyfile

Set the trusted system key after it has been set at least once. The key files are on a USB flash memory device which is connected to the HMC:

lsmediadev (to obtain mount points)

mount /media/sdb1

chtskey -m 8233-E8B*1000ABC -o change --newkey /media/sdb1/newkeyfile
 --oldkey /media/sdb1/oldkeyfile

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
lstskey

NAME

chusrtca - displays welcome text at local console login or displays text when remotely login using SSH.

SYNOPSIS

chusrtca [**-o** { **a** | **r** | **ab** | **rb**}]
 [**-f** *welcome-file*] [**-b** *banner-file*]
 [**-c**] [**--help**]

DESCRIPTION

chusrtca provides a method to deploy text file(s) containing welcome or warning message and present to all users who login locally on the Hardware Management Console (HMC). The text file must be named **WelcomeFile.txt**. A banner file can also be specified, to have its contents displayed prior to login with SSH. The banner file must first be copied to the HMC, then it will be copied to a location accessible by SSH daemon. The banner file must be named **BannerFile.txt**.

OPTIONS

-o   Adds (**a**) or removes (**r**) the text file containing the welcome text. Add banner (**ab**) and remove banner (**rb**) can only be specified when deploying a banner file.

-f   The text file whose contents will be used as welcome, when login locally on the HMC, must be named **WelcomeFile.txt**.

-b   The text file whose contents will be used as banner, when remotely login using SSH, must be named **BannerFile.txt**.

-c   Removes the welcome or the banner file from the HMC filesystem. This option requires the **-f** or **-b** flags.

--help Displays the help text for this command and exit.

EXAMPLES

Adds welcome text. The file is on floppy:

mount /mnt/floppy

chusrtca -o a -f /mnt/floppy/WelcomeFile.txt

Use scp to copy the **WelcomeFile.txt** file to /tmp on the HMC, then adds welcome text then removes it:

scp someID@someHost:/tmp/WelcomeFile.txt /tmp

chusrtca -o a -f /tmp/WelcomeFile.txt -c

Removes welcome text from the HMC. The welcome text will no longer be displayed:

chusrtca -o r

Removes banner text from the HMC. The banner text will no longer be displayed:

chusrtca -o rb

Use scp to copy the banner file to /tmp on the HMC, then deploy it:

scp someID@someHost:/tmp/BannerFile.txt /tmp

chusrtca -o ab -b /tmp/BannerFile.txt -c

Removes banner text file from the HMC:

chusrtca -c -b /tmp/BannerFile.txt

ENVIRONMENT
>   None
BUGS
>   None
AUTHOR
>   IBM Austin

NAME

chvet - activate Capacity on Demand advanced functions

SYNOPSIS

chvet -o e -m *managed-system* **-k** *activation-code* [**--help**]

DESCRIPTION

chvet performs activation of Capacity on Demand (CoD) advanced functions on the *managed-system*. CoD advanced functions include PowerVM and Enterprise Enablement.

CoD advanced functions are sometimes referred to as Virtualization Engine systems technologies.

OPTIONS

-o   The operation to perform. The only valid value is **e** to enter an activation code.

-m   The name of the managed system on which to enter the activation code. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*ssssssss*, where *tttt* is the machine type, *mmm* is the model, and *ssssssss* is the serial number of the managed system. The *tttt-mmm*ssssssss* form must be used if there are multiple managed systems with the same user-defined name.

-k   The activation code (key) to enter. Letters may be entered in either upper case or lower case.

--help Display the help text for this command and exit.

EXAMPLES

Enter an activation code:

chvet -m mySystem -o e -k AlphaNumericString12345

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

lsvet, **lssyscfg**

NAME
      chviosbk - change VIOS backup file

SYNOPSIS
      chviosbk -t {**viosioconfig** | **vios** | **ssp**} **-m** *managed-system*
      {**-p** *VIOS-name* | **--id** *VIOS-ID* | **--uuid** *VIOS-UUID*}
      -f *file* **-o s -a "***attributes***"** [**--force**] [**--help**]

DESCRIPTION
      chviosbk changes attributes of a Virtual I/O Server (VIOS) backup file on the Hardware Management Console (HMC).

OPTIONS
      -t   The type of VIOS backup file to change. Valid values are **viosioconfig** for a VIOS I/O configuration backup file, **vios** for a full VIOS backup file, and **ssp** for a Shared Storage Pool configuration backup file.

      -m   The name of the managed system which has the VIOS for which to change the backup file. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

      -p   The name of the VIOS for which to change the backup file.

                       You can either use this option to specify the name of the VIOS, the **--id** option to specify the ID of the VIOS, or the **--uuid** option to specify the UUID of the VIOS. The **-p**, **--id**, and **--uuid** options are mutually exclusive.

      --id   The ID of the VIOS for which to change the backup file.

                       You can either use this option to specify the ID of the VIOS, the **-p** option to specify the name of the VIOS, or the **--uuid** option to specify the UUID of the VIOS. The **--id**, **-p**, and **--uuid** options are mutually exclusive.

      --uuid   The UUID of the VIOS for which to change the backup file.

                       You can either use this option to specify the UUID of the VIOS, the **-p** option to specify the name of the VIOS, or the **--id** option to specify the ID of the VIOS. The **--uuid**, **-p**, and **--id** options are mutually exclusive.

      -f   The name of the VIOS backup file to change.

      -o   The operation to perform. The only valid value is **s** to set VIOS backup file attributes.

      -a   The attributes to change.

                       The format of the attributes are as follows:

                       "*attribute-name=value***,***attribute-name=value***,...**"

                       Valid attribute names:
                             new_name

      --help   Display the help text for this command and exit.

EXAMPLES
      Change the name of the full VIOS backup file for **vios1**:

      chviosbk -t vios -m sys1 -p vios1 -f vios1_backup -o s
      -a "new_name=vios1_backup_2020"

ENVIRONMENT

   None

BUGS

   None

AUTHOR

   IBM Austin

SEE ALSO

   cpviosbk, **lsviosbk**, **mkviosbk**, **rmviosbk**, **rstviosbk**

NAME
>   chviosimg - change VIOS installation image

SYNOPSIS
>   **chviosimg -n** *image-name* **-o s -a "***attributes***"** [**--help**]

DESCRIPTION
>   **chviosimg** changes the name of a Virtual I/O Server (VIOS) installation image on the Hardware Manage-
>   ment Console (HMC).

OPTIONS
>   **-n**   The name of the VIOS installation image to change.
>
>   **-o**   The operation to perform. The only valid value is **s** to set the VIOS installation image name.
>
>   **-a**   The attributes to set with this command. The format is:
>
>   **"***attribute-name*=*value***"**
>
>   Valid attribute names:
>   **new_name**
>
>   **--help** Display the help text for this command and exit.

EXAMPLES
>   Change the name of VIOS installation image **vios3** to **vios3.1**:
>
>   **chviosimg -n vios3 -a "new_name=vios3.1"**

ENVIRONMENT
>   None

BUGS
>   None

AUTHOR
>   IBM Austin

SEE ALSO
>   **cpviosimg**, **installios**, **lsviosimg**, **rmviosimg**

NAME
> chviosupd - change VIOS update image

SYNOPSIS
> **chviosupd -n** *image-name* **-o s -a "***attributes***"** [**--help**]

DESCRIPTION
> **chviosupd** changes the name of a Virtual I/O Server (VIOS) update image on the Hardware Management Console (HMC).

OPTIONS
> **-n**   The name of the VIOS update image to change.
>
> **-o**   The operation to perform. The only valid value is **s** to set the VIOS update image name.
>
> **-a**   The attributes to set with this command. The format is:
>
> > **"***attribute-name*=*value***"**
>
> > Valid attribute names:
> > > **new_name**
>
> **--help** Display the help text for this command and exit.

EXAMPLES
> Change the name of VIOS update image **vios1_update** to **vios_update_3.1.2.10**:
>
> > **chviosupd -n vios1_update -a "new_name=vios_update_3.1.2.10"**

ENVIRONMENT
> None

BUGS
> None

AUTHOR
> IBM Austin

SEE ALSO
> **cpviosupd**, **lsviosupd**, **rmviosupd**, **updvios**

NAME

   cpdump - copy dumps

SYNOPSIS

   cpdump -r {**ftp** | **sftp** | **usb** | **remoterepo**}
   -f "*file1 file2 ...fileN*"
   [**-h** *host-name*] [**-u** *user-ID*] [**--passwd** *password*] [**-k** *SSH-private-key*]
   [**-d** *directory*] [**--help**]

DESCRIPTION

   cpdump copies managed system dumps from the Hardware Management Console (HMC) to a remote site
   or a USB data storage device.

   Use the **lsdump** command to list the managed system dumps that reside on the HMC.

OPTIONS

   -r   The storage location to where the dumps will be copied. Valid values are **ftp** for a remote FTP
               site, **sftp** for a remote secure FTP (SFTP) site, **usb** for a USB data storage device, and **remoterepo**
               for the remote call home repository.

               When copying dumps to a USB data storage device, the device must be inserted into a USB port
               on the HMC and the device must be mounted with the **mount** command before running this com-
               mand. The **lsmediadev** command can be used to display the mount points for the removable
               media devices on the HMC.

   -f   The file name of the dump to be copied. If multiple dumps are to be copied, the file names must
               be separated by blanks and enclosed in double quotes.

   -h   The host name or IP address of the remote FTP or SFTP site.

               This option is required when copying dumps to a remote FTP or SFTP site. Otherwise, this option
               is not valid.

   -u   The user ID to use to log in to the remote FTP or SFTP site.

               This option is required when copying dumps to a remote FTP or SFTP site. Otherwise, this option
               is not valid.

   --passwd
               The password to use to log in to the remote FTP or SFTP site.

               If this option is omitted and the dumps are being copied to a remote FTP site, you will be
               prompted to enter the password. If both this option and the **-k** option are omitted and the dumps
               are being copied to a remote SFTP site, you will be prompted to enter the password. The
               --passwd and **-k** options are mutually exclusive.

               This option is only valid when copying dumps to a remote FTP or SFTP site.

   -k   The name of the file that contains the SSH private key. If the file name is not fully qualified, the
               file must exist in the user's home directory on the HMC.

               Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen**
               command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so
               when you run the command on the HMC, you must specify both the directory and the file name
               for the private key. If you generate a key with a passphrase, you will be prompted to enter the
               passphrase when you run any HMC command that uses the key.

               If both this option and the **--passwd** option are omitted and the dumps are being copied to a
               remote SFTP site, you will be prompted to enter the password. The **-k** and **--passwd** options are

mutually exclusive.

This option is only valid when copying dumps to a remote SFTP site.

-d   When copying dumps to a remote FTP or SFTP site, specify the directory on the FTP or SFTP server to where the dumps will be copied. If this option is omitted, the dumps will be copied to the home directory of the user.

When copying dumps to a USB data storage device, specify the directory on the USB device to where the dumps will be copied.

This option is only valid when copying dumps to a remote FTP or SFTP site or a USB data storage device.

--help   Display the help text for this command and exit.

EXAMPLES

Copy a dump file to a remote FTP site:

cpdump -r ftp -f "FSPDUMP.100072A.01000019.20040629205455"
 -h ftpserver -u ftpuser --passwd ftppassword -d /tmp/dumpfiles/

Copy a dump file to a remote SFTP site and use SSH keys for authentication:

cpdump -r sftp -f "SYSDUMP.10860AC.3A000003.20190619143200"
 -h 9.3.123.25 -u sftpuser -k /home/hmcuser/keys/id_rsa
 -d /home/sftpuser/images

Copy dump files to a USB flash drive:

lsmediadev (to obtain mount points)

mount /media/sdb1

cpdump -r usb -f "FSPDUMP.100072A.01000019.20040629205455
 SYSDUMP.100072A.01000019.20040630183112" -d /media/sdb1

Call home a dump:

cpdump -r remoterepo -f "FSPDUMP.13295AX.6A000002.20190528200553"

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

lsdump, **lsmediadev**, **rmdump**

NAME
> cpfile - copy file

SYNOPSIS
> **cpfile -t** {**fcs** | **modelmap** | **vpp**} **-l** {**l** | **r**} **-f** *file-name*
> **-o** {**import** | **export**}
> [**-h** *host-name* **-u** *user-ID* [**--passwd** *password*] [**-k** *SSH-private-key*]]
> [**-r**] [**--help**]

DESCRIPTION
> **cpfile** copies a file to or from the Hardware Management Console (HMC) and the local HMC file system, removable media, or a remote system using secure File Transfer Protocol (SFTP).
>
> This command allows a user to copy a file to or from a directory on the HMC to which the user does not have write access. The type of file specified determines the directory.

OPTIONS
> **-t**   The type of file to copy.
>
>   Specify **fcs** to copy the certificate used for HMC to HMC communication. An HMC restart is required to apply an imported certificate on this HMC. After this HMC is restarted, communication from this HMC to other HMCs cannot be reestablished until this certificate has been applied to the other HMCs.
>
>   Specify **modelmap** to copy an XML file which indicates the HMC is managing an IBM Smart Analytics Solution. This file describes an appliance model ID and its associated server model ID and is used during a call-home event to associate the failing server model to the appliance model.
>
>   Specify **vpp** to copy a zip file of Virtualization Protection Profile (VPP) audit log files. When importing a VPP audit log zip file, the file is unzipped into the user's home directory on the HMC.
>
> **-l**   The location of the file. For an import operation, this is the source location of the file. For an export operation, this is the destination location of the file. Valid values are **l** for the local HMC file system or removable media, or **r** for a remote SFTP server.
>
>   When copying a file to or from removable media, the media must be present in the removable media device and the device must be mounted with the **mount** command before this command is issued. The **lsmediadev** command can be used to display all of the removable media devices on the HMC.
>
> **-f**   The fully qualified name of the file to copy. If the file already exists in the destination location, it will be overwritten.
>
>   When **-t fcs** is specified, the file name must end with the **.jks** suffix.
>
>   When **-t modelmap** is specified, the file name must end with the **.xml** suffix.
>
>   When **-t vpp** is specified, the file name must end with the **.zip** suffix.
>
> **-o**   The direction of the copy. Valid values are **import** to copy the file from the specified location to the destination location on the HMC, or **export** to copy the file from the source location on the HMC to the specified location.
>
> **-h**   The host name or IP address of the SFTP server.
>
>   This option is required when copying a file to or from an SFTP server. Otherwise, this option is not valid.

-u   The user ID to use to log in to the SFTP server.

              This option is required when copying a file to or from an SFTP server. Otherwise, this option is not valid.

--passwd
              The password to use to log in to the SFTP server.

              If both this option and the **-k** option are omitted when copying a file to or from an SFTP server, you will be prompted to enter the password. The **--passwd** and **-k** options are mutually exclusive.

              This option is only valid when copying a file to or from an SFTP server.

-k   The name of the file that contains the SSH private key. If the file name is not fully qualified, the file must exist in the user's home directory on the HMC.

              Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen** command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so when you run the command on the HMC, you must specify both the directory and the file name for the private key. If you generate a key with a passphrase, you will be prompted to enter the passphrase when you run any HMC command that uses the key.

              If both this option and the **--passwd** option are omitted when copying a file to or from an SFTP server, you will be prompted to enter the password. The **-k** and **--passwd** options are mutually exclusive.

              This option is only valid when copying a file to or from an SFTP server.

-r   When importing the certificate used for HMC to HMC communication, specify this option to cause the HMC to automatically be restarted without asking for confirmation.

--help   Display the help text for this command and exit.

EXAMPLES

Copy the model mapping file called **hmcModelMap.xml** on a USB flash memory device (the USB flash memory device must already be connected to the HMC) to the HMC:

lsmediadev (to obtain mount points)

mount /media/sdb1

cpfile -t modelmap -l l -o import -f /media/sdb1/hmcModelMap.xml

Use **scp** to copy the model mapping file called **myfile.xml** to the user's home directory on the HMC. Then use **cpfile** to copy the file into the model mapping file directory on the HMC:

scp remoteuser@remotehostname:/directory/myfile.xml /home/user

cpfile -t modelmap -l l -o import -f /home/user/myfile.xml

Copy the model mapping file on the HMC to the file **/home/maps/map.xml** on a remote SFTP server (you will be prompted to enter your password):

**cpfile -t modelmap -l r -o export -f /home/maps/map.xml
-h sftpserver -u sftpuser**

Copy the certificate used for HMC to HMC communication to a remote SFTP server:

cpfile -t fcs -l r -o export -f /home/fcs/hmcChatlet2.jks -h sftpserver
 -u sftpuser --passwd sftppassword

Copy the certificate used for HMC to HMC communication from a remote SFTP server and restart the HMC to apply this certificate:

cpfile -t fcs -l r -o import -f /home/fcs/hmcChatlet2.jks -h sftpserver
 -u sftpuser --passwd sftppassword -r

Copy the VPP audit logs on the HMC into a zip file on a remote SFTP server using SSH keys for authentication::

cpfile -t vpp -l r -o export -f /home/vpp/auditLogs.zip -h sftpserver
 -u sftpuser -k /home/hmcuser/keys/id_rsa

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
chhmccert, **lsmediadev**

NAME
     cpsysplan - copy system plan

SYNOPSIS
     cpsysplan -r {**ftp** | **sftp** | **nfs** | **media** | **homedir**} **-f** *file-name*
      -o {**import** | **export**}
      [**-h** *host-name*] [**-u** *user-ID*] [**--passwd** *password*] [**-k** *SSH-private-key*]
      [**-p** *ftp-port-number*] [**-d** *directory*] [**-l** *mount-location*]
      [**--options** *mount-command-options*] [**--check**] [**--help**]

DESCRIPTION
     cpsysplan copies a system plan file between the system plan file directory on the Hardware Management
     Console (HMC) and a remote server, removable media, or the user's home directory on the HMC.

OPTIONS
     -r   The location where the system plan file will be copied to or from. Valid values are **ftp** for an FTP
                server, **sftp** for a secure FTP (SFTP) server, **nfs** for an NFS file system, **media** for removable
                media, and **homedir** for the user's home directory on the HMC.

                If **media** is specified, the media must be present in the removable media device and the device
                must be mounted with the **mount** command before this command is run. The **lsmediadev** com-
                mand can be used to display all of the removable media devices on the HMC.

     -f   Specifies the name of the system plan file that is to be copied. The file name is restricted to the
                alphanumerics (upper and lower) as well as a set of special characters (comma, period, hyphen,
                underscore, and space). The file name cannot begin with a period or hyphen and must end with
                the **.sysplan** suffix.

                cpsysplan performs a raw file copy. It does not parse or validate the system plan file content.

                When copying from the HMC, the file will be searched for in the system plan file directory on the
                HMC. When copying to the HMC, the file will be written to this directory. If the file already
                exists, it will be overwritten unless the **--check** option is specified.

     -o   Specifies if the system plan file is to be copied to or from the system plan file directory on the
                HMC. Valid values are **export** to copy the file from the HMC to the resource location specified or
                import to copy the file from the resource location specified to the system plan file directory on the
                HMC.

     -h   The host name or IP address of the remote server.

                This option is required when copying a system plan file to or from a remote server. Otherwise, this
                option is not valid.

     -u   The user ID to use to log in to the remote FTP or SFTP server.

                This option is required when copying a system plan file to or from a remote FTP or SFTP server.
                Otherwise, this option is not valid.

     --passwd
                The password to use to log in to the remote FTP or SFTP server.

                If this option is omitted and the system plan file is being copied to or from a remote FTP server,
                you will be prompted to enter the password. If both this option and the **-k** option are omitted and
                the system plan file is being copied to or from a remote SFTP server, you will be prompted to
                enter the password. The **--passwd** and **-k** options are mutually exclusive.

                This option is only valid when copying a system plan file to or from a remote FTP or SFTP server.

-k   The name of the file that contains the SSH private key. If the file name is not fully qualified, the file must exist in the user's home directory on the HMC.

Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen** command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so when you run the command on the HMC, you must specify both the directory and the file name for the private key. If you generate a key with a passphrase, you will be prompted to enter the passphrase when you run any HMC command that uses the key.

If both this option and the **--passwd** option are omitted and the system plan file is being copied to or from a remote SFTP server, you will be prompted to enter the password. The **-k** and **--passwd** options are mutually exclusive.

This option is only valid when copying a system plan file to or from a remote SFTP server.

-l   The mount location defined on the NFS server where the system plan file will be copied to or from.

This option is required when copying a system plan file to or from an NFS file system. Otherwise, this option is not valid.

--options

Options to be passed to the **mount** command used to mount the NFS file system where the system plan file will be copied to or from. The options must be enclosed in double quotes.

The HMC supports NFS versions 3 and 4, and this command uses version 3 by default. To use version 4, include the option **vers=4**.

This option is only valid when copying a system plan file to or from an NFS file system.

-p   The port number to use for the remote FTP server. If this option is omitted, the default FTP port 21 will be used.

This option is only valid when copying a system plan file to or from a remote FTP server.

-d   When copying a system plan file to or from a remote server, specify the name of the directory on the remote server to use. If this option is not specified when copying a system plan file to or from a remote FTP or SFTP server, the directory will default to the user's home directory. If this option is not specified when copying a system plan file to or from an NFS file system, the directory will default to the *mount-location* on the NFS server.

When copying a system plan file to or from media, this option is required. The directory is the name of the mounted removable media where the system plan file will be copied to or from.

--check

When importing a system plan file, specify this option to check the system plan directory and fail with an error if a file with the name specified with the **-f** option already exists.

This option is only valid when importing a system plan file.

--help   Display the help text for this command and exit.

EXAMPLES

Copy the system plan file **sysplan.sysplan** to a remote FTP server:

cpsysplan -r ftp -f sysplan.sysplan -o export -h ftpserver -u ftpuser
 --passwd ftppassword

Copy the system plan file **sysplan.sysplan** to a remote SFTP server using SSH keys for authentication:

       **cpsysplan -r sftp -f sysplan.sysplan -o export -h 9.3.145.52
 -d /home/user/plans -k /home/hmcuser/keys/id_rsa**

Copy the system plan file **sysplan.sysplan** from a remote SFTP server (you will be prompted to enter your password):

       **cpsysplan -r sftp -f sysplan.sysplan -o import -h sftpserver
 -u sftpuser**

Copy the system plan file **sys1.sysplan** from an NFS file system using NFS version 4:

       **cpsysplan -r nfs -f sys1.sysplan -o import -h 9.1.2.3 -l /plans
 -d /sys1 --options "vers=4"**

Copy the system plan file **sysplan.sysplan** from a USB flash memory device (the USB flash memory device must already be connected to the HMC). Don't overwrite **sysplan.sysplan** if the file already exists in the system plan directory:

       lsmediadev (to obtain mount point/device name)

       mount /media/sda1

       cpsysplan -r media -f sysplan.sysplan -o import -d /media/sda1 --check

ENVIRONMENT
       None

BUGS
       None

AUTHOR
       IBM Austin

SEE ALSO
       deploysysplan, **lssysplan**, **mksysplan**, **rmsysplan**, **lsmediadev**

NAME
     cpviosbk - copy VIOS backup files

SYNOPSIS
     cpviosbk -t {**viosioconfig** | **vios** | **ssp**} **-m** *managed-system*
     {**-p** *VIOS-name* | **--id** *VIOS-ID* | **--uuid** *VIOS-UUID*}
     -o {**import** | **export**} **-f** *file* **-r** {**nfs** | **sftp**}
     -h *host-name* [**-u** *user-ID*] [**--passwd** *password*] [**-k** *SSH-private-key*]
     [**-l** *mount-location*] [**--options "***mount-command-options***"**]
     [**-d** *directory*] [**--help**]

DESCRIPTION
     cpviosbk copies Virtual I/O Server (VIOS) backup files to or from the Hardware Management Console
     (HMC).

OPTIONS
     -t   The type of VIOS backup files to copy. Valid values are **viosioconfig** for VIOS I/O configuration
               backup files, **vios** for full VIOS backup files, and **ssp** for Shared Storage Pool configuration
               backup files.

     -m   The name of the managed system which has the VIOS for which to copy the backup files. The
               name may either be the user-defined name for the managed system, or be in the form *tttt-*
               mmm*sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number
               of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed
               systems with the same user-defined name.

     -p   The name of the VIOS for which to copy the backup files.

               You can either use this option to specify the name of the VIOS, the **--id** option to specify the ID of
               the VIOS, or the **--uuid** option to specify the UUID of the VIOS. The **-p**, **--id**, and **--uuid** options
               are mutually exclusive.

     --id   The ID of the VIOS for which to copy the backup files.

               You can either use this option to specify the ID of the VIOS, the **-p** option to specify the name of
               the VIOS, or the **--uuid** option to specify the UUID of the VIOS. The **--id**, **-p**, and **--uuid** options
               are mutually exclusive.

     --uuid   The UUID of the VIOS for which to copy the backup files.

               You can either use this option to specify the UUID of the VIOS, the **-p** option to specify the name
               of the VIOS, or the **--id** option to specify the ID of the VIOS. The **--uuid**, **-p**, and **--id** options are
               mutually exclusive.

     -o   The operation to perform. Valid values are **import** to copy the VIOS backup files from a remote
               location to the HMC, and **export** to copy the VIOS backup files from the HMC to a remote loca-
               tion.

     -f   The name of one or more VIOS backup files to copy. Multiple file names must be comma sepa-
               rated.

     -r   The remote location where the VIOS backup files will be copied to or from. Valid values are **nfs**
               to copy the VIOS backup files to or from an NFS file system, and **sftp** to copy the VIOS backup
               files to or from a secure FTP (SFTP) server.

     -h   The host name or IP address of the remote server.

     -u   The user ID to use to log in to the remote SFTP server.

               This option is required when copying VIOS backup files to or from a remote SFTP server. Other-
               wise, this option is not valid.

--passwd

> The password to use to log in to the remote SFTP server.
>
> If both this option and the **-k** option are omitted when copying VIOS backup files to or from a remote SFTP server, you will be prompted to enter the password. The **--passwd** and **-k** options are mutually exclusive.

-k   The name of the file that contains the SSH private key. If the file name is not fully qualified, the file must exist in the user's home directory on the HMC.

> Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen** command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so when you run the command on the HMC, you must specify both the directory and the file name for the private key. If you generate a key with a passphrase, you will be prompted to enter the passphrase when you run any HMC command that uses the key.
>
> If both this option and the **--passwd** option are omitted when copying VIOS backup files to or from a remote SFTP server, you will be prompted to enter the password. The **-k** and **--passwd** options are mutually exclusive.

-l   The mount location defined on the NFS server where the VIOS backup files will be copied to or from.

> This option is required when copying VIOS backup files to or from an NFS file system. Otherwise, this option is not valid.

--options

> Options to be passed to the **mount** command used to mount the NFS file system where the VIOS backup files will be copied to or from. The options must be enclosed in double quotes.
>
> The HMC supports NFS versions 3 and 4, and this command uses version 3 by default. To use version 4, include the option **vers=4**.
>
> This option is only valid when copying VIOS backup files to or from an NFS file system.

-d   The name of the directory on the remote server where the VIOS backup files will be copied to or from. If this option is not specified when copying the VIOS backup files to or from a SFTP server, the files will be copied to or from the user's home directory. If this option is not specified when copying the VIOS backup files to or from an NFS file system, the files will be copied to or from the *mount-location* on the NFS server.

--help   Display the help text for this command and exit.

EXAMPLES

> Copy a VIOS SSP configuration backup file for **vios1** to a remote SFTP server using SSH keys for authentication:
>
> **cpviosbk -t ssp -m sys1 -p vios1 -o export -f vios1_ssp_backup -r sftp**
> **-h sftpserver -u sftpuser -k /home/hmcuser/keys/id_rsa**
>
> Copy full VIOS backup files from an NFS file system using NFS version 4 to the HMC:
>
> **cpviosbk -t vios -m sys1 --uuid 2B809AD7-2019-442F-98F2-1C4D4ACB06E7**
> **-o import -f vios1_backup_march,vios1_backup_april**
> **-r nfs -h 9.3.145.52 -l /hmcdata --options "vers=4" -d /backups/vios**

ENVIRONMENT

> None

BUGS
      None

AUTHOR
      IBM Austin

SEE ALSO
      chviosbk, **lsviosbk**, **mkviosbk**, **rmviosbk**, **rstviosbk**

NAME
      cpviosimg - copy VIOS installation image

SYNOPSIS
      cpviosimg -r {**nfs** | **sftp** | **usb**} **-n** *image-name* [**-f** *files*]
      [**-h** *host-name*] [**-u** *user-ID*] [**--passwd** *password*] [**-k** *SSH-private-key*]
      [**-d** *directory*] [**-l** *mount-location*] [**--options "***mount-command-options***"**]
      [**--device** *device-name*] [**--help**]

DESCRIPTION
      cpviosimg imports a Virtual I/O Server (VIOS) installation image to the Hardware Management Console (HMC).

OPTIONS
      -r   The remote location or media where the VIOS installation image will be imported from. Valid values are **nfs** to import the image from an NFS file system, **sftp** to import the image from a secure FTP (SFTP) server, and **usb** to import the image from a USB data storage device.

      -n   The name to give the VIOS installation image on the HMC.

      -f   When importing a VIOS installation image from a remote server, use this option to specify the name of one or two VIOS installation image ISO files to import. Multiple file names must be comma separated. When importing DVD ISO images, you must specify the first DVD ISO file name first, followed by the second DVD ISO file name.

            This option is required when importing a VIOS installation image from a remote server. This option is not valid when importing a VIOS installation image from a USB data storage device.

      -h   The host name or IP address of the remote server.

      -u   The user ID to use to log in to the remote SFTP server.

            This option is required when importing a VIOS installation image from a remote SFTP server. Otherwise, this option is not valid.

      --passwd
            The password to use to log in to the remote SFTP server.

            If both this option and the **-k** option are omitted when importing a VIOS installation image from a remote SFTP server, you will be prompted to enter the password. The **--passwd** and **-k** options are mutually exclusive.

      -k   The name of the file that contains the SSH private key. If the file name is not fully qualified, the file must exist in the user's home directory on the HMC.

            Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen** command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so when you run the command on the HMC, you must specify both the directory and the file name for the private key. If you generate a key with a passphrase, you will be prompted to enter the passphrase when you run any HMC command that uses the key.

            If both this option and the **--passwd** option are omitted when importing a VIOS installation image from a remote SFTP server, you will be prompted to enter the password. The **-k** and **--passwd** options are mutually exclusive.

      -l   The mount location defined on the NFS server where the VIOS installation image will be imported from.

            This option is required when importing a VIOS installation image from an NFS file system. Otherwise, this option is not valid.

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--options

Options to be passed to the **mount** command used to mount the NFS file system where the VIOS installation image will be imported from. The options must be enclosed in double quotes.

The HMC supports NFS versions 3 and 4, and this command uses version 3 by default. To use version 4, include the option **vers=4**.

This option is only valid when importing a VIOS installation image from an NFS file system.

-d   The name of the directory on the remote server where the VIOS installation image will be imported from. If this option is not specified when importing the VIOS installation image from a SFTP server, the image will be imported from the user's home directory. If this option is not specified when importing the VIOS installation image from an NFS file system, the image will be imported from the *mount-location* on the NFS server.

--device

When importing a VIOS installation image from a USB data storage device, use this option to specify the name of the USB device on the HMC. The USB device must be connected to the HMC and must be mounted with the **mount** command before this command is run. The **lsmediadev** command can be used to display the device name of the USB device once it has been connected to the HMC.

--help   Display the help text for this command and exit.

EXAMPLES

Import a standard VIOS installation image from a remote SFTP server using SSH keys for authentication:

cpviosimg -r sftp -n vios3.1 -h sftpserver -u sftpuser
-k /home/hmcuser/keys/id_rsa
-f Virtual_IO_Server_Base_Install_3.1.0.0_DVD_1_of_2_112018.iso,
Virtual_IO_Server_Base_Install_3.1.0.0_DVD_2_of_2_112018.iso

Import a flash VIOS installation image from an NFS file system using NFS version 4:

cpviosimg -r nfs -n vios3.1flash -h 9.3.145.52 -l /images
-d /vios -f Virtual_IO_Server_Base_Install_3.1.0.10_Flash_112018.iso
--options "vers=4"

Import a VIOS installation image from a USB data storage device (the USB data storage device must already be connected to the HMC):

lsmediadev (to obtain mount point/device name)

mount /dev/sdb1

cpviosimg -r usb -n vios3.1 --device /dev/sdb1

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chviosimg, **installios**, **lsmediadev**, **lsviosimg**, **rmviosimg**

NAME
      cpviosupd - copy VIOS update image

SYNOPSIS
      cpviosupd -r {**nfs** | **sftp** | **usb**} **-n** *image-name* [**-f** *files*]
      [**-h** *host-name*] [**-u** *user-ID*] [**--passwd** *password*] [**-k** *SSH-private-key*]
      [**-d** *directory*] [**-l** *mount-location*] [**--options "***mount-command-options***"**]
      [**--device** *device-name*] [**--help**]

DESCRIPTION
      cpviosupd imports a Virtual I/O Server (VIOS) update image to the Hardware Management Console (HMC).

OPTIONS
      -r   The remote location or media where the VIOS update image will be imported from. Valid values are **nfs** to import the image from an NFS file system, **sftp** to import the image from a secure FTP (SFTP) server, and **usb** to import the image from a USB data storage device.

      -n   The name to give the VIOS update image on the HMC.

      -f   When importing a VIOS update image from a remote server, use this option to specify the names of the files to import if all of the files in the import directory are not part of the same update image. Multiple file names must be comma separated. If this option is omitted, all files in the import directory will be imported.

              If the import directory contains more than one ISO file, this option must be specified with the name of one ISO file to import.

              This option is only valid when importing a VIOS update image from a remote server.

      -h   The host name or IP address of the remote server.

      -u   The user ID to use to log in to the remote SFTP server.

              This option is required when importing a VIOS update image from a remote SFTP server. Otherwise, this option is not valid.

      --passwd
              The password to use to log in to the remote SFTP server.

              If both this option and the **-k** option are omitted when importing a VIOS update image from a remote SFTP server, you will be prompted to enter the password. The **--passwd** and **-k** options are mutually exclusive.

      -k   The name of the file that contains the SSH private key. If the file name is not fully qualified, the file must exist in the user's home directory on the HMC.

              Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen** command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so when you run the command on the HMC, you must specify both the directory and the file name for the private key. If you generate a key with a passphrase, you will be prompted to enter the passphrase when you run any HMC command that uses the key.

              If both this option and the **--passwd** option are omitted when importing a VIOS update image from a remote SFTP server, you will be prompted to enter the password. The **-k** and **--passwd** options are mutually exclusive.

      -l   The mount location defined on the NFS server where the VIOS update image will be imported from.

This option is required when importing a VIOS update image from an NFS file system. Otherwise, this option is not valid.

--options

Options to be passed to the **mount** command used to mount the NFS file system where the VIOS update image will be imported from. The options must be enclosed in double quotes.

The HMC supports NFS versions 3 and 4, and this command uses version 3 by default. To use version 4, include the option **vers=4**.

This option is only valid when importing a VIOS update image from an NFS file system.

-d   The name of the directory on the remote server where the VIOS update image will be imported from. If this option is not specified when importing the VIOS update image from a SFTP server, the image will be imported from the user's home directory. If this option is not specified when importing the VIOS update image from an NFS file system, the image will be imported from the *mount-location* on the NFS server.

--device

When importing a VIOS update image from a USB data storage device, use this option to specify the name of the USB device on the HMC. The USB device must be connected to the HMC and must be mounted with the **mount** command before this command is run. The **lsmediadev** command can be used to display the device name of the USB device once it has been connected to the HMC.

--help   Display the help text for this command and exit.

EXAMPLES

Import a VIOS update image from a remote SFTP server using SSH keys for authentication:

cpviosupd -r sftp -n VIOS_FP_3.1.3.14 -h sftpserver -u sftpuser
-k /home/hmcuser/keys/id_rsa -d vios/update/VIOS_FP_3.1.3.14
-f H24094002.iso

Import a VIOS update image from a remote SFTP server (you will be prompted for the password):

cpviosupd -r sftp -n VIOS_FP_3.1.2.10 -h sftpserver -u sftpuser
-d vios/update/VIOS_FP_3.1.2.10

Import a VIOS update image from an NFS file system using NFS version 4:

cpviosupd -r nfs -n VIOS_FP_3.1.3.14 -h 9.3.145.52 -l /images
--options "vers=4" -d vios/update/VIOS_FP_3.1.3.14
-f U872970.bff,U877527.bff,U877574.bff,U879820.bff,U883888.bff

Import a VIOS update image from a USB data storage device (the USB data storage device must already be connected to the HMC):

lsmediadev (to obtain mount point/device name)

mount /dev/sdb1

cpviosupd -r usb -n VIOS_FP_3.1.2.10 --device /dev/sdb1

ENVIRONMENT

None

BUGS

      None

AUTHOR

      IBM Austin

SEE ALSO

      chviosupd, **lsmediadev**, **lsviosupd**, **rmviosupd**, **updvios**

NAME

deploysysplan - deploy system plan

SYNOPSIS

deploysysplan -f *file-name* **-o** {**dv** | **v** | **d**}
 [**-m** *managed-system*] [**--force**]
 [**--plan** *plan-number*] [**-v**]
 [**--help**]

DESCRIPTION

deploysysplan deploys a managed system's partition plan from a system plan file.

OPTIONS

-f   Specifies the name of the file that contains the system plan that is to be deployed. The file must exist in the system plan file directory on the Hardware Management Console (HMC). This file will not be changed by the **deploysysplan** command.

        The file name must end with the **.sysplan** suffix.

-o   Specifies the deployment option to be used when deploying the system plan.

        Use the **dv** option to validate the system plan on the managed system, and if it is valid, to deploy it.

        Use the **v** option to validate the system plan on the managed system but not deploy it.

        Use the **d** option to skip validation of the system plan against the managed system, and just deploy the plan-specified partitions and profiles on the managed system.

-m   Specifies the managed system's name where the plan should be deployed. The system plan optionally specifies the managed system's name where that system plan was intended to be deployed. If a managed system name is specified with this option, that name would override the plan-provided name. If no managed system name was specified in the system plan file then this option is required.

        The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

--force If the managed system has existing partitions that the system plan contains that are in an active state, this option allows this command to proceed. Otherwise, if active partitions are found, this command will fail with an error message.

--plan System plan files can contain more than one system plan. If the file contains more than one plan, this option specifies the **name** of the system plan to deploy. If this **name** is not specified, then the first system plan in the file is deployed. If there is only one system plan in the file, this option is ignored.

-v   When **-o v** is specified, this option specifies that a list of identifiers that identify the steps of the validated system plan should be written to stdout. These steps are part of the plan but not yet implemented on the managed system. Otherwise, this list will not be written out.

        When **-o dv** or **-o d** is specified, this option specifies that a list of log entries that record the steps performed as part of deploying the system plan should be written to stdout. Otherwise, this list will not be written out.

--help Display the help text for this command and exit.

EXAMPLES

Deploy a system plan from the file **mysysplan.sysplan** onto the managed system configured in the file. Validate the plan against the managed system before deploying it:

deploysysplan -f mysysplan.sysplan -o dv

Deploy a system plan from the file **mysysplan.sysplan** onto managed system **mySystem**. Validate the plan against the managed system before deploying it. Deploy the plan, if valid, even though there might be active partitions on the managed system:

deploysysplan -f mysysplan.sysplan -o dv -m mySystem --force

Deploy a system plan from the file **mysysplan.sysplan** onto the managed system identified by the machine type, model, and serial number **9406-570*34134888**. Validate the plan against the managed system before deploying it. Write any errors found in validation or deployment to stdout:

deploysysplan -f mysysplan.sysplan -o dv -m 9406-570*34134888 -v

Validate the ability to deploy a system plan from the file **multisysplan.sysplan** onto managed system **mySystem**. Use the third system plan that appears in this file (the system plan file has at least three system plans). Validate the plan specified against the managed system to determine if that plan can be deployed there but do not actually deploy the plan:

deploysysplan -f multisysplan.sysplan -o v -m mySystem --plan 3

Validate the ability to deploy a system plan from the file **mysysplan.sysplan** onto managed system **mySystem**. Validate the plan against the managed system to determine if that plan can be deployed there but do not actually deploy the plan. Write out the steps in the system plan that are part of the plan but not yet implemented to stdout. Write any errors found in validation or deployment to stdout:

deploysysplan -f mysysplan.sysplan -o v -m mySystem -v

Deploy a system plan from the file **mysysplan.sysplan** onto managed system **mySystem**. Do not validate the plan against the managed system to determine if that plan can be deployed there. Write information about the steps performed in deployment to stdout. Write any errors found in validation or deployment to stdout. Deploy the plan, if valid, even though there might be active partitions on the managed system:

deploysysplan -f mysysplan.sysplan -o d -m mySystem -v --force

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

cpsysplan, lssysplan, mksysplan, rmsysplan

NAME

     diagrmc - diagnose RMC connection issues

SYNOPSIS

     To check the management console for general RMC connection issues:

          diagrmc [**--autocorrect**] [**-v**] [**--help**]

     To check the management console for general RMC connection issues and also check for RMC connection issues to the specified partition:

          diagrmc -m *managed-system* **--ip** *partition-IP-address*

               {**-p** *partition-name* | **--id** *partition-ID*}

               [**--autocorrect**] [**-v**] [**--help**]

     To check the management console for general RMC connection issues and also check for RMC connection issues to the specified management console:

          diagrmc --mcip *MC-IP-address*

               [**--autocorrect**] [**-v**] [**--help**]

DESCRIPTION

     diagrmc checks the management console for possible problems that will prevent the management console from establishing Resource Monitoring and Control (RMC) connections to partitions. Some of the things that are checked include the network setup, firewall permissions for RMC ports, the RMC subsystem, duplicate partition NodeIDs, and recycled IP addresses.

     diagrmc also checks the management console for possible problems that will prevent it from establishing RMC connections to other management consoles in order to manage a Power enterprise pool.

OPTIONS

     -m   The name of the managed system which has the partition for which to check for RMC connection issues. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

     --ip   The IP address of the partition for which to check for RMC connection issues.

     -p   The name of the partition for which to check for RMC connection issues.

               You must either use this option to specify the name of the partition, or use the **--id** option to specify the partition's ID. The **-p** and the **--id** options are mutually exclusive.

     --id   The ID of the partition for which to check for RMC connection issues.

               You must either use this option to specify the ID of the partition, or use the **-p** option to specify the partition's name. The **--id** and the **-p** options are mutually exclusive.

     --mcip The IP address of the management console for which to check for RMC connection issues.

     --autocorrect

               Specify this option to allow the management console to automatically correct any RMC connection issues that are found that the management console can correct. Note that the management console will not be automatically restarted.

     -v   Specify this option to enable verbose mode. When verbose mode is enabled, additional details are displayed.

     --help Display the help text for this command and exit.

EXAMPLES

     Check for general RMC connection issues:

diagrmc

Check for general RMC connection issues and for RMC connection issues to partition **mylpar** with IP address **9.53.22.86**:

diagrmc -m system1 -p mylpar --ip 9.53.22.86

Check for general RMC connection issues and for RMC connection issues to partition ID **5** with IP address **9.41.161.33**, and automatically correct the issues found:

diagrmc -m system1 --id 5 --ip 9.41.161.33 --autocorrect

Check for general RMC connection issues and for RMC connection issues to the management console with IP address **9.41.161.45** that may be preventing the management consoles from communicating to manage a Power enterprise pool:

diagrmc --mcip 9.41.161.45

ENVIRONMENT
    None

BUGS
    None

AUTHOR
    IBM Austin

NAME

dump - perform dump operation

SYNOPSIS

dump -m *managed-system* **-t sys -o set -a "***attributes***"**
 [**--help**]

DESCRIPTION

dump sets the system dump parameters for the *managed-system*.

OPTIONS

-m   The name of the managed system for which to set the system dump parameters. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

-t   The type of dump for which to set the dump parameters. Valid values are **sys** for system dump.

-o   The dump operation to perform. Valid values are **set** to set the system dump parameters.

-a   The configuration data needed to set the system dump parameters. The configuration data consists of attribute name/value pairs, which are in comma separated value (CSV) format. The configuration data must be enclosed in double quotes.

The format of the configuration data is as follows:

*attribute-name=value***,***attribute-name=value***,***...*

Valid attribute names:
    as_needed
       Specifies when to collect system dumps.

       Valid values:
       0 - do not collect system dumps
       1 - collect system dumps as necessary

       Setting **as_needed** to **0** will remove the ability of service personnel to diagnose server errors. Do not set **as_needed** to **0** unless directed to do so by your hardware service representative.
    sys_hardware
       Specifies how much hardware data to collect when a system dump occurs.

       Valid values:
       auto - collect hardware data based on the system dump event that occurred
       max - collect as much hardware data as possible

       Setting **sys_hardware** to **max** will cause system dumps to take longer to complete. Do not set **sys_hardware** to **max** unless directed to do so by your hardware service representative.
    sys_firmware

Specifies how much system firmware data
to collect when a system dump occurs.

Valid values:
auto   - collect the primary data in
               memory owned by system
               firmware
max   - collect the primary data in
               memory owned by system
               firmware plus all TCEs
io   - collect the primary data in
               memory owned by system
               firmware plus all PCI TCEs
virtualio - collect the primary data in
               memory owned by system
               firmware plus all virtual I/O
               TCEs

Setting **sys_firware** to **max**, **io**, or **virtualio**
will cause system dumps to take longer to complete.
Do not set **sys_firware** to one of these values
unless directed to do so by your hardware service
representative.

--help   Display the help text for this command and exit.

EXAMPLES

Set the system dump parameters for managed system **sys1**:

dump -m sys1 -t sys -o set -a "sys_hardware=auto,
 sys_firmware=auto"

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

lsdump

NAME
       formatmedia - format media

SYNOPSIS
       formatmedia -r usb -d *device* [**-t** {**ext4** | **vfat**}] [**-l** *label*] [**--help**]

DESCRIPTION
       formatmedia formats a USB device on the Hardware Management Console (HMC). The USB device can
       be formatted with the EXT4 or VFAT file system, which are the only file systems supported on USB
       devices used on the HMC.

OPTIONS
       -r   The type of media device to format. The only valid value is **usb** for a USB flash drive or other
                 USB data storage device.

       -d   The device to format. This value can be obtained from the **lsmediadev** command.

       -t   The type of file system to format. Valid values are **ext4** and **vfat**. If this option is omitted, the
                 device will be formatted with the VFAT file system.

       -l   The label to assign to the device. The specified label will be converted to upper case and truncated
                 to 11 characters. If this option is omitted, a blank label will be assigned.

       --help   Display the help text for this command and exit.

EXAMPLES
       Format a USB device with the VFAT file system:

              formatmedia -r usb -d /dev/sdb1 -l BACKUP

       Format a USB device with the EXT4 file system:

              formatmedia -r usb -d /dev/sdb1 -t ext4 -l BACKUP

ENVIRONMENT
       None

BUGS
       None

AUTHOR
       IBM Austin

SEE ALSO
       lsmediadev

NAME

getdump - get dump

SYNOPSIS

getdump -m *managed-system* **-t** {**sp** | **sys** | **resource**} [**-s** {**p** | **s**}]
 [**--help**]

DESCRIPTION

getdump offloads a dump from the *managed-system* to the Hardware Management Console (HMC). The dump is written to a file in the **/dump** or **/extra** directory on the HMC.

The **lsdump** command can be used to list the dumps that are available on the *managed-system*.

OPTIONS

-m The name of the managed system from which to offload the dump. The name may either be the user-defined name for the managed system, or be in the form *tttt***-***mmm*****sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt***-***mmm*****sssssss* form must be used if there are multiple managed systems with the same user-defined name.

-t The dump to offload. Valid values are **sp** for a service processor dump, **sys** for a system dump, or **resource** for a resource dump.

-s When offloading a service processor dump, use this option to specify the service processor from which to offload the dump. Valid values are **p** for the primary service processor and **s** for the secondary service processor. If this option is not specified, the service processor dump will be offloaded from the primary service processor.

--help Display the help text for this command and exit.

EXAMPLES

Offload the system dump from managed system **sys1**:

getdump -m sys1 -t sys

Offload the service processor dump from the secondary service processor on managed system **9117-570*12345678**:

getdump -m 9117-570*12345678 -t sp -s s

Offload the resource dump from managed system **sys1**:

getdump -m sys1 -t resource

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

lsdump, **rmdump**, **startdump**

NAME
>   getfile - get file

SYNOPSIS
>   **getfile -t** {**krbkeyfile** | **ldapcacert** | **powersccacert** | **powersctrust** |
>   **rsyslogcacert** | **rsysloghmccert** | **rsysloghmckey** |
>   **bmccacert**}
>   **-l** {**l** | **s**} **-f** *file* [**-a** *alias*]
>   [**-h** *host-name* **-u** *user-ID* [**--passwd** *password*] [**-k** *SSH-private-key*]]
>   [**--help**]

DESCRIPTION
>   **getfile** obtains and deploys a file of the specified type on the Hardware Management Console (HMC).

OPTIONS
>   **-t**   The type of file to get and deploy. Valid values are **krbkeyfile** for the Kerberos service key
>   (keytab) file, **ldapcacert** for the LDAP Certificate Authority (CA) certificate file, **powersccacert**
>   for the for the PowerSC MFA client truststore key file, **powersctrust** for the PowerSC endpoint
>   truststore file, **rsyslogcacert** for the rsyslog CA certificate file, **rsysloghmccert** for the rsyslog
>   HMC certificate file, **rsysloghmckey** for the rsyslog HMC private key file, and **bmccacert** for the
>   Baseboard Management Controller (BMC) or Enterprise BMC CA certificate file.
>
>   The Kerberos service key file is generated on a Key Distribution Center (KDC) server. The ser-
>   vice key file contains the host principal that identifies the HMC to the KDC server. When this
>   command is run, the file obtained will become the **/etc/krb5.keytab** file on the HMC. This file
>   will be used to verify the identity of the KDC and the HMC during remote Kerberos authentication
>   of HMC users. Kerberos must be configured on the HMC before this command is run, and the
>   HMC must be rebooted after the successful completion of this command for the change to take
>   effect.
>
>   The LDAP CA certificate file contains the certificate for the Certificate Authority the HMC recog-
>   nizes. This file will be used to provide a secure connection between the HMC and the LDAP
>   server during remote LDAP authentication of HMC users. LDAP must be configured on the HMC
>   before this command is run.
>
>   The rsyslog CA certificate file, rsyslog HMC certificate file, and rsyslog HMC private key file
>   must be deployed on the HMC before TLS encrypted system logging over TCP can be enabled.
>   These 3 files will automatically be removed from the HMC when TLS encrypted system logging
>   over TCP is disabled.
>
>   **-l**   The location where the file to get resides.
>
>   Specify **l** with this option if the file has already been copied to the HMC or resides on removable
>   media. If the file resides on removable media, the media must be present in the removable media
>   device and the device must be mounted with the **mount** command before this command is issued.
>   The **lsmediadev** command can be used to display all of the removable media devices on the HMC.
>
>   Specify **s** with this option if the file resides on a remote site. Secure FTP (SFTP) will be used to
>   obtain the file from the remote site.
>
>   **-f**   The fully qualified name of the file on the HMC, removable media, or remote site.
>
>   **-a**   The alias to identify the BMC or Enterprise BMC CA certificate.
>
>   This option is required when getting the BMC or Enterprise BMC CA certificate. Otherwise, this
>   option is not valid.
>
>   **-h**   The host name or IP address of the SFTP server from which to get the file.

This option is required when *file* resides on a remote site. Otherwise, this option is not valid.

-u   The user ID to use to log in to the remote site.

This option is required when *file* resides on a remote site. Otherwise, this option is not valid.

--passwd
The password to use to log in to the remote site.

If both this option and the **-k** option are omitted and *file* resides on a remote site, you will be prompted to enter the password. The **--passwd** and **-k** options are mutually exclusive.

This option is only valid when *file* resides on a remote site.

-k   The name of the file that contains the SSH private key. If the file name is not fully qualified, the file must exist in the user's home directory on the HMC.

Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen** command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so when you run the command on the HMC, you must specify both the directory and the file name for the private key. If you generate a key with a passphrase, you will be prompted to enter the passphrase when you run any HMC command that uses the key.

If both this option and the **--passwd** option are omitted and *file* resides on a remote site, you will be prompted to enter the password. The **-k** and **--passwd** options are mutually exclusive.

This option is only valid when *file* resides on a remote site.

--help   Display the help text for this command and exit.

EXAMPLES

Get the Kerberos service key file from the remote site **sftpserver** using SFTP, then deploy the file as **/etc/krb5.keytab** on the HMC (you will be prompted to enter the user's password):

**getfile -t krbkeyfile -l s -h sftpserver -u sftpuser
 -f /home/sftpuser/krb5.keytab**

Get the rsyslog CA certificate file from the remote site **sftpserver** using SFTP and SSH keys for authentication, then deploy the file on the HMC:

**getfile -t rsyslogcacert -l s -h sftpserver -u sftpuser
 -f /home/sftpuser/rsyslog/cacert -k /home/hmcuser/keys/id_rsa**

Get the LDAP CA certificate file locally from the user's home directory, then deploy the file on the HMC:

getfile -t ldapcacert -l l -f /home/user/certs/ldapcert

Get the BMC CA certificate file from the remote site **sftpserver** using SFTP, then deploy the file on the HMC:

**getfile -t bmccacert -l s -h sftpserver -u sftpuser --passwd myPassword
 -f /home/sftpuser/bmccerts/CACert1 -a CACert1**

ENVIRONMENT
None

BUGS
None

AUTHOR

    IBM Austin

SEE ALSO

    chbmccert, **chhmc**, **chhmcldap**, **lsbmccert**, **lsmediadev**, **rmfile**

NAME
      getupgfiles - get upgrade files

SYNOPSIS
      getupgfiles -r {**disk** | **ftp** | **sftp** | **nfs** | **ibmwebsite**}
      [**-h** *host-name*] [**-u** *user-ID*] [**--passwd** *password*] [**-k** *SSH-private-key*]
      [**-l** *mount-location*] [**-o** *mount-command-options*] [**-d** *directory*]
      [**--ptf** *PTF-number*] [**--help**]

DESCRIPTION
      getupgfiles obtains required files for a Hardware Management Console (HMC) upgrade from a remote
      server or from the HMC hard disk. The files are transferred onto a special partition on the HMC hard disk.
      After the files have been transferred, the **chhmc** command can be used to allow the HMC to boot from this
      partition and perform the upgrade.

OPTIONS
      -r   The location of the upgrade files. Valid values are **disk** for the HMC hard disk, **ftp** for an FTP
                   server, **sftp** for a secure FTP (SFTP) server, **nfs** for an NFS server, and **ibmwebsite** for the IBM
                   Fix Central website.

      -h   The host name or IP address of the remote server where the upgrade files are located.

                   This option is required when the upgrade files are located on a remote server. Otherwise, this
                   option is not valid.

      -u   The user ID to use to log in to the remote FTP or SFTP server.

                   This option is required when the upgrade files are located on a remote FTP or SFTP server. Other-
                   wise, this option is not valid.

      --passwd
                   The password to use to log in to the remote FTP or SFTP server.

                   If this option is omitted and the upgrade files are located on a remote FTP server, you will be
                   prompted to enter the password. If both this option and the **-k** option are omitted and the upgrade
                   files are located on a remote SFTP server, you will be prompted to enter the password. The
                   --passwd and **-k** options are mutually exclusive.

                   This option is only valid when the upgrade files are located on a remote FTP or SFTP server.

      -k   The name of the file that contains the SSH private key. If the file name is not fully qualified, the
                   file must exist in the user's home directory on the HMC.

                   Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen**
                   command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so
                   when you run the command on the HMC, you must specify both the directory and the file name
                   for the private key. If you generate a key with a passphrase, you will be prompted to enter the
                   passphrase when you run any HMC command that uses the key.

                   If both this option and the **--passwd** option are omitted and the upgrade files are located on a
                   remote SFTP server, you will be prompted to enter the password. The **-k** and **--passwd** options
                   are mutually exclusive.

                   This option is only valid when the upgrade files are located on a remote SFTP server.

      -l   The mount location defined on the NFS server where the upgrade files are located.

                   This option is required when the upgrade files are located on a remote NFS server. Otherwise, this
                   option is not valid.

-o   The options to be passed to the **mount** command used to mount the NFS file system where the upgrade files are located.

This command uses NFS version 4 by default.

This option is only valid when the upgrade files are located on a remote NFS server.

-d   The directory that contains the upgrade files. If all of the required files are not present in this directory, this command will fail.

This option is required when the upgrade files are located on a remote FTP or SFTP server.

--ptf   The upgrade image PTF number.

This option is required when the upgrade files are located on the IBM Fix Central website. Otherwise, this option is not valid.

--help   Display the help text for this command and exit.

EXAMPLES

Get HMC upgrade files from a remote FTP server (you will be prompted to enter the user's password):

getupgfiles -r ftp -h ftpserver -u ftpuser -d /home/ftpuser/images

Get HMC upgrade files from a remote SFTP server and use SSH keys for authentication:

getupgfiles -r sftp -h 9.3.123.25 -u sftpuser
-k /home/hmcuser/keys/id_rsa -d /home/sftpuser/images

Get HMC upgrade files from a remote NFS server:

getupgfiles -r nfs -h nfsserver -l /hmc/upgrades -d 830

Get HMC upgrade files from the HMC hard disk:

getupgfiles -r disk -d /home/hscroot

Get the HMC upgrade files for PTF **MF71420** from the IBM Fix Central website:

getupgfiles -r ibmwebsite --ptf MF71420

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chhmc, **lsupgfiles**

NAME

      hmcshutdown - shut down the Hardware Management Console

SYNOPSIS

      hmcshutdown -t {**now** | *number-of-minutes*} [**-r**] [**--force**] [**--help**]

DESCRIPTION

      hmcshutdown shuts down the Hardware Management Console (HMC). If requested, the HMC will be rebooted after the shutdown completes.

OPTIONS

      -t   The number of minutes to wait before starting the shutdown. If **now** is specified, the shutdown will be started immediately.

      -r   Reboot the HMC after the shutdown. If this option is omitted, the HMC will be halted after the shutdown.

      --force   Specify this option to force the shutdown when the HMC Command Server is not running.

      --help   Display the help text for this command and exit.

EXAMPLES

      Reboot the HMC after 3 minutes:

      hmcshutdown -t 3 -r

      Halt the HMC immediately:

      hmcshutdown -t now

ENVIRONMENT

      None

BUGS

      None

AUTHOR

      IBM Austin

NAME

hmcwin - Provides screen capture on HMC

SYNOPSIS

hmcwin { -o c | v |r } -f file-name [--help]

DESCRIPTION

hmcwin Provide screen capture on HMC.

OPTIONS

-o   c captures the screen and save it in file-name. The file will be saved under the user's $HOME/.screen_capture/ directory. v displays the image stored in file file-name from the user's $HOME/.screen_capture/ directory. When using the v option, left mouse click on the displayed window or enter ctrl-c to dismiss it. r removes the file file-name under the user's $HOME/.screen_capture directory.

-f   The file name to be used to create or remove the screen captured file under the user's $HOME/.screen_capture directory.

--help   Prints the help message and exits.

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

NAME

hwdbg - hardware debug tools

SYNOPSIS

hwdbg -m *managed-system* **-r sriov -o s**
{**-p** *partition-name* | **--id** *partition-ID*}
-a "*attributes***"** [**--force**] [**--help**]

DESCRIPTION

hwdbg provides hardware debug tools for hardware service personnel.

This command is used to set SR-IOV hardware debug mode for an SR-IOV logical port.

OPTIONS

-m   The name of the managed system on which to perform the operation. The name may either be the user-defined name for the managed system, or be in the form *tttt***-***mmm*__*__*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt***-***mmm*__*__*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

-r   The type of hardware resources to debug. Valid values are **sriov** for Single Root I/O Virtualization (SR-IOV) resources.

-o   The operation to perform. Valid values are **s** to set hardware debug attributes.

-p   The name of the partition for which to perform the operation.

You must either use this option to specify the name of the partition, or use the **--id** option to specify the partition's ID. The **-p** and the **--id** options are mutually exclusive.

--id   The ID of the partition for which to perform the operation.

You must either use this option to specify the ID of the partition, or use the **-p** option to specify the partition's name. The **--id** and the **-p** options are mutually exclusive.

-a   The configuration data needed to set hardware debug attributes. The configuration data consists of attribute name/value pairs, which are in comma separated value (CSV) format. The configuration data must be enclosed in double quotes.

The format of the configuration data is as follows:

attribute-name=*value***,***attribute-name*=*value***,***...*

Valid attribute names (all are required):
    adapter_id
    debug_mode
        Valid values:
        0 - disable
        1 - enable

        Warning! Enabling SR-IOV debug mode is a destructive operation which may be disruptive to all users of the adapter. An adapter reset may be required to recover.
    logical_port_id

--force   This option allows you to force the operation to be performed for an AIX, Linux, or VIOS partition that does not have an RMC connection to the management console.

--help   Display the help text for this command and exit.

EXAMPLES

Enable SR-IOV hardware debug mode for an SR-IOV logical port:

hwdbg -m 9117-MMB*1234567 -r sriov -p lpar1 -o s
-a "adapter_id=1,logical_port_id=27004001,debug_mode=1"

Disable SR-IOV hardware debug mode for an SR-IOV logical port:

hwdbg -m 9117-MMB*1234567 -r sriov -p lpar1 -o s
-a "adapter_id=1,logical_port_id=27004001,debug_mode=0"

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

lshwres

NAME
>   installios - Network install a Virtual I/O Server Logical Partition

SYNOPSIS
>   **installios** [**-p** *partition-name* **-i** *ipaddr-or-hostname*
>   **-S** *subnet-mask* **-g** *gateway* **-d** *path* **-s** *system-name*
>   [**-m** *mac-address]* **-r** *profile* [**-n**] [**-P** *speed*]
>   [**-D** *duplex*] [**-l** *language*] [**-A** *net_interface*]
>   [**-E** *bosinst_pvid*] [**-T** *destination_dir*]
>   [**-V** *vlan_tag*] [**-Y** *vlan_priority*] [**-C**]
>   [**-o** *nfs_option*] [**-R** *label_name*]
>   [**-y** *bootp_retry_count*] [**-z** *tftp_retry_count*]]
> | **-u**
> | **-q**
> | [**-F**] **-e -R** *label_name*

DESCRIPTION
>   **installios** installs the Virtual I/O Server. It must be run from the Hardware Managment Console (HMC). All
>   of the flags are optional. If no flags are provided, the **installios** wizard will be invoked and the user will be
>   prompted to interactively enter the information contained in the flags.
>
>   Please note:
>   If the managed system is in co-management mode (set with *is_controller=1*) when listed with the
>   **lscomgmt** command, the partition profile value will need to be ommitted.

OPTIONS
>   **-s**   Specifies the managed system. The name of the managed system maintained by the HMC. This
>   name must match the name shown on the HMC, not a host name.
>
>   **-p**   Specifies the partition name. The name of the LPAR that will be installed with Virtual I/O Server
>   operating system. This partition must be of type Virtual I/O Server and the name given for it must
>   match the name shown on the HMC, not a host name.
>
>   **-r**   Specifies the *profile* name. The name of the *profile* that contains the hardware resources being
>   installed to.
>
>   **-d**   Specifies the *path* to installation images. Valid *path* types are:
>
>   **/dev/cdrom** - for installation images on DVD
>
>   **/dev/***usb-device-name* - for installation images on USB device. The **lsmediadev** command can be
>   used to display the device name of the USB device.
>
>   **localpath** - for a system backup of the Virtual I/O Server created by the backupios command -- or
>   for an ISO image of Virtual I/O Server install media -- that resides in the directory *localpath* on
>   the HMC. When using an ISO image, *localpath* should include the image filename of the first vol-
>   ume. If the ISO image span multiple volumes, the **installios** will automatically locate the remain-
>   ing volumes, provided they reside within the same directory as the first.
>
>   **nfs_server:remote_path_to_image** - for a system backup of the Virtual I/O Server, created by the
>   backupios command, that resides in the *remote_path_to_image* location on the NFS server,
>   *nfs_server*. Installation from an ISO image is not supported when an NFS path is used.
>
>   **-i**   Specifies the client IP address. The IP address with which the client's network interface will be
>   configured for network installation of the Virtual I/O Server operating system.
>
>   **-S**   Specifies the client subnet mask. The subnet mask with which the client's network interface will
>   be configured for network installation of the Virtual I/O Server operating system.

-g   Specifies the client *gateway*. The default *gateway* that the client will use during network installation of the Virtual I/O Server operating system.

-m   Specifies the client MAC address. The MAC address of the client network interface through which the network installation of the Virtual I/O Server will take place.

-P   Specifies *speed* (optional) The communication *speed* with which to configure the client's network interface. This value can be 10, 100, 1000, *or* auto, and is 100 by default if this flag is not specified. For newer machines, a speed value of auto is desired although this value is determined by the network configuration of the environment and the network adapter of the installing machine.

-D   Specifies *duplex* (optional). The *duplex* setting with which to configure the client's network interface. This value can be full, half *or* auto and is set to full by default if this flag is not specified. For newer machines, a duplex value of auto is desired although this value is determined by the network configuration of the environment and the network adapter of the installing machine.

-n   Specifies not to configure the client's network interface (optional): If this flag is specified, then the client's network interface will not be configured with the IP settings specified in the flags given to this command after the installation has completed.

-l   Specifies *language* (optional): The *language* in which the license agreement will be displayed before the installation. Upon viewing the license, a prompt will be shown asking if the license is to be accepted. If the prompt is answered with y, then the installation will proceed and the Virtual I/O Server license will be automatically accepted after the installation. If the prompt is answered with n, then the **installios** command will exit and the installation will not proceed. If this flag is not specified, then the installation will proceed, but the Virtual I/O Server will not be usable until the license is manually accepted after the installation.

-A   Specifies *net_interface* (optional): The specified *net_interface* will be used to network install the partition. The network interface specified must be connected to a network in which the partition's IP address is reachable. If no interface is specified, a default public interface will be chosen automatically, based on the HMC's current hostname.

-E   Specifies *bosinst_pvid* (optional): The specified *bosinst_pvid* value signifies the physical volume identity for a disk targeted for installation. The bosinst_pvid value can be obtained by running the *lspv* command on the machine being installed.

-T   Specifies *destination_dir* (optional): The specified *destination_dir* points to a path were the source will be copied to on the HMC. The default destination path is the /extra filesystem.

-V   Specifies the VLAN tag identifier to use for tagging Ethernet frames during network install for virtual network communication. Valid value is from **0** to **4094** (optional).

-Y   Specifies the VLAN tag priority to use for tagging Ethernet frames during network install for virtual network communication. Valid value is from **0** to **7** (optional).

-C   Specifies the option to save the label name and its image for later use (optional). To remove the saved labels and its image, use the **-e** flag to erase the label from /etc/nimol.conf.

-R   Specifies a label name for **installios** to use instead of creating a default label name (optional).

-y   Specifies the maximum number of BOOTP retry attempts. Valid value is from **0** to **9** (optional). The default value is **5**.

-z   Specifies the maximum number of TFTP retry attempts. Valid value is from **0** to **9** (optional). The default value is **5**.

-u   Unconfigure **installios** (optional). Will manually unconfigure the **installios** installation resources. This flag is only needed if a problem occurs during the installation and **installios** does not automatically unconfigure itself. However, if the **-C** flag is specified, **installios** will not unconfigure itself. If a label exists in the installios configuration file /etc/nimol.conf, the labels will need to be removed first in order to unconfigure installios.

-q   Query **installios** for labels created (optional). The **installios** command creates labels when it rips
            installable images from the source image to disk. The labels are stored in /etc/nimol.conf and are
            linked to clients when they are being used for installation. The query flag will list out the labels
            known to installios.

-e   Erase a label known to **installios** (optional). When executing the **installios** command with the **-R**
            label, it creates a label when it rips the installable images from the source image to disk. The label
            is stored in /etc/nimol.conf and its reference to install resources are linked to a client when it is
            used for installation. The query flag will list out the labels known to installios.

-F   Force the operation to continue and to bypass certain checking that may be preventing **installios** to
            run (optional).

-o   Specifies the NFS option to use when mounting install resources from a remote server (optional).

EXAMPLES
        To use the installios wizard which will prompt the user for partition and network information to install a
        partition, type:

        installios

        To create resources from the CDROM media for installing a partition with the following information:
            Managed System   : wampeter
            Partition Name   : shire02
            Partition Profile : default
            Partition IP   : 9.3.6.234
            Partition Subnet : 255.255.255.0
            Partition Gateway : 9.3.6.1

        installios -d /dev/cdrom -i 9.3.6.234 -g 9.3.6.1 -S 255.255.255.0 -s wampeter -p shire02 -r default

        To create resources from a directory at /mnt for installing a partition with the following information:
            Managed System   : bokonon
            Partition Name   : mordor02
            Partition Profile : full_resource
            Partition IP   : 9.3.6.134
            Partition Subnet : 255.255.255.0
            Partition Gateway : 9.3.6.1
            MAC address   : f2:d4:60:00:d0:03

        installios -d /mnt -i 9.3.6.134 -g 9.3.6.1 -S 255.255.255.0 -m f2:d4:60:00:d0:03 -s bokonon -p mordor02
        -r full_resource

        To create resources from an ISO image at the location /extra/GOLD_BUILD, and saving the image for later
        execution in installing a partition with the following information:
            Managed System   : bokonon
            Partition Name   : mordor05
            Partition Profile : vios
            Partition IP   : 9.3.6.250
            Partition Subnet : 255.255.255.0
            Partition Gateway : 9.3.6.1
            MAC address   : f2:d8:90:00:e0:10

        installios -d /extra/GOLD_BUILD/dvdimage.v1.iso -i 9.3.6.250 -g 9.3.6.1 -S 255.255.255.0 -m
        f2:d8:90:00:e0:10 -s bokonon -p mordor05 -r vios -R GOLD_BUILD -C

To create resources from a remote server that will be serving a nim_resources.tar image at the location server1:/export/nim_resources.tar, using an NFS option of "-o vers=3 -o nolock", with the following information:

    Managed System   : bokonon
    Partition Name   : mordor05
    Partition Profile : vios
    Partition IP   : 9.3.6.250
    Partition Subnet : 255.255.255.0
    Partition Gateway : 9.3.6.1
    MAC address   : f2:d8:90:00:e0:10

installios -d server1:/export/nim_resources.tar -o "-o vers=3 -o nolock" -i 9.3.6.250 -g 9.3.6.1 -S 255.255.255.0 -m f2:d8:90:00:e0:10 -s bokonon -p mordor05 -r vios

To clean up tasks from a previous installios execution, type:

installios -u

To query installios for a list of label names and their image locations, type:

installios -q

To erase a label name and the image saved from installios where the label name is GOLD_BUILD, type:

installios -e -R GOLD_BUILD

ENVIRONMENT
INSTALLIOS_DEBUG
This variable is use to print debug messages from **lpar_netboot** when **installios** executes the **lpar_netboot** command. This variable is set with **INSTALLIOS_DEBUG=yes**. When executing the **installios** command in the wizard mode, this variable must not be set as the debug output from **lpar_netboot** will interfere with the MAC address discovery resulting in a failed execution. This variable must only be set when executing **installios** on the command line with flags.

INSTALLIOS_PRIVATE_IF
This variable is used by **installios** to enable DHCP service when responding to BOOTP request from an installing partition. This variable must only be use in situation where the FSP (Flexible Service Processor) and the installing partition communicate with the HMC through a private network. If the private network the HMC is using is eth0, then this variable is set with **INSTALLIOS_PRIVATE_IF=eth0**.

INSTALLIOS_DESTINATION_DIRECTORY
This variable is used by **installios** to specify the destination directory to copy the source to. This variable is set with **INSTALLIOS_DESTINATION_DIRECTORY=/info**. This variable is overridden by the -T destination_dir flag. In certain situation where calling **installios** fails due to space limitation when copying over the source image, setting this variable or the -T flag to an alternate location with space capable of storing the content of the source location will resolve the situation.

BUGS
None

AUTHOR
      IBM Austin

SEE ALSO
      chsysstate, **lssyscfg**, **mkvterm**, **rmvterm**, **lpar_netboot**, **lsmediadev**

NAME

labelvios - label Virtual I/O Servers

SYNOPSIS

labelvios -o {**a** | **r** | **s**} **-m** *managed-system* [**-l** *label*]
 [{**-f** *input-data-file* | **-i "***input-data***"**}] [**--help**]

DESCRIPTION

labelvios configures Virtual I/O Server (VIOS) Fibre Channel (FC) port labels or VIOS group labels, or changes the default VIOS label override settings on a managed system.

VIOS FC port labels are used for partition migration and partition remote restart operations. The same label names must be defined on both the source and destination VIOS FC ports used in the operation.

VIOS group labels are also used for partition migration and partition remote restart operations. The same label names must be defined on both the source and destination managed systems used in the operation.

OPTIONS

-o   The operation to perform. Valid values are **a** to add a VIOS group label, **r** to remove a VIOS FC port label or one or more VIOS group labels, and **s** to configure a VIOS FC port label, to change the attributes of a VIOS group label, or to change the default VIOS label override settings for the managed system.

-m   The name of the managed system for which to perform the operation. The name may either be the user-defined name for the managed system, or be in the form *tttt*-*mmm**sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt*-*mmm**sssssss form must be used if there are multiple managed systems with the same user-defined name.

-l   The name of the VIOS FC port label to set, or the name of the VIOS group label to add, remove, or set.

When removing a VIOS group label, you can use this option to specify the name of the label to remove, or you can specify the **resource** attribute to remove all labels of the specified resource type.

This option is required when setting a VIOS FC port label, when adding a VIOS group label, and when changing the attributes of a VIOS group label. This option is optional when removing a VIOS group label. This option is not valid when removing a VIOS FC port label or changing the default VIOS label override settings.

-f   The name of the file containing the input data for this command. The input data consists of attribute name/value pairs, which are in comma separated value (CSV) format.

The format of the input data is as follows:

attribute-name=*value***,***attribute-name*=*value***,**...

Note that certain attributes accept a comma separated list of values, as follows:

"*attribute-name*=*value***,***value***,**...**",**...

When a list of values is specified, the attribute name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

If '+=' is used in the attribute name/value pair instead of '=', the specified *value* is added to the existing list. += can be used in set operations only.

If '**-=**' is used in the attribute name/value pair instead of '**=**', the specified *value* is deleted from the existing list. **-=** can be used in set operations only.

Attribute names for setting or removing a VIOS FC port label:
> **resource**
>> Required
>> The only valid value is **fcport** for FC port
>
> **port_name**
>> Required
>> FC port name
>
> **vios_names** | **vios_ids**
>> Either **vios_names** or **vios_ids** is required
>> One VIOS name or one VIOS ID

Attribute names for adding a VIOS group label:
> **resource**
>> Required
>> Resource type of the VIOS group
>> Valid values are:
>> **msp** - Mover Service Partition (MSP)
>> **vfc** - virtual Fibre Channel
>> **vnic** - virtual NIC
>> **vscsi** - virtual SCSI
>
> **type**
>> Valid values are:
>> **include** - include the VIOS group in VIOS selection
>>> (default value)
>>
>> **exclude** - exclude the VIOS group in VIOS selection
>>> (only valid for VIOS MSP groups)
>
> **vios_names**
>> Comma separated list of one or more names of Virtual
>> I/O Servers to be in the group. Each entry has the
>> following format:
>>
>> *VIOS-name*[/*VIOS-IP-addresses*]
>>
>> The '/' character is optional, but it must be present
>> if *VIOS-IP-addresses* is present. *VIOS-IP-addresses*
>> can be present in VIOS MSP groups only.
>>
>> *VIOS-IP-addresses* is a comma separated list of one
>> or more VIOS IP addresses to be in the VIOS MSP group.
>> It is optional for an include group and required for
>> an exclude group.
>>
>> Either **vios_names** or **vios_ids** is required.
>
> **vios_ids**
>> Comma separated list of one or more IDs of Virtual
>> I/O Servers to be in the group. Each entry has the
>> following format:
>>
>> *VIOS-ID*[/*VIOS-IP-addresses*]
>>
>> The '/' character is optional, but it must be present

if *VIOS-IP-addresses* is present. *VIOS-IP-addresses*
can be present in VIOS MSP groups only.

VIOS-IP-addresses is a comma separated list of one
or more VIOS IP addresses to be in the VIOS MSP group.
It is optional for an include group and required for
an exclude group.

Either **vios_names** or **vios_ids** is required.

Attribute names for setting a VIOS group label:
    new_name
    vios_names
        Comma separated list of one or more names of Virtual
        I/O Servers to be in the group, or added to or removed
        from the group. Each entry has the following format:

        VIOS-name[/*VIOS-IP-addresses*]

        The '/' character is optional, but it must be present
        if *VIOS-IP-addresses* is present. *VIOS-IP-addresses*
        can be present in VIOS MSP groups only.

        VIOS-IP-addresses is a comma separated list of one
        or more VIOS IP addresses to be in the VIOS MSP group,
        or added to or removed from the group. To remove the
        MSP and all of its IP addresses from the group,
        VIOS-IP-addresses does not need to be specified.
    vios_ids
        Comma separated list of one or more IDs of Virtual
        I/O Servers to be in the group, or added to or removed
        from the group. Each entry has the following format:

        VIOS-ID[/*VIOS-IP-addresses*]

        The '/' character is optional, but it must be present
        if *VIOS-IP-addresses* is present. *VIOS-IP-addresses*
        can be present in VIOS MSP groups only.

        VIOS-IP-addresses is a comma separated list of one
        or more VIOS IP addresses to be in the VIOS MSP group,
        or added to or removed from the group. To remove the
        MSP and all of its IP addresses from the group,
        VIOS-IP-addresses does not need to be specified.

Attribute names for removing a VIOS group label:
    resource
        Resource type of the VIOS group labels to remove
        Valid values are:
        msp   - all Mover Service Partition (MSP) group labels
        vfc   - all virtual Fibre Channel group labels
        vnic - all virtual NIC group labels
        vscsi - all virtual SCSI group labels
        all   - all VIOS group labels

Attribute names for changing the default VIOS label override settings:

fc_port_label_override
Specifies whether VIOS FC port labels are to be used during partition migration and remote restart operations:
1 - yes
2 - if possible (default value)

msp_label_override
Specifies whether VIOS MSP group labels are to be used during partition migration and remote restart operations:
1 - yes
2 - if possible (default value)

storage_label_override
Specifies whether VIOS virtual SCSI and virtual Fibre Channel group labels are to be used during partition migration and remote restart operations:
1 - yes
2 - if possible (default value)

vnic_label_override
Specifies whether VIOS virtual NIC group labels are to be used during partition migration and remote restart operations:
1 - yes
2 - if possible (default value)

Input data for this command can be specified with this option or the **-i** option. The **-f** and the **-i** options are mutually exclusive.

Input data is required when setting and removing a VIOS FC port label, adding a VIOS group label, changing the attributes of a VIOS group label, or changing the default VIOS label override settings for the managed system. Input data is optional when removing VIOS group labels.

-i   This option allows you to enter input data on the command line, instead of using a file. Data entered on the command line must follow the same format as data in a file, and must be enclosed in double quotes.

Input data for this command can be specified with this option or the **-f** option. The **-i** and the **-f** options are mutually exclusive.

Input data is required when setting and removing a VIOS FC port label, adding a VIOS group label, changing the attributes of a VIOS group label, or changing the default VIOS label override settings for the managed system. Input data is optional when removing VIOS group labels.

--help Display the help text for this command and exit.

EXAMPLES

In the following examples nested double quote characters are preceded by an escape character ('\'). The escape characters are required to run the commands locally on an HMC.

Set a VIOS FC port label:

**labelvios -m sys1 -o s -l fcportA -i "resource=fcport,port_name=fc0,
 vios_names=vios1"**

Add a VIOS vSCSI group label:

      labelvios -m sys1 -o a -l vscsiGroupA -i "resource=vscsi, vios_names=vios1"

      Add a VIOS vFC group label:

      labelvios -m sys1 -o a -l vfcGroup1 -i "resource=vfc,\"vios_ids=1,2\""

      Add a VIOS MSP exclude group label:

      labelvios -m sys1 -o a -l msps1 -i "resource=msp,type=exclude, \"vios_names=\"\"vios1/9.1.2.3,9.1.2.4\"\",vios2/9.1.2.5\""

      Add VIOSs to a VIOS group label:

      labelvios -m sys1 -o s -l vcsiGroupA -i "\"vios_names+=vios2,vios3\""

      Remove an IP address from a VIOS MSP group label:

      labelvios -m sys1 -o s -l msps1 -i "vios_names-=vios1/9.1.2.3"

      Change the name of a VIOS group label:

      labelvios -m 9080-HEX*1234567 -o s -l label1 -i "new_name=vfclabel"

      Change the default VIOS MSP group label override:

      labelvios -m sys1 -o s -i "msp_label_override=1"

      Remove the FC port label for FC port **fc0** on the VIOS with ID **1**:

      labelvios -m sys -o r -i "resource=fcport,port_name=fc0,vios_ids=1"

      Remove the VIOS group label **msps1**:

      labelvios -m sys1 -o r -l msps1

      Remove all VIOS MSP group labels:

      labelvios -m sys1 -o r -i "resource=msp"

ENVIRONMENT
      None

BUGS
      None

AUTHOR
      IBM Austin

SEE ALSO
      lslabelvios

NAME

logssh - log ssh command usage

SYNOPSIS

logssh

DESCRIPTION

logssh is a script that can be added to a user's **authorized_keys2** file to restrict a user from being able to open a pseudo-tty using ssh. Furthermore, it will log all commands executed by the user in syslog. This command is not intended to be run interactively.

Note: The logssh **${SSH_ORIGINAL_COMMAND}** argument has been deprecated and will be ignored if passed to the script.

EXAMPLES

Use the command **mkauthkeys** to update a user's **authorized_keys2** file:

mkauthkeys -a -u john ´command="logssh"
ssh-rsa AAAAB3NzaC1yc2EAAAABIwAAAIEAzxTNjoX
AvyZBw390oJ27uj90PxZNtUWhYVN1/kaAfilSIr3z5Hhm7BdaaarU
ru94qhiM0xds6cgQpNUQUy6GByoWDrNhdEIdAzXj3uaPscY6wKkNi
a0llTJPUoBDBsadaa4oEc0/4poNG/X3uYrsdnbbMNkt/jmnEilSXI
gOEmWk= john@somehost´

The above command updates user **john**'s **authorized_keys2** file on the HMC, so that all commands executed by **john** will be logged in syslog.

ssh john@somehmc lshmc -V

The above command will result in the following entries being logged in **/var/log/messages**:

Nov 28 15:08:14 somehmc hmc_ssh: john login on Tue Nov 28
15:08:14 CST 2006 from 192.168.128.125
Nov 28 15:08:14 somehmc hmc_ssh: john runs lshmc -V on
Tue Nov 28 15:08:14 CST 2006 from 192.168.128.125

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

NAME

  lpar_netboot - retrieve MAC address and physical location code from network adapters for a partition or instruct a partition to network boot

SYNOPSIS

  To retrieve MAC address and physical location code:

   lpar_netboot -M -n [**-v**] [**-x**] [**-f**] [**-i**] [**-E** *environment* [**-E** ...]]
     [**-A**] **-t ent** [**-T** {**on**|**off**}] [**-D -s** *speed* **-d** *duplex*
     -S *server* **-G** *gateway* **-C** *client* [**-K** *subnetmask*]
     [**-V** *vlan_tag*] [**-Y** *vlan_priority*]]
     partition-name partition-profile managed-system

  To perform network boot:

   lpar_netboot [**-v**] [**-x**] [**-f**] [**-i**] [**-E** *environment* [**-E** ...]]
     [**-g** *args*] [{**-A -D** | [**-D**] **-l** *physical-location-code* |
     [**-D**] **-m** *MAC-address*}] **-t ent** [**-T** {**on**|**off**}]
     -s *speed* **-d** *duplex* **-S** *server* **-G** *gateway* **-C** *client*
     [**-K** *subnetmask*] [**-V** *vlan_tag*] [**-Y** *vlan_priority*]
     [[**-a -B** *tftp_image_filename*] |
     -B *bootp_image_filename*]
     [**-y** *bootp_retry_count*] [**-z** *tftp_retry_count*]
     partition-name partition-profile managed-system

  To retrieve MAC address and physical location code on a system supporting a full system partition:

   lpar_netboot -M -n [**-v**] [**-x**] [**-f**] [**-i**] [**-E** *environment* [**-E** ...]]
     [**-A**] **-t ent** [**-T** {**on**|**off**}] [**-D -s** *speed* **-d** *duplex*
     -S *server* **-G** *gateway* **-C** *client* [**-K** *subnetmask*]
     [**-V** *vlan_tag*] [**-Y** *vlan_priority*]]
     managed-system managed-system

  To perform network boot on a system supporting a full system partition:

   lpar_netboot [**-v**] [**-x**] [**-f**] [**-i**] [**-E** *environment* [**-E** ...]]
     [**-g** *args*] [{**-A -D** | [**-D**] **-l** *physical-location-code* |
     [**-D**] **-m** *MAC-address*}] **-t ent** [**-T** {**on**|**off**}]
     -s *speed* **-d** *duplex* **-S** *server* **-G** *gateway* **-C** *client*
     [**-K** *subnetmask*] [**-V** *vlan_tag*] [**-Y** *vlan_priority*]
     [[**-a -B** *tftp_image_filename*] |
     -B *bootp_image_filename*]
     [**-y** *bootp_retry_count*] [**-z** *tftp_retry_count*]
     managed-system managed-system

DESCRIPTION

  lpar_netboot instructs a logical partition to network boot by having it send out a bootp request to a server specified with the **-S** option. The server can be an AIX NIM server serving SPOT resources or any server serving network boot images. If specified with the **-M** and **-n** options, **lpar_netboot** will return the Media Access Control (MAC) address and the physical location code for a network adapter of the type specified with the **-t** option. When the **-m** option is specified, **lpar_netboot** will boot a partition using the network adapter which has the specified MAC address. When the **-l** option is specified, **lpar_netboot** will boot a partition using the network adapter which has the specified physical location code. The MAC address and physical location code of a network adapter is dependent upon the hardware resource allocation in the partition profile the partition was booted with. The **lpar_netboot** command requires arguments for partition name, partition profile, and the name of the managed system which has the partition.

  Please note:

  If the managed system is in co-management mode (set with *is_controller=1*) when listed with the **lscomgmt** command, the partition profile value will need to be blanked out with "". The **lpar_netboot**

command will also ignore the partition profile value if its managed system is in co-management mode.

OPTIONS

-A	Return all adapters of the type specified with the **-t** option.
-B	Network boot image filename, required option if IPv6 addresses.
-C	The IP address of the partition to network boot.
-D	Perform a ping test and use the adapter that successfully pings the server specified with the **-S** option.
-E	Set environment variable setting. The **-E LPAR_NETBOOT_DEBUG=1** is the same as **export LPAR_NETBOOT_DEBUG=1**. See **ENVIRONMENT**.
-G	The gateway IP address of the partition specified with the **-C** option.
-K	Subnetmask IP address.
-M	Discover network adapter MAC address and physical location code.
-S	The IP address of the machine from which to retrieve the network boot image during network boot.
-T	Enable or disble firmware spanning tree discovery. Valid values are **on**, **off**.
-V	Specifies the VLAN tag identifier to use for tagging Ethernet frames during network install for virtual network communication. Valid value is from **0** to **4094**.
-Y	Specifies the VLAN tag priority to use for tagging Ethernet frames during network install for virtual network communication. Valid value is from **0** to **7**.
-a	Network ip addresses for server, client and gateway are IPv6.
-d	The duplex setting of the partition specified with the **-C** option. Valid values are **full**, **half**, and **auto**.
-f	Force close the virtual terminal session for the partition.
-g	Specify generic arguments for booting the partition.
-i	Force immediate shutdown of the partition. If this option is not specified, a delayed shutdown will be performed.
-l	The physical location code of the network adapter to use for network boot.
-m	The MAC address of the network adapter to use for network boot.
-n	Instruct the partition to not network boot.
-s	The speed setting of the partition specified with the **-C** option. Valid values are **10**, **100**, **1000**, and **auto**.
-t	The type of adapter for MAC address or physical location code discovery or for network boot. The only valid value is **ent** for ethernet.
-v	Display additional information during command execution.
-x	Display debug output during command execution.
-y	Specifies the maximum number of BOOTP retry attempts. Valid value is from **0** to **9** (optional). The default value is **5**.
-z	Specifies the maximum number of TFTP retry attempts. Valid value is from **0** to **9** (optional). The default value is **5**.

partition-name

The name of the partition.

partition-profile
　　　　The name of the partition profile.

managed-system
　　　　The name of the managed system which has the partition.

--help　　Display the help text for this command and exit.

EXAMPLES

To retrieve the MAC address and physical location code for partition **machA** with partition profile **machA_prof** on managed system **test_sys**:

lpar_netboot -M -n -t ent "machA" "machA_prof" "test_sys"

To network boot the partition **machA** with partition profile **machA_prof** on managed system **test_sys**:

lpar_netboot -t ent -s auto -d auto -S 9.3.6.49 -G 9.3.6.1 -C 9.3.6.234 "machA" "machA_prof" "test_sys"

To network boot the partition **machA** using the network adapter with a MAC address of 00:09:6b:dd:02:e8 with partition profile **machA_prof** on managed system **test_sys**:

lpar_netboot -t ent -m 00096bdd02e8 -s auto -d auto -S 9.3.6.49 -G 9.3.6.1 -C 9.3.6.234 "machA" "machA_prof" "test_sys"

To network boot the partition **machA** using the network adapter with a physical location code of **U1234.121.A123456-P1-T6** with partition profile **machA_prof** on managed system **test_sys**:

lpar_netboot -t ent -l U1234.121.A123456-P1-T6 -s auto -d auto -S 9.3.6.49 -G 9.3.6.1 -C 9.3.6.234 "machA" "machA_prof" "test_sys"

To perform a ping test along with a network boot of the partition **machA** with partition profile **machA_prof** on managed system **test_sys**:

lpar_netboot -t ent -D -s auto -d auto -S 9.3.6.49 -G 9.3.6.1 -C 9.3.6.234 "machA" "machA_prof" "test_sys"

To perform ping test along with a network boot of the partition **machA** with partition profile **machA_prof** on managed system **test_sys** and disable firmware spanning tree discovery:

lpar_netboot -t ent -T off -D -s auto -d auto -S 9.3.6.49 -G 9.3.6.1 -C 9.3.6.234 "machA" "machA_prof" "test_sys"

ENVIRONMENT

INSTALLIOS_DEBUG
　　　　The installios command used this environment variable to print out lpar_netboot debug.

LPAR_NETBOOT_3EXEC
　　　　Executing OF "dev /" and "ls" returns nothing, retry reboot and "ls".

LPAR_NETBOOT_DEBUG
　　　　Setting this variable will enable lpar_netboot debug. Similar to -x flag.

LPAR_NETBOOT_DEBUG_BOOT
　　　　Setting this variable will initate the firmware boot command with -s trap.

LPAR_NETBOOT_ADD_TIMEOUT
>   Extend timeout value by 5 seconds. Ex. LPAR_NETBOOT_ADD_TIMEOUT=5

LPAR_NETBOOT_SUB_TIMEOUT
>   Lower timeout value by 8 seconds. Ex. LPAR_NETBOOT_SUB_TIMEOUT=8

LPAR_NETBOOT_SPANNING_TREE
>   LPAR_NETBOOT_SPANNING_TREE=on enable spanning tree, LPAR_NETBOOT_SPAN-
>   NING_TREE=off disable spanning tree. Similar to the -T flag.

OPEN_DEV_DEBUG
>   Show firmware OPEN_DEV debug by setting value to yes.

FIRMWARE_DUMP
>   Show firmware dump for firmware debugging by setting value to yes.

BUGS
>   None

AUTHOR
>   IBM Austin

SEE ALSO
>   **chsysstate**, **lssyscfg**, **mkvterm**, **rmvterm**

NAME

      lpardbg - collect partition debug data

SYNOPSIS

      To collect Virtual I/O Server (VIOS) debug data and send it to a remote server or save it on the Hardware Management Console (HMC) hard disk:

          lpardbg -o c -t vios -m *managed-system*

              {**-p** *VIOS-name* | **--id** *VIOS-ID* | **--all**}

              [**-r** {**ftp** | **sftp**} **-h** *host-name* **-u** *user-ID*

              [**--passwd** *password*] [**-k** *SSH-private-key*]

              [**-d** *directory*] [**-c** *IBM-case-number*]] [**--help**]

      To send collected VIOS debug data to a remote server:

          lpardbg -o s -f *file* **-r** {**ftp** | **sftp**}

              -h *host-name* **-u** *user-ID*

              [**--passwd** *password*] [**-k** *SSH-private-key*]

              [**-d** *directory*] [**-c** *IBM-case-number*] [**--help**]

      To remove collected VIOS debug data from the HMC hard disk:

          lpardbg -o r -f *file* [**--help**]

DESCRIPTION

      lpardbg collects debug data from Virtual I/O Server (VIOS) partitions on the managed system and sends the debug data to a remote server.

OPTIONS

      -o   The operation to perform. Valid values are **c** to collect debug data and send it to a remote server or save it on the HMC hard disk, **s** to send debug data that was already collected to a remote server, and **r** to remove collected debug data files from the HMC hard disk.

                Debug data files that are successfully sent to a remote server are automatically removed from the HMC hard disk.

      -t   The type of partitions from which to collect debug data. The only valid value is **vios** to collect debug data from Virtual I/O Servers.

      -m   The name of the managed system which has the VIOSs from which to collect debug data. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

      -p   The name of one or more VIOSs from which to collect debug data. Multiple VIOS names must be comma separated.

                You can either use this option to specify the names of the VIOSs from which to collect debug data, the **--id** option to specify the IDs of the VIOSs from which to collect debug data, or the **--all** option to collect debug data from all VIOSs on the *managed-system*. The **-p**, **--id**, and **--all** options are mutually exclusive.

      --id   The ID of one or more VIOSs from which to collect debug data. Multiple VIOS IDs must be comma separated.

                You can either use this option to specify the IDs of the VIOSs from which to collect debug data, the **-p** option to specify the names of the VIOSs from which to collect debug data, or the **--all** option to collect debug data from all VIOSs on the *managed-system*. The **--id**, **-p**, and **--all** options are mutually exclusive.

--all   Specify this option to collect debug data from all VIOSs on the *managed-system*.

You can either use this option, the **-p** option to specify the names of the VIOSs from which to collect debug data, or the **--id** option to specify the IDs of the VIOSs from which to collect debug data. The **--all**, **-p**, and **--id** options are mutually exclusive.

-r   The remote location where the debug data will be sent. Valid values are **ftp** for a FTP server and **sftp** for a secure FTP (SFTP) server.

If this option is omitted when **-o c** is specified, the collected debug data will only be saved on the HMC hard disk.

-h   The host name or IP address of the remote server.

-u   The user ID to use to log in to the remote server.

--passwd
               The password to use to log in to the remote server.

If this option is omitted when sending debug data to a remote FTP server, you will be prompted to enter the password. If both this option and the **-k** option are omitted when sending debug data to a remote SFTP server, you will be prompted to enter the password. The **--passwd** and **-k** options are mutually exclusive.

-k   The name of the file that contains the SSH private key. If the file name is not fully qualified, the file must exist in the user's home directory on the HMC.

Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen** command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so when you run the command on the HMC, you must specify both the directory and the file name for the private key. If you generate a key with a passphrase, you will be prompted to enter the passphrase when you run any HMC command that uses the key.

If both this option and the **--passwd** option are omitted when sending debug data to a remote SFTP server, you will be prompted to enter the password. The **-k** and **--passwd** options are mutually exclusive.

This option is only valid when sending debug data to a remote SFTP server.

-d   The name of the directory on the remote server where the debug data files will be written. If this option is not specified, the files will be written to the user's home directory.

-f   The name of one or more debug data files to send or remove. Multiple file names must be comma separated.

-c   The IBM case number to include with the debug data files when sending the debug data to IBM support.

This option is only valid when sending debug data to a remote SFTP server.

--help   Display the help text for this command and exit.

EXAMPLES

Collect and send debug data from **vios1** and **vios2** to a remote SFTP server:

lpardbg -o c -t vios -m sys1 -p vios1,vios2 -r sftp -h sftpserver
-u sftpuser --passwd password -c TS123456789

Collect and send debug data from all VIOSs on the managed system to a remote SFTP server using SSH keys for authentication:

**lpardbg -o c -t vios -m 9119-MME*1234567 --all -r sftp -h sftpserver
 -u sftpuser -k /home/hmcuser/keys/id_rsa**

Send debug data files to a remote FTP server (you will be prompted to enter the password):

**lpardbg -o s -f 1_9119-MME*1234567_2022-04-28T16:26:58.297Z -r ftp
 -h ftpserver -u ftpuser**

Remove debug data files from the HMC hard disk:

**lpardbg -o r -f 1_9119-MME*1234567_2022-04-28T16:26:58.297Z,
 2_9119-MME*1234567_2022-04-28T16:26:58.297Z**

ENVIRONMENT
　　　None

BUGS
　　　None

AUTHOR
　　　IBM Austin

SEE ALSO
　　　lslpardbg

NAME

lpcfgop - perform a partition configuration image operation

SYNOPSIS

lpcfgop -m *managed-system* **-o** {**clear** | **dump**} [**--help**]

DESCRIPTION

lpcfgop clears or dumps partition configuration data on the *managed-system*.

OPTIONS

-m   The name of the managed system on which to perform the operation. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

-o   The operation to perform. Valid values are **clear** or **dump**.

The **clear** operation clears all partition configuration data on the *managed-system* and sets the configuration back to its original state. This operation can only be performed when the *managed-system* is in the Standby state.

The **dump** operation dumps all partition configuration data on the *managed-system* to a file. The file is written to the **/tmp** directory on the Hardware Management Console (HMC).

--help   Display the help text for this command and exit.

EXAMPLES

Clear the partition configuration data (confirmation will be required):

lpcfgop -m sys1 -o clear

Dump the partition configuration data to a file in **/tmp**:

lpcfgop -m 9406-520*100132A -o dump

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

NAME
        lsaccfg - list access control configuration information

SYNOPSIS
        lsaccfg -t {**resource** | **resourcerole** | **taskrole** | **autoresource** |
                autoresourcerole}
         [**--script**] [**--filter** "*filter-data*"]
         [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
        lsaccfg lists managed resource objects, managed resource roles, task roles, automatically added managed
        resource objects, or the automatic managed resource role update setting.

OPTIONS
        -t   The type of access control objects to list. Valid values are **resource** for managed resource objects,
                        resourcerole for managed resource roles, **taskrole** for task roles, **autoresource** for automatically
                        added managed resource objects, and **autoresourcerole** for the automatic managed resource role
                        update setting.

        --script
                        List managed resource objects in a format that can be used as input to the **chaccfg**, **chhmcusr**, and
                        mkaccfg commands.

                        This option is only valid when listing managed resource objects or automatically added managed
                        resource objects.

        --filter   The filter to apply to the access control objects to be listed. A filter is used to select which access
                        control objects of the specified type are to be listed. If a filter is not used, then all of the access
                        control objects of the specified type will be listed. For example, specific task roles can be listed by
                        using a filter to specify the names of the task roles to list. Otherwise, if no filter is used, then all of
                        the task roles on this Hardware Management Console (HMC) will be listed.

                        The filter data consists of filter name/value pairs, which are in comma separated value (CSV) for-
                        mat. The filter data must be enclosed in double quotes.

                        The format of the filter data is as follows:

                        "*filter-name=value,filter-name=value,...*"

                        Note that certain filters accept a comma separated list of values, as follows:

                        ""*filter-name=value,value,...*",..."

                        When a list of values is specified, the filter name/value pair must be enclosed in double quotes.
                        Depending on the shell being used, nested double quote characters may need to be preceded by an
                        escape character, which is usually a '\' character.

                        Multiple values can be specified for each filter.

                        Valid filter names for managed resource objects:
                            resource_type
                                Specify resource type(s):
                                    cec - managed system objects
                                    lpar - partition objects

                        Valid filter names for managed resource roles:
                            resourceroles

Specify managed resource role name(s)

Valid filter names for task roles:
> **taskroles**
> > Specify task role name(s)

Valid filter names for automatically added managed resource objects:
> **resourceroles**
> > Specify managed resource role name(s)

This option is only valid when listing managed resource objects, managed resource roles, task roles, or automatically added managed resource objects.

-F A delimiter separated list of attribute names for the desired attribute values to be displayed for each access control object. If no attribute names are specified, then values for all of the attributes for each access control object will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
> Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help Display the help text for this command and exit.

EXAMPLES
List all managed resource objects on this HMC:

lsaccfg -t resource

List only managed partition objects on this HMC:

lsaccfg -t resource --filter "resource_type=lpar"

List all managed resource roles on this HMC:

lsaccfg -t resourcerole

List the managed resource role lpar_role:

lsaccfg -t resourcerole --filter "resourceroles=lpar_role"

List only the names and parents of the task roles on this HMC, and separate the output values with a colon:

lsaccfg -t taskrole -F name:parent

List the task roles tr1 and tr2:

lsaccfg -t taskrole --filter ""taskroles=tr1,tr2""

List all managed resource objects on this HMC that were automatically added:

lsaccfg -t autoresource

List the automatic managed resource role update setting on this HMC:

lsaccfg -t autoresourcerole

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
chaccfg, **mkaccfg**, **rmaccfg**, **chhmcusr**, **lshmcusr**

NAME
lsbmccert - list BMC certificates

SYNOPSIS
lsbmccert [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
lsbmccert lists the Baseboard Management Controller (BMC) and Enterprise BMC certificates stored on the Hardware Management Console (HMC).

OPTIONS
-F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES
List all of the BMC and Enterprise BMC certificates stored on this HMC:

lsbmccert

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
chbmccert, **getfile**

NAME

      lscod - list Capacity on Demand information

SYNOPSIS

      lscod -t {**bill** | **cap** | **code** | **hist** | **util**}

     -m *managed-system*

     [**-c** {**cuod** | **metered** | **mobile** | **onoff** | **trial** | **trialexc** | **trialstd** |
        utility | **utilityen** | **aixupdateacc** | **updateacc** | **vsn**}]

     [**-r** {**mem** | **proc**}]

     [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

      lscod lists Capacity on Demand (CoD) information for the *managed-system*.

OPTIONS

      -t   The type of CoD information to list. Valid values are **bill** for Elastic CoD billing information, **cap** for CoD capacity information, **code** for information used to generate CoD codes, **hist** for the CoD history log, and **util** for shared processor pool utilization information.

                  The time stamps shown when listing the CoD history log are managed system time stamps.

      -m   The name of the managed system for which CoD information is to be listed. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm**sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm**sssssss form must be used if there are multiple managed systems with the same user-defined name.

      -c   The CoD type. Valid values are **cuod** for CUoD (permanent), **metered** for Power enterprise pools 2.0, **mobile** for Mobile CoD, **onoff** for Elastic CoD, **trial** for Trial CoD, **utility** for Utility CoD or Utility CoD reporting codes, **utilityen** for Utility CoD enablement codes, **trialexc** for Trial CoD exception request codes, **trialstd** for Trial CoD standard request codes, **aixupdateacc** for AIX update access key codes, **updateacc** for system firmware update access key codes, and **vsn** for virtual serial number activation codes.

                  This option is required when listing CoD capacity information, CoD code generation information, or shared processor pool utilization information. This option is not valid when listing the CoD history log.

                  To list Trial CoD capacity information, specify **trial** with this option. To list Trial CoD code generation information, specify **trialexc** or **trialstd** with this option.

                  To list Utility CoD capacity information, specify **utility** with this option. To list Utility CoD code generation information, specify **utility** for Utility CoD reporting codes or **utilityen** for Utility CoD enablement codes.

                  metered, **mobile**, **aixupdateacc**, **updateacc**, and **vsn** can only be specified when listing CoD code generation information.

      -r   The CoD resource type. Valid values are **mem** for memory and **proc** for processors.

                  This option is required when listing Elastic CoD billing information, CoD capacity information, CoD code generation information, or shared processor pool utilization information. This option is not valid when listing the CoD history log.

      -F   A delimiter separated list of attribute names representing the desired CoD attribute values to display. If this option is specified without any attribute names, then all of the CoD attributes for the type of CoD listing specified will be displayed.

                  When this option is specified, only attribute values will be displayed. No attribute names will be

displayed. The attribute values displayed will be separated by the delimiter which was specified
with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of
only selected attributes are desired to be displayed.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute val-
ues that will be displayed. This header record will be the first record displayed. This option is
only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES
Display Elastic CoD processor billing information:

lscod -m sys1 -t bill -r proc -c onoff

Display CUoD processor capacity information:

lscod -m 9406-570*98127634 -t cap -r proc -c cuod

Display Trial CoD memory capacity information:

lscod -m 9406-570*98127634 -t cap -r mem -c trial

Display the current number of unreturned Elastic CoD processors:

lscod -m sys1 -t cap -r proc -c onoff -F
 unreturned_onoff_procs

Display Utility CoD capacity information:

lscod -m sys1 -t cap -r proc -c utility

Display CUoD processor activation code generation information:

lscod -m sys1 -t code -r proc -c cuod

Display Utility CoD reporting code generation information:

lscod -m 9117-MMA*1234321 -t code -r proc -c utility

Display the CoD history log:

lscod -m 9406-570*98127634 -t hist

Display shared processor pool utilization information for Utility CoD:

lscod -m sys1 -t util -r proc -c utility

ENVIRONMENT
None

BUGS
None

AUTHOR
       IBM Austin
SEE ALSO
       chcod, **lshwres**

NAME

      lscodpool - list CoD Power enterprise pool information

SYNOPSIS

      To list Power enterprise pool information:

          lscodpool --level pool [{**-p** *pool-name* | **--id** *pool-ID*}]

              [**-F** [*attribute-names*] [**--header**]] [**--help**]

      To list the systems in a Power enterprise pool:

          lscodpool --level sys {**-p** *pool-name* | **--id** *pool-ID*}

              [**--filter** "*filter-data*"]

              [**-F** [*attribute-names*] [**--header**]] [**--help**]

      To list the Hardware Management Consoles (HMC)s managing a Power enterprise pool:

          lscodpool --level mc {**-p** *pool-name* | **--id** *pool-ID*}

              [**-F** [*attribute-names*] [**--header**]] [**--help**]

      To list a CoD history log:

          lscodpool -t hist

                  {**-p** *pool-name* | **--id** *pool-ID* | **-m** *managed-system*}

                  [**-F** [*attribute-names*] [**--header**]] [**--help**]

      To list CoD code generation information:

          lscodpool -t code -m *managed-system*

              -r {**mem** | **proc** | **member** | **convertmem** | **convertproc**}

              [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

      lscodpool lists Capacity on Demand (CoD) Power enterprise pool information.

OPTIONS

      --level   The level of the Power enterprise pool information to list. Valid values are **pool** to list pool infor-
                  mation, **sys** to list the systems in a pool, and **mc** to list the HMCs managing a pool.

      -p   The name of the Power enterprise pool for which to list information.

                  You can either use this option to specify the name of the pool, or use the **--id** option to specify the
                  pool's ID. The **--id** option must be used if there are multiple Power enterprise pools with the same
                  name. The **-p** and the **--id** options are mutually exclusive.

      --id   The ID of the Power enterprise pool for which to list information.

                  You can either use this option to specify the ID of the pool, or use the **-p** option to specify the
                  pool's name. The **--id** option must be used if there are multiple Power enterprise pools with the
                  same name. The **--id** and the **-p** options are mutually exclusive.

      -m   The name of the managed system for which to list information. The name may either be the user-
                  defined name for the managed system, or be in the form *tttt*-*mmm**sssssss, where *tttt* is the
                  machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The
                  tttt-*mmm**sssssss form must be used if there are multiple managed systems with the same user-
                  defined name.

                  This option is only valid when listing the CoD history log for a managed system or listing CoD
                  code generation information.

      -t   The type of information to list. Specify **code** to list CoD code generation information for Power
                  enterprise pool membership codes, Mobile CoD processor or memory activation codes, or perma-
                  nent to Mobile CoD processor or memory conversion codes. Specify **hist** to list the CoD history
                  log for a managed system or for a Power enterprise pool.

When listing the CoD history log for a managed system, the time stamps shown are managed system time stamps. When listing the CoD history log for a Power enterprise pool, the time stamps shown are time stamps from the HMCs that logged the entries.

-r The resource type of the CoD code for which to list code generation information. Valid values are **mem** for Mobile CoD memory, **proc** for Mobile CoD processor, **member** for Power enterprise pool membership, **convertmem** for permanent to Mobile CoD memory conversion, and **convertproc** for permanent to Mobile CoD processor conversion.

--filter The filter to apply to the systems in the Power enterprise pool to list. The filter is used to select which systems in the pool to list. If a filter is not specified, then all systems in the pool will be listed.

The filter data consists of filter name/value pairs, which are in comma separated value (CSV) format. The filter data must be enclosed in double quotes.

The format of the filter data is as follows:

"*filter-name=value*"

Note that the filters accept a comma separated list of values, as follows:

""*filter-name=value,value,...*""

When a list of values is specified, the filter name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

Multiple values can be specified for each filter.

Valid filter names:
    names | **mtms**

This option is only valid when listing the systems in a Power enterprise pool.

-F A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help Display the help text for this command and exit.

EXAMPLES
List all of the Power enterprise pools managed by this HMC:

lscodpool --level pool

List all of the systems in the Power enterprise pool **myPool**:

lscodpool --level sys -p myPool

List only systems **sys1** and **sys2** in the Power enterprise pool with ID **0095**:

lscodpool --level sys --id 0095 --filter ""names=sys1,sys2""

List all of the HMCs managing the Power enterprise pool **myPool**:

lscodpool --level mc -p myPool

List the CoD history log for the Power enterprise pool **pool1**:

lscodpool -p pool1 -t hist

List the CoD history log for the managed system **mySys**:

lscodpool -m mySys -t hist

List the Power enterprise pool membership CoD code generation information for the managed system **s1**:

lscodpool -m s1 -t code -r member

ENVIRONMENT
　　None

BUGS
　　None

AUTHOR
　　IBM Austin

SEE ALSO
　　chcodpool, **mkcodpool**

NAME

lscomgmt - list co-management settings

SYNOPSIS

lscomgmt -m *managed-system* [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

lscomgmt lists co-management settings for the *managed-system*.

OPTIONS

-m   The name of the managed system for which to list co-management settings. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm**sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm**sssssss form must be used if there are multiple managed systems with the same user-defined name.

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header

Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES

List the co-management settings for managed system **sys1**:

lscomgmt -m sys1

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chcomgmt

NAME
lsdatarep - list data replication information

SYNOPSIS
lsdatarep -t {**data** | **local** | **source**} [**--filter "**_filter-data_**"**]
 [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
lsdatarep lists the data replication configuration and data replication status of the Hardware Management Console (HMC).

OPTIONS
-t   The type of information to list. Specify **data** to list the data replication data status on this HMC, **local** to list the data replication configuration and data replication status of this HMC, or **source** to list the data replication configuration and data replication status of source HMCs.

--filter   The filter to apply to the data replication source HMCs to be listed. The filter is used to select which source HMCs to list. If no filter is used, then all source HMCs will be listed.

The filter data consists of a filter name/value pair, which is in comma separated value (CSV) format. The filter data must be enclosed in double quotes.

The format of the filter data is as follows:

"_filter-name=value_**"**

Note that the filters accept a comma separated list of values, as follows:

""_filter-name=value**,**value**,**..._**""**

When a list of values is specified, the filter name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

Valid filter names:
    hmc_names
        Specify one or more HMC names.

This option is only valid when listing the data replication configuration and data replication status of source HMCs.

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES

List the data replication data status on this HMC:

lsdatarep -t data

List the data replication configuration and data replication status of this HMC:

lsdatarep -t local

List the data replication configuration and data replication status of the source HMCs **hmc1** and **hmc2**::

lsdatarep -t source --filter ""hmc_names=hmc1,hmc2""

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chdatarep

NAME
> lsdump - list dump information

SYNOPSIS
> To list the dumps that are available on a managed system:
> > **lsdump -m** *managed-system* [**-r avail**] [**-s** {**p** | **s**}]
> > > [**-F** [*attribute-names*] [**--header**]]
>
> To list the managed system dumps that are available on the HMC:
> > **lsdump -h** [**-r avail**] [**--filter "***filter-data***"**]
> > > [**-F** [*attribute-names*] [**--header**]]
>
> To list the system dump parameters:
> > **lsdump -m** *managed-system* **-r parm**
> > > [**-F** [*attribute-names*] [**--header**]]

DESCRIPTION
> **lsdump** lists the dumps that are available on the *managed-system*. **lsdump** can also list the managed system dumps that are available on the Hardware Management Console (HMC).
>
> **lsdump** also lists the system dump parameters for the *managed-system*.
>
> The **getdump** command can be used to offload an available dump from the *managed-system* to the HMC.
>
> The **cpdump** command can be used to copy a dump from the HMC to a remote FTP site or removable media.
>
> The **rmdump** command can be used to remove a dump from the HMC.

OPTIONS
> **-m**   The name of the managed system for which available dumps or system dump parameters are to be listed. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.
>
> > Either this option or the **-h** option is required. The **-m** and **-h** options are mutually exclusive.
>
> **-h**   List the managed system dumps that are available on the HMC.
>
> > Either this option or the **-m** option is required. The **-h** and **-m** options are mutually exclusive.
>
> **-r**   The type of dump resources to list. Valid values are **avail** for available dumps, and **parm** for system dump parameters. If this option is not specified, available dumps will be listed.
>
> **-s**   When listing dumps that are available on a managed system, use this option to specify the service processor for which available dumps are to be listed. Valid values are **p** for the primary service processor and **s** for the secondary service processor. If this option is not specified, available dumps on the primary service processor will be listed. System dumps and resource dumps are only available from the primary service processor.
>
> > This option is not valid when listing the managed system dumps that are available on the HMC.
>
> **--filter**   The filter to apply to the available dumps to be listed. The filter is used to select the type of dump that is to be listed. If no filter is specified, then all of the available dumps will be listed.
>
> > The filter data consists of filter name/value pairs, which are in comma separated value (CSV) format. The filter data must be enclosed in double quotes.

The format of the filter data is as follows:

"*filter-name*=*value*,*filter-name*=*value*,..."

Valid filter names for this command:
  dump_type
      Only one value may be specified.
      Valid values are:
      sp   - service processor dumps
      sys   - system dumps
      resource - resource dumps

This option is not valid when listing the dumps that are available on a managed system or when listing the system dump parameters.

-F   A delimiter separated list of attribute names representing the desired dump attribute values to display. If this option is specified without any attribute names, then all of the dump attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
      Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES
List the dumps that are currently available from the primary service processor on the managed system **9406-520*100128A**:

lsdump -m 9406-520*100128A

List the dumps that are currently available from the secondary service processor on the managed system **sys1**:

lsdump -m sys1 -s s

List the managed system dumps that are currently available on the HMC:

lsdump -h

List only the managed system system dumps that are currently available on the HMC:

lsdump -h --filter "dump_type=sys"

List the system dump parameters for the managed system **sys1**:

lsdump -m sys1 -r parm

ENVIRONMENT

      None

BUGS

      None

AUTHOR

      IBM Austin

SEE ALSO

      cpdump, **dump**, **getdump**, **rmdump**, **startdump**

NAME
lsfru - list FRU information

SYNOPSIS
lsfru -t sp -m *managed-system*
 [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
lsfru lists selected service processor field-replaceable unit (FRU) information for the *managed-system*.

OPTIONS
-t   The type of FRUs to list. The only valid value is **sp** for primary and secondary service processors.

-m   The name of the managed system for which to list FRU information. The name may either be the user-defined name for the managed system, or be in the form *tttt*-*mmm**sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt*-*mmm**sssssss form must be used if there are multiple managed systems with the same user-defined name.

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed for each FRU. If no attribute names are specified, then values for all of the attributes for each FRU will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES
List the primary and secondary service processor FRU information for managed system **9117-MMA*1234321**:

lsfru -t sp -m 9117-MMA*1234321

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

NAME

　　　　lshmc - list Hardware Management Console configuration information

SYNOPSIS

　　　　lshmc {**-b** | **-D** | **-e** | **-h** | **-i** | **-l** | **-L** | **-n** | **-r** | **-v** | **-V** |

　　　　　　--bmc | **--boot** | **--firewall** | **--netbond** | **--netroute** |

　　　　　　--ntpserver | **--syslog** | **--userdefinfo**}

　　　　[**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

　　　　lshmc lists Hardware Management Console (HMC) configuration information. This command can be used to list the BIOS level, settings for the Event Manager for Call Home, hardware information, Integrated Management Module (IMM) settings, current locale, supported locales, network settings, remote access settings, Vital Product Data (VPD) information, version information, Baseboard Management Controller (BMC) settings, secure boot settings, firewall settings, network bond configuration, network routing information, Network Time Protocol (NTP) server information, syslog server configuration, and user-defined information for the HMC.

　　　　Only one of the following options can be specified at a time: **-b**, **-D**, **-e**, **-h**, **-i**, **-l**, **-L**, **-n**, **-r**, **-v**, **-V**, **--bmc**, **--boot**, **--firewall**, **--netbond**, **--netroute**, **--ntpserver**, **--syslog**, or **--userdefinfo**.

OPTIONS

　　　　-b　　　　List the BIOS level of the HMC.

　　　　-D　　　　List the preconfigured HMC DHCP server settings.

　　　　-e　　　　List the settings for the HMC's Event Manager for Call Home.

　　　　-h　　　　List HMC hardware information.

　　　　-i　　　　List the Integrated Management Module (IMM) settings for the HMC.

　　　　-l　　　　List the current locale for the HMC.

　　　　-L　　　　List all of the locales supported for the HMC.

　　　　-n　　　　List the network settings for the HMC.

　　　　　　　　　The **lshmcldap** command can be used to display information about LDAP configuration settings.

　　　　-r　　　　List the remote access settings for the HMC.

　　　　-v　　　　List the VPD information for the HMC.

　　　　-V　　　　List the version information for the HMC.

　　　　--bmc　List the Baseboard Management Controller (BMC) settings for the HMC.

　　　　--boot　List the secure boot settings for the HMC (Power HMC CR2 only).

　　　　--firewall

　　　　　　　　　List the enabled firewall settings for the HMC.

　　　　--netbond

　　　　　　　　　List the network bond configuration for the HMC.

　　　　--netroute

　　　　　　　　　List the network routing information for the HMC.

　　　　--ntpserver

　　　　　　　　　List information about the Network Time Protocol (NTP) servers configured on the HMC.

　　　　--syslog

　　　　　　　　　List the syslog server configuration for the HMC.

--userdefinfo
> List the user-defined information for the HMC.

-F   A delimiter separated list of attribute names representing the desired attribute values to display. If this option is specified without any attribute names, then all of the attributes for the type of HMC configuration information specified will be displayed.

> When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

> This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
> Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES
Display the HMC's BIOS level:

lshmc -b

Display the preconfigured HMC DHCP server IP addresses, network masks, and ranges:

lshmc -D

Display the settings for the HMC's Event Manager for Call Home:

lshmc -e

Display HMC hardware information:

lshmc -h

Display the HMC's IMM settings:

lshmc -i

Display the HMC's current locale:

lshmc -l

Display all locales supported by the HMC:

lshmc -L

Display the HMC's network settings:

lshmc -n

Display the HMC's host name and IP address, and separate the output values with a colon:

lshmc -n -F hostname:ipaddr

Display the HMC's remote access settings:

lshmc -r

Display the HMC's VPD information:

lshmc -v

Display the HMC's version information:

lshmc -V

Display the HMC's BMC settings:

lshmc --bmc

Display the secure boot settings for the HMC:

lshmc --boot

Display the enabled firewall settings for the HMC:

lshmc --firewall

Display the network bond configuration for the HMC:

lshmc --netbond

Display the network routing information for the HMC:

lshmc --netroute

Display HMC NTP server information:

lshmc --ntpserver

Display the syslog server configuration for the HMC:

lshmc --syslog

Display the user-defined information for the HMC:

lshmc --userdefinfo

ENVIRONMENT
    None

BUGS
    None

AUTHOR
    IBM Austin

SEE ALSO
    chhmc

NAME

      lshmcauth - list HMC multi-factor authentication settings

SYNOPSIS

      lshmcauth -t powersc [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

      lshmcauth lists multi-factor authentication (MFA) settings on the Hardware Management Console (HMC).

OPTIONS

      -t   The type of MFA settings to list. The only valid value is **powersc** to list PowerSC MFA settings.

      -F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

              When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

              This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

      --header

              Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

      --help   Display the help text for this command and exit.

EXAMPLES

      List the PowerSC MFA settings for the HMC:

      lshmcauth -t powersc

ENVIRONMENT

      None

BUGS

      None

AUTHOR

      IBM Austin

SEE ALSO

      chhmcauth

NAME
    lshmccert - list Hardware Management Console certificate information

SYNOPSIS
    lshmccert -t {**currcert** | **archivecert** | **trustedcert** | **fcs** | **config**}
     [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
    lshmccert lists Hardware Management Console (HMC) certificate information.

OPTIONS
    -t   The type of certificate information to list. Valid values are **currcert** to list the current certificate
               installed on this HMC, **archivecert** to list the previously archived certificate on this HMC, **trust-
               edcert** to list the certificates which have been added as trusted to this HMC's truststore, **fcs** to list
               the certificate on this HMC used for HMC to HMC communication, and **config** to list the default
               setting for the number of days until expiration for newly created certificates on this HMC.

    -F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no
               attribute names are specified, then values for all of the attributes will be displayed.

               When this option is specified, only attribute values will be displayed. No attribute names will be
               displayed. The attribute values displayed will be separated by the delimiter which was specified
               with this option.

               This option is useful when only attribute values are desired to be displayed, or when the values of
               only selected attributes are desired to be displayed.

    --header
               Display a header record, which is a delimiter separated list of attribute names for the attribute val-
               ues that will be displayed. This header record will be the first record displayed. This option is
               only valid when used with the **-F** option.

    --help   Display the help text for this command and exit.

EXAMPLES
    List the current certificate installed on this HMC:

    lshmccert -t currcert

    List the certificates added as trusted to this HMC's truststore:

    lshmccert -t trustedcert

    List the certificate on this HMC used for HMC to HMC communication:

    lshmccert -t fcs

    List the default setting for the number of days until expiration for newly created certificates on this HMC:

    lshmccert -t config

ENVIRONMENT
    None

BUGS
    None

AUTHOR
    IBM Austin

SEE ALSO
　　　chhmccert, **mkhmccert**

NAME
        lshmcencr - list HMC encryptions

SYNOPSIS
        lshmcencr -c {**passwd** | **webui** | **ssh** | **sshmac** | **sshkey**} **-t** {**c** | **a**}
        [**--filter "**_filter-data_**"**]
        [**-F** [_attribute-names_] [**--header**]] [**--help**]

DESCRIPTION
        lshmcencr lists the encryptions which are available and the one which is currently used by the Hardware
        Management Console (HMC) to encrypt the passwords of locally authenticated HMC users. The current
        encryption is used when a new locally authenticated HMC user is created, or when the password for a
        locally authenticated HMC user is changed.

        lshmcencr also lists the encryption ciphers which are available and those which can currently be used by
        the HMC Web user interface.

        lshmcencr also lists the encryption ciphers, Message Authentication Code (MAC) algorithms, and key
        exchange algorithms which are available and those which can currently be used by the HMC Secure Shell
        (SSH) interface.

OPTIONS
        -c   The encryption configuration to list. Valid values are **passwd** to list password encryptions for
                locally authenticated HMC users, **webui** to list encryption ciphers for the HMC Web user inter-
                face, **ssh** to list encryption ciphers for the HMC SSH interface, **sshmac** to list MAC algorithms for
                the HMC SSH interface, or **sshkey** to list key exchange algorithms for the HMC SSH interface.

        -t   The type of encryptions to list. Valid values are **c** for currently supported encryption(s), or **a** for all
                available encryptions.

        --filter The filter to apply to the HMC Web user interface encryption ciphers to be listed. A filter is used
                to select which encryption ciphers are to be listed. For example, only TLS version 1.2 encryption
                ciphers can be listed by using a filter to specify the TLS version. If a filter is not used, then all
                HMC Web user interface encryption ciphers will be listed.

                The filter data consists of filter name/value pairs, which are in comma separated value (CSV) for-
                mat. The filter data must be enclosed in double quotes.

                The format of the filter data is as follows:

                "_filter-name_=_value_**"**

                Valid filter names:
                    tls_version
                        Specify **1.2** or **1.3**

                This option is only valid when listing HMC Web user interface encryption ciphers.

        -F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no
                attribute names are specified, then values for all of the attributes will be displayed.

                When this option is specified, only attribute values will be displayed. No attribute names will be
                displayed. The attribute values displayed will be separated by the delimiter which was specified
                with this option.

                This option is useful when only attribute values are desired to be displayed, or when the values of
                only selected attributes are desired to be displayed.

--header
> Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES

List the encryption which is currently used by the HMC to encrypt user passwords when locally authenticated HMC users are created, or when the passwords for locally authenticated HMC users are changed:

lshmcencr -c passwd -t c

List all available HMC password encryptions:

lshmcencr -c passwd -t a

List the encryption ciphers which can currently be used by the HMC Web user interface:

lshmcencr -c webui -t c

List all available TLS 1.3 encryption ciphers for the HMC Web user interface:

lshmcencr -c webui -t a --filter "tls_version=1.3"

List the encryption ciphers which can currently be used by the HMC SSH interface:

lshmcencr -c ssh -t c

List all available encryption ciphers for the HMC SSH interface:

lshmcencr -c ssh -t a

List the MAC algorithms which can currently be used by the HMC SSH interface:

lshmcencr -c sshmac -t c

List all available MAC algorithms for the HMC SSH interface:

lshmcencr -c sshmac -t a

List the key exchange algorithms which can currently be used by the HMC SSH interface:

lshmcencr -c sshkey -t c

List all available key exchange algorithms for the HMC SSH interface:

lshmcencr -c sshkey -t a

ENVIRONMENT
> None

BUGS
> None

AUTHOR
       IBM Austin
SEE ALSO
       chhmcencr

NAME

  lshmcfs - list HMC file system information

SYNOPSIS

  lshmcfs [**-o c** {**-d** *days* | **-h** *hours* | **-s** *size*}]

  [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

  lshmcfs lists Hardware Management Console (HMC) file system disk space usage information. Disk space
  usage information is listed for the HMC file systems that can contain temporary HMC files used for HMC
  and managed system firmware problem analysis.

  This command lists information for the following file systems: **/var**, **/var/hsc/log**, **/dump**, **/extra**, **/data**,
  and **/.** The temporary files in the **/var** and **/var/hsc/log** file systems include HMC trace and log files. The
  temporary files in the **/dump** file system include managed system dumps, managed frame dumps, and
  debug data collected using the HMC **pedbg** command. The temporary files in the **/extra** file system
  include managed system dumps and managed frame dumps. The temporary files in the **/data** file system
  include HMC Java core dump and heap dump files, and service files called home with serviceable events.

  All size and free space values displayed by this command are in megabytes.

OPTIONS

  -o   The operation to perform. The only valid value is **c** to calculate and list the amount of disk space
          that can be freed in each file system by removing temporary HMC files from the hard disk.

          This command will not remove any files. The **chhmcfs** command can be used to remove the files.

          If this option is omitted, current disk space usage information is listed.

  -d   List the amount of space that can be freed if files, which have not been modified during the speci-
          fied number of *days* prior to now, were removed.

          To list the amount of space that can be freed if all temporary HMC files, other than the trace and
          log files that are in use, were removed, specify **0** with this option.

          Specifying **-d 1** is equivalent to specifying **-h 24**.

          When **-o c** is specified to calculate and list the amount of disk space that can be freed, this option,
          the **-h** option, or the **-s** option must be specified to indicate which files should be considered for
          removal. The **-d**, **-h**, and **-s** options are mutually exclusive.

  -h   List the amount of space that can be freed if files, which have not been modified during the speci-
          fied number of *hours* prior to now, were removed.

          To list the amount of space that can be freed if all temporary HMC files, other than the trace and
          log files that are in use, were removed, specify **0** with this option.

          When **-o c** is specified to calculate and list the amount of disk space that can be freed, this option,
          the **-d** option, or the **-s** option must be specified to indicate which files should be considered for
          removal. The **-d**, **-h**, and **-s** options are mutually exclusive.

  -s   List the amount of space that can be freed if files, starting with the oldest file, were removed from
          each file system to free up to *size* megabytes in each file system. The trace and log files that are in
          use would not be included.

          When **-o c** is specified to calculate and list the amount of disk space that can be freed, this option,
          the **-d** option, or the **-h** option must be specified to indicate which files should be considered for
          removal. The **-d**, **-h**, and **-s** options are mutually exclusive.

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed for each file system. If no attribute names are specified, then values for all of the file system attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES
List current HMC file system disk space usage information:

lshmcfs

List HMC file system disk space usage information if temporary HMC files which have not been modified during the last 2 days (48 hours) were removed:

lshmcfs -o c -d 2

List HMC file system disk space usage information if all temporary HMC files, except the trace and log files that are in use, were removed:

lshmcfs -o c -d 0

List HMC file system disk space usage information if temporary HMC files were removed to free up to 100 MB in each file system:

lshmcfs -o c -s 100

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
chhmcfs

NAME

lshmcldap - list LDAP information

SYNOPSIS

lshmcldap -r {**config** | **user**} [**-v**] [**--filter** "*filter-data*"]
 [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

lshmcldap lists Hardware Management Console (HMC) Lightweight Directory Access Protocol (LDAP) configuration information. **lshmcldap** can also list LDAP user information from the LDAP server.

OPTIONS

-r The LDAP resources to list. Valid values are **config** to list HMC LDAP configuration information, and **user** to list LDAP user information from the LDAP server.

-v When this option is specified, command execution details are output to stderr.

--filter The filter to apply to the LDAP users to be listed. The filter is used to select which LDAP users to list. If no filter is used, then all LDAP users will be listed.

The filter data consists of a filter name/value pair, which is in comma separated value (CSV) format. The filter data must be enclosed in double quotes.

The format of the filter data is as follows:

""*filter-name=value*,*value*,..."",..."

When a list of values is specified, the filter name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

Valid filter names:
 names
  Specify one or more user names.

LDAP users whose login attribute values match the names specified will be listed. Which login attribute to use can be configured using the **chhmcldap** command.

This option is only valid when listing LDAP user information.

-F A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
 Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help Display the help text for this command and exit.

EXAMPLES

List the HMC LDAP configuration:

lshmcldap -r config

List all LDAP users on the LDAP server:

lshmcldap -r user

List LDAP users **uname1** and **uname2** and output command execution details to stderr:

lshmcldap -r user --filter ""names=uname1,uname2"" -v

ENVIRONMENT
      None

BUGS
      None

AUTHOR
      IBM Austin

SEE ALSO
      chhmcldap, **lshmcusr**

NAME
> lshmcusr - list Hardware Management Console user information

SYNOPSIS
> **lshmcusr** [**-t** {**default** | **user**}] [**--script**] [**--filter "***filter-data***"**]
> [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
> **lshmcusr** lists Hardware Management Console (HMC) user information.

OPTIONS
> **-t**   The type of user information to be listed. Valid values are **default** to list the default settings of
>   HMC user attributes, and **user** to list HMC users. If this option is omitted, HMC users will be
>   listed.
>
>   When listing the default settings of HMC user attributes, only those default settings that can be
>   changed will be listed. Default settings of HMC user attributes can be changed using the **chhm-**
>   **cusr** command.
>
> **--script**
>   List managed resource objects in a format that can be used as input to the **chhmcusr**, **chaccfg**, and
>   **mkaccfg** commands.
>
>   This option is only valid when listing HMC users.
>
> **--filter** The filter to apply to the HMC users to be listed. A filter is used to select which HMC users are to
>   be listed. If a filter is not used, then all HMC users will be listed.
>
>   The filter data consists of filter name/value pairs, which are in comma separated value (CSV) for-
>   mat. The filter data must be enclosed in double quotes.
>
>   The format of the filter data is as follows:
>
>   "*filter-name=value*,*filter-name=value*,..."
>
>   Note that certain filters accept a comma separated list of values, as follows:
>
>   ""*filter-name=value*,*value*,...",..."
>
>   When a list of values is specified, the filter name/value pair must be enclosed in double quotes.
>   Depending on the shell being used, nested double quote characters may need to be preceded by an
>   escape character, which is usually a '\' character.
>
>   Multiple values can be specified for each filter.
>
>   Valid filter names for this command:
>   **names**
>   Specify user name(s)
>   **resources**
>   Specify managed resource object(s)
>   **resourceroles**
>   Specify managed resource role name(s)
>   **taskroles**
>   Specify task role name(s)
>   **password_encryptions**
>   Specify password encryption(s)

This option is only valid when listing HMC users.

-F A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help Display the help text for this command and exit.

EXAMPLES
List all HMC users:

lshmcusr

List only the user names and managed resource roles for all HMC users, and separate the output values with a colon:

lshmcusr -F name:resourcerole

List the HMC users hscroot and user1:

lshmcusr --filter ""names=hscroot,user1""

List the HMC users with the task role hmcviewer and the managed resource role mr1:

lshmcusr --filter "taskroles=hmcviewer,resourceroles=mr1"

List the user-settable default values for HMC user attributes:

lshmcusr -t default

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
chhmcusr, **mkhmcusr**, **rmhmcusr**, **lsaccfg**

NAME

 lshwinfo - list environmental information

SYNOPSIS

 lshwinfo -m *managed-system* **-t** {**fan** | **inv** | **power** | **temp**}
  [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

 lshwinfo lists environmental information for OpenPower managed systems.

OPTIONS

 -m   The name of the OpenPower managed system for which to list environmental information. The
        name may either be the user-defined name for the managed system, or be in the form *tttt-*
        mmm*sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number
        of the managed system. The *tttt-mmm**sssssss form must be used if there are multiple managed
        systems with the same user-defined name.

 -t   The type of environmental information to list. Valid values are **fan** for fan sensor, **inv** for system
        inventory, **power** for power sensor, and **temp** for temperature sensor information.

 -F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no
        attribute names are specified, then values for all of the attributes will be displayed.

        When this option is specified, only attribute values will be displayed. No attribute names will be
        displayed. The attribute values displayed will be separated by the delimiter which was specified
        with this option.

        This option is useful when only attribute values are desired to be displayed, or when the values of
        only selected attributes are desired to be displayed.

 --header
        Display a header record, which is a delimiter separated list of attribute names for the attribute val-
        ues that will be displayed. This header record will be the first record displayed. This option is
        only valid when used with the **-F** option.

 --help   Display the help text for this command and exit.

EXAMPLES

 Display temperature sensor information for the OpenPower managed system **bmcSys**:

 lshwinfo -m bmcSys -t temp

ENVIRONMENT

 None

BUGS

 None

AUTHOR

 IBM Austin

NAME

    lshwres - list hardware resources

SYNOPSIS

    To list physical I/O resources:

    lshwres -r io --rsubtype {**unit** | **bus** | **slot** |
        iopool | **taggedio** | **slotchildren**}
        -m *managed-system*
        [**--level** {**pool** | **sys**}] [**-R**]
        [**--filter** "*filter-data*"]
        [**-F** [*attribute-names*] [**--header**]] [**--help**]

    To list virtual I/O resources:

    lshwres -r virtualio
        --rsubtype {**eth** | **fc** | **virtualopti** | **scsi** | **serial** |
            slot | **vnetwork** | **vnic** | **vnicbkdev** | **vswitch**}
        -m *managed-system*
        [**--level** {**lpar** | **slot** | **sys**}]
        [**--filter** "*filter-data*"]
        [**-F** [*attribute-names*] [**--header**]] [**--help**]

    To list memory resources:

    lshwres -r mem -m *managed-system*
        --level {**lpar** | **sys**} [**-R**]
        [**--maxmem** *quantity* [**--hptratio** *ratio*]]
        [**--filter** "*filter-data*"]
        [**-F** [*attribute-names*] [**--header**]] [**--help**]

    To list I/O entitled memory statistics for a partition:

    lshwres -r mem -m *managed-system* **--level lpar**
        --filter "*filter-data*" **--stat**
        [**-F** [*attribute-names*] [**--header**]] [**--help**]

    To list shared memory pool resources:

    lshwres -r mempool -m *managed-system* [**--rsubtype pgdev**]
        [**--filter** "*filter-data*"]
        [**-F** [*attribute-names*] [**--header**]] [**--help**]

    To list reserved storage device pool resources (only supported on managed systems that support partition
    suspend and resume operations):

    lshwres -r rspool -m *managed-system* [**--rsubtype rsdev**]
        [**--filter** "*filter-data*"]
        [**-F** [*attribute-names*] [**--header**]] [**--help**]

    To list persistent memory resources:

    lshwres -r pmem -m *managed-system* [**--rsubtype volume**]
        [**--level** {**lpar** | **sys**}]
        [**--filter** "*filter-data*"]
        [**-F** [*attribute-names*] [**--header**]] [**--help**]

    To list processing resources:

    lshwres -r proc -m *managed-system*
        --level {**lpar** | **pool** | **sys**} [**-R**]
        [**--filter** "*filter-data*"]
        [**-F** [*attribute-names*] [**--header**]] [**--help**]

To list shared processor pool resources on a managed system that supports multiple shared processor pools:
  lshwres -r procpool -m *managed-system*
    [**--filter "***filter-data***"**]
    [**-F** [*attribute-names*] [**--header**]] [**--help**]

To list Single Root I/O Virtualization (SR-IOV) adapter resources:
  lshwres -r sriov -m *managed-system*
    --rsubtype {**adapter** | **logport** | **physport**}
    [**--level** {**eth** | **ethc** | **roce**}] [**-R**]
    [**--filter "***filter-data***"**]
    [**-F** [*attribute-names*] [**--header**]] [**--help**]

To list hardware accelerator resources:
  lshwres -r accel -m *managed-system*
    --level {**lpar** | **sys**} [**--rsubtype gzip**]
    [**--filter "***filter-data***"**]
    [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

  lshwres lists the hardware resources of the *managed-system*, including physical I/O, virtual I/O, memory, shared memory pool, persistent memory, processing, shared processor pool, Single Root I/O Virtualization (SR-IOV), and hardware accelerator resources.

OPTIONS

  -r   The type of hardware resources to list. Valid values are **io** for physical I/O, **virtualio** for virtual I/O, **mem** for memory, **mempool** for shared memory pool, **rspool** for reserved storage device pool, **pmem** for persistent memory, **proc** for processing, **procpool** for shared processor pool, **sriov** for SR-IOV, and **accel** for hardware accelerator resources.

      The **procpool** resource type is only supported for managed systems that support multiple shared processor pools.

      The **rspool** resource type is only supported for managed systems that support partition suspend and resume operations.

  --rsubtype
      The subtype of hardware resources to list. Valid physical I/O resource subtypes are **unit** for I/O units, **bus** for I/O buses, **slot** for I/O slots, **iopool** for I/O pools, **taggedio** for tagged I/O, and **slotchildren** for I/O slot children resources. Valid virtual I/O resource subtypes are **eth** for virtual ethernet, **fc** for virtual fibre channel, **virtualopti** for virtual OptiConnect, **scsi** for virtual SCSI, **serial** for virtual serial, **slot** for virtual slot, **vnetwork** for virtual network, **vnic** for virtual NIC, **vnicbkdev** for virtual NIC backing devices, and **vswitch** for virtual switch resources. Valid SR-IOV resource subtypes are **adapter** for SR-IOV adapter resources, **logport** for SR-IOV logical port resources, and **physport** for SR-IOV physical port resources. Valid persistent memory resource subtypes are **volume** for persistent memory volume resources. Valid hardware accelerator resource subtypes are **gzip** for GZIP hardware accelerator resources.

      The only valid shared memory pool resource subtype is **pgdev** for paging space devices. The only valid reserved storage device pool subtype is **rsdev** for reserved storage devices. On a managed system that supports Active Memory Sharing and partition suspend and resume operations, the command **lshwres -m** *managed-system* **-r mempool --rsubtype pgdev** lists the devices in the reserved storage device pool, and is equivalent to the command **lshwres -m** *managed-system* **-r rspool --rsubtype rsdev**.

      This option is required when listing physical I/O, virtual I/O, or SR-IOV resources. This option is not valid when listing memory, processing, or shared processor pool resources.

-m   The name of the managed system which has the hardware resources to list. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

--level   The level of information to list. Valid values are **lpar** for partition, **pool** for pool, **slot** for slot, **sys** for system, **eth** for ethernet, **ethc** for converged ethernet, and **roce** for RDMA over Converged Ethernet (RoCE).

           This option is required when listing I/O pool resources, virtual ethernet, virtual fibre channel, virtual serial, or virtual slot resources, memory or processing resources, SR-IOV physical ports, or hardware accelerator resources.

           Valid levels for I/O pool resources are **pool** or **sys**. Valid levels for virtual ethernet resources are **lpar** or **sys**. Valid levels for virtual fibre channel resources are **lpar** or **sys**. Valid levels for virtual serial resources are **lpar**. Valid levels for virtual slot resources are **lpar**, **slot**, or **sys**. Valid levels for virtual NIC resources are **lpar** or **sys**. Valid levels for memory resources are **lpar** or **sys**. Valid levels for persistent memory resources are **lpar** or **sys**. Valid levels for processing resources are **lpar**, **pool**, or **sys**. Valid levels for SR-IOV logical ports are **eth** or **roce**. Valid levels for SR-IOV physical ports are **eth**, **ethc** or **roce**. Valid levels for hardware accelerator resources are **lpar** or **sys**.

-R   Only list information for partitions with hardware resources that can be restored due to a dynamic logical partitioning (DLPAR) operation failure.

           The **rsthwres** command can be used to restore those hardware resources.

           This option is only valid for listing physical I/O slots, partition level memory or processing resources, or SR-IOV logical ports.

--maxmem
           When this option is specified, the required minimum memory amount needed for partitions to support the maximum memory *quantity* and Hardware Page Table *ratio* specified is listed. All memory quantities are in megabytes, and are a multiple of the memory region size for the *managed-system*.

           This information is useful for specifying memory amounts in partition profiles.

           The required minimum memory amount listed is the minimum memory amount required for a partition by the managed system's system firmware. An operating system installed on the partition may require more memory than the amount listed.

           This option is only valid when listing system level memory resources.

--hptratio
           The ratio of the Hardware Page Table (HPT) size to the maximum memory for a partition. Valid values for the *managed-system* are displayed by the **lshwres -r mem -m** *managed-system* **--level sys -F possible_hpt_ratios** command.

           If this option is not used to specify an HPT ratio, the default HPT ratio for the *managed-system* is used.

           This option is only valid when used with the **--maxmem** option.

--stat   When this option is specified when listing partition level memory resources, I/O entitled memory statistics are listed.

This option is only valid when listing partition level memory resources.

--filter The filter(s) to apply to the hardware resources to be listed. Filters are used to select which hardware resources of the specified type are to be listed. If no filters are used, then all of the hardware resources of the specified type will be listed. For example, all of the physical I/O slots on a specific I/O unit and bus can be listed by using a filter to specify the I/O unit and the bus which has the slots to list. Otherwise, if no filter is used, then all of the physical I/O slots in the managed system will be listed.

The filter data consists of filter name/value pairs, which are in comma separated value (CSV) format. The filter data must be enclosed in double quotes.

The format of the filter data is as follows:

"*filter-name=value,filter-name=value,...*"

Note that certain filters accept a comma separated list of values, as follows:

""*filter-name=value,value,...*",..."

When a list of values is specified, the filter name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

Unless otherwise indicated, multiple values can be specified for each filter.

When listing I/O entitled memory statistics for a partition, this parameter is required, and exactly one partition name or ID must be specified with the **lpar_names** or **lpar_ids** filter.

Valid filter names for this command:
   adapter_ids
       Specify SR-IOV adapter ID(s)
   buses
       Specify I/O bus ID(s)
   logical_port_ids
       Specify SR-IOV logical port ID(s)
   lpar_ids
       Specify partition ID(s)
   lpar_names
       Specify partition user-defined name(s)
   phys_port_ids
       Specify SR-IOV physical port ID(s)
   pool_names
       Specify pool name(s)
   pools
       Specify pool ID(s)
   slots
       Specify physical I/O slot DRC index(ices)
       or virtual I/O slot number(s)
   units
       Specify I/O unit physical location
       code(s)
   vlans
       Specify virtual LAN ID(s)
   vswitches

Specify virtual switch name(s)

Valid filters with **-r io --rsubtype unit**:
    units

Valid filters with **-r io --rsubtype bus**:
    buses, **units**

Valid filters with **-r io --rsubtype slot**:
    buses, **lpar_ids** | **lpar_names**, **pools**, **slots**,
    units

Valid filters with **-r io --rsubtype iopool --level pool**:
    lpar_ids | **lpar_names**, **pools**

Valid filters with **-r io --rsubtype taggedio**:
    lpar_ids | **lpar_names**

Valid filters with **-r io --rsubtype slotchildren**:
    lpar_ids | **lpar_names**, **slots**

Valid filters with **-r virtualio --rsubtype eth --level lpar**:
    lpar_ids | **lpar_names**, **slots**, **vlans**, **vswitches**

Valid filters with **-r virtualio --rsubtype fc --level lpar**:
    lpar_ids | **lpar_names**, **slots**

Valid filters with **-r virtualio --rsubtype virtualopti**:
    lpar_ids | **lpar_names**, **pools**

Valid filters with **-r virtualio --rsubtype scsi**:
    lpar_ids | **lpar_names**, **slots**

Valid filters with **-r virtualio --rsubtype serial --level lpar**:
    lpar_ids | **lpar_names**, **slots**

Valid filters with **-r virtualio --rsubtype slot --level lpar**:
    lpar_ids | **lpar_names**

Valid filters with **-r virtualio --rsubtype slot --level slot**:
    lpar_ids | **lpar_names**, **slots**

Valid filters with **-r virtualio --rsubtype vnic**:
    lpar_ids | **lpar_names**, **slots**

Valid filters with **-r virtualio --rsubtype vnicbkdev**:
    lpar_ids | **lpar_names**

Valid filters with **-r virtualio --rsubtype vswitch**:
    vlans, **vswitches**

Valid filters with **-r mem --level lpar**:
    lpar_ids | **lpar_names**

Valid filters with **-r mempool --rsubtype pgdev**:
    lpar_ids | **lpar_names**
    Specify **none** for **lpar_ids** to list all
    devices that are not assigned to a partition

Valid filters with **-r rspool --rsubtype rsdev**:
    lpar_ids | **lpar_names**
    Specify **none** for **lpar_ids** to list all
    devices that are not assigned to a partition

Valid filters with **-r pmem**:
    lpar_ids | **lpar_names**

Valid filters with **-r proc --level lpar**:
    lpar_ids | **lpar_names**, **pools** | **pool_names**

Valid filters with **-r procpool**:
    pools | **pool_names**

valid filters with **-r sriov --rsubtype adapter**:
    adapter_ids

valid filters with **-r sriov --rsubtype logport**:
    adapter_ids, **logical_port_ids**

valid filters with **-r sriov --rsubtype logport --level**:
    adapter_ids, **logical_port_ids**, **phys_port_ids**,
    lpar_ids | **lpar_names**

valid filters with **-r sriov --rsubtype logport -R**:
    adapter_ids, **logical_port_ids**,
    lpar_ids | **lpar_names**

Valid filters with **-r sriov --rsubtype physport**:
    adapter_ids, **phys_port_ids**

Valid filters with **-r accel --level lpar**:
    lpar_ids | **lpar_names**

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed for each hardware resource. If no attribute names are specified, then values for all of the attributes for each hardware resource will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

Descriptions of selected command attributes:
    backing_devices
        A comma separated list of the backing devices for a
        virtual NIC. Each backing device has the following
        format:

> > **sriov**/*vios-lpar-name*/*vios-lpar-ID*/
> > *sriov-adapter-ID*/*sriov-physical-port-ID*/
> > *sriov-logical-port-ID*/*current-capacity*/
> > *desired-capacity*/*failover-priority*/
> > *current-max-capacity*/*desired-max-capacity*

> **possible_adapter_config_options**
> > This attribute is displayed for SR-IOV adapters on
> > managed systems that support configuring the maximum
> > number of logical ports supported on the adapter.
> > This attribute is displayed as a comma separated list
> > of each supported option ID and its associated maximum
> > number of Ethernet logical ports, its associated
> > maximum number of RoCE logical ports, and its
> > description in the following format:

> > *option-ID*/*max-eth-logical-ports*/
> > *max-roce-logical-ports*/*description*

> > If the adapter does not support configuring the
> > maximum number of logical ports supported on the
> > adapter, **null** is displayed.

> **possible_max_logical_ports_options**
> > This attribute is displayed for SR-IOV converged
> > Ethernet and RoCE physical ports when the **-F** option
> > is specified. For each physical port that supports
> > option IDs for configuring the maximum number of
> > logical ports supported for the physical port, this
> > attribute is displayed as a comma separated list of
> > each supported option ID and its associated maximum
> > number of Ethernet logical ports and associated
> > maximum number of RoCE logical ports in the following
> > format:

> > *option-ID*/*max-eth-logical-ports*[/
> > *max-roce-logical-ports*]

> **topology**
> > A comma separated list of the end-to-end device
> > mappings for each virtual device. This is displayed
> > for virtual SCSI and virtual fibre channel adapters
> > and for SR-IOV logical ports when specified with the
> > **-F** option.

> > For virtual SCSI, each device mapping has the
> > following format:

> > *virtual-device*/*state*/*virtual-SCSI-client-device*/
> > *virtual-SCSI-server-adapter*/*storage-pool*/
> > *backing-device*

> > where *virtual-device* is the name of the virtual device
> > on the client operating system (will be an empty
> > string for virtual SCSI server adapters), *state* is the
> > state of the virtual device on the client operating
> > system (will be an empty string for virtual SCSI

server adapters), *virtual-SCSI-client-device* is the
name of the virtual SCSI client device on the client
operating system (will be an empty string for virtual
SCSI server adapters), *virtual-SCSI-server-adapter* is
the name of the virtual SCSI server adapter on the
Virtual I/O Server (VIOS), *storage-pool* is the name of
the storage pool containing the backing device on the
VIOS (will be an empty string if the backing device is
not in a storage pool), and *backing-device* is the name
of the backing device on the VIOS.

For virtual fibre channel, each device mapping has the
following format:

virtual-device/state/virtual-FC-client-device/
virtual-FC-server-adapter/physical-port/
virtual-device-volume-ID/virtual-device-loc-code

where *virtual-device* is the name of the virtual device
on the client operating system (will be an empty
string for virtual fibre channel server adapters),
state is the state of the virtual device on the client
operating system (will be an empty string for virtual
fibre channel server adapters), *virtual-FC-client-
device* is the name of the virtual fibre channel client
device on the client operating system (will be an
empty string for virtual fibre channel server
adapters), *virtual-FC-server-adapter* is the name of
the virtual fibre channel server adapter on the VIOS,
physical-port is the name of the physical fibre
channel port to which this device is backed,
virtual-device-volume-ID is the volume ID of the
virtual fibre channel device, and
virtual-device-loc-code is the location code of
the virtual fibre channel device.

For SR-IOV logical ports, each device mapping has the
following format:

device-name/adapter-id/physical-port-id/
logical-port-id

where *device-name* is the name of the OS device,
adapter-id is the SR-IOV adapter ID, *physical-port-id*
is the SR-IOV physical port ID, and *logical-port-id*
is the SR-IOV logical port ID.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute val-
ues that will be displayed. This header record will be the first record displayed. This option is
only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES

List all I/O units on the managed system:

lshwres -r io --rsubtype unit -m system1

List all buses on I/O unit **U787A.001.0395036**:

lshwres -r io --rsubtype bus -m 9406-570*12345678
 --filter "units=U787A.001.0395036"

List only the DRC index, description, and the owning partition for each physical I/O slot on buses **2** and **3**
of I/O unit **U787A.001.0395036**:

lshwres -r io --rsubtype slot -m system1 --filter
 "units=U787A.001.0395036,"buses=2,3"" -F drc_index,
 description,lpar_name

List all I/O pools and the partitions and slots assigned to each I/O pool:

lshwres -r io --rsubtype iopool -m system1 --level pool

List the tagged I/O devices for the IBM i partition that has an ID of 1:

lshwres -r io --rsubtype taggedio -m 9406-520*100103A
 --filter "lpar_ids=1"

List the I/O slot children for the I/O slot with DRC index **21010207**:

lshwres -r io --rsubtype slotchildren -m 9117-MMA*107791F
 --filter "slots=21010207"

List all virtual ethernet adapters on the managed system:

lshwres -r virtualio --rsubtype eth --level lpar -m system1

List all virtual SCSI adapters on the managed system, and only display attribute values for each adapter,
following a header of attribute names:

lshwres -r virtualio --rsubtype scsi -m system1 -F --header

List all virtual slots for partition lpar1:

lshwres -r virtualio --rsubtype slot -m system1 --level
 slot --filter "lpar_names=lpar1"

List all virtual networks in the managed system:

lshwres -r virtualio --rsubtype vnetwork -m mySys

List all virtual NICs assigned to partition lp1:

lshwres -r virtualio --rsubtype vnic -m mySys
 --filter "lpar_names=lp1"

List the virtual NIC settings for the managed system:

lshwres -r virtualio --rsubtype vnic -m mySys --level sys

List all virtual NIC backing devices in the managed system:

lshwres -r virtualio --rsubtype vnicbkdev -m mySys

List all virtual switches in the managed system:

lshwres -r virtualio --rsubtype vswitch -m system1

List system level memory information:

lshwres -r mem -m 9406-570*98765432 --level sys

List recoverable memory information:

lshwres -r mem -m 9406-570*98765432 --level lpar -R

List memory information for partitions lpar1 and lpar2:

**lshwres -r mem -m system1 --level lpar --filter
 ""lpar_names=lpar_1,lpar_2""**

List only the installed and configurable processors on the system, and separate the output values with a colon:

**lshwres -r proc -m 9406-570*98765432 --level sys -F
 installed_sys_proc_units:configurable_sys_proc_units**

List I/O entitled memory statistics for partition lpar1:

**lshwres -r mem -m system1 --level lpar --filter "lpar_names=lpar_1"
 --stat**

List the shared memory pool:

lshwres -r mempool -m system1

List all of the devices in the shared memory pool (on managed systems that support partition suspend and resume operations, this lists all of the devices in the reserved storage device pool):

lshwres -r mempool -m system1 --rsubtype pgdev

List the reserved storage device pool:

lshwres -r rspool -m 8233-E8B*1234321

List all of the devices in the reserved storage device pool:

lshwres -r rspool -m system1 --rsubtype rsdev

List all of the persistent memory volumes on the managed system:

lshwres -r pmem -m system1 --rsubtype volume

List persistent memory volume information for the managed system:

lshwres -r pmem -m system1 --level sys

List persistent memory volume information for all partitions:

lshwres -r pmem -m system1 --level lpar

List processing resources for all partitions:

lshwres -r proc -m system1 --level lpar

List the physical processor pool:

lshwres -r proc -m system1 --level pool

List all configured shared processor pools in the managed system:

lshwres -r procpool -m system1

List all SR-IOV adapters on the managed system:

lshwres -r sriov -m system1 --rsubtype adapter

List all unconfigured SR-IOV logical ports:

lshwres -r sriov -m system1 --rsubtype logport

List all recoverable SR-IOV logical ports:

lshwres -r sriov -m system1 --rsubtype logport -R

List all SR-IOV ethernet logical ports:

lshwres -r sriov -m system1 --rsubtype logport --level eth

List all SR-IOV ethernet physical ports:

lshwres -r sriov -m system1 --rsubtype physport --level eth

List all SR-IOV converged ethernet physical ports:

lshwres -r sriov -m system1 --rsubtype physport --level ethc

List hardware accelerator information for the managed system:

lshwres -r accel -m sys --level sys

List partition hardware accelerator information:

lshwres -r accel -m sys --level lpar

ENVIRONMENT
> None

BUGS
> None

AUTHOR
> IBM Austin

SEE ALSO
> **chhwres**, **rsthwres**, **lssyscfg**

NAME
> lsilmtscan - list IBM License Metric Tool scan status

SYNOPSIS
> **lsilmtscan** [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
> **lsilmtscan** lists the IBM License Metric Tool (ILMT) scan status details for the Hardware Management
> Console (HMC) virtual appliance.
>
> The **runilmtscan** command is used to run an ILMT scan.

OPTIONS
> **-F** A delimiter separated list of attribute names for the desired attribute values to be displayed. If no
> attribute names are specified, then values for all of the attributes will be displayed.
>
> When this option is specified, only attribute values will be displayed. No attribute names will be
> displayed. The attribute values displayed will be separated by the delimiter which was specified
> with this option.
>
> This option is useful when only attribute values are desired to be displayed, or when the values of
> only selected attributes are desired to be displayed.
>
> **--header**
> Display a header record, which is a delimiter separated list of attribute names for the attribute val-
> ues that will be displayed. This header record will be the first record displayed. This option is
> only valid when used with the **-F** option.
>
> **--help** Display the help text for this command and exit.

EXAMPLES
> List status information about the most recent ILMT scan run on this virtual HMC:
>
> **lsilmtscan**

ENVIRONMENT
> None

BUGS
> None

AUTHOR
> IBM Austin

SEE ALSO
> **runilmtscan**

NAME
      lsiotopo - list I/O topology

SYNOPSIS
      lsiotopo -m *managed-system* [**-r slot**] [**--filter "***filter-data***"**]
       [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
      lsiotopo lists the physical I/O slot topology of the *managed-system*.

      lsiotopo is useful for displaying the I/O topology of multi-node managed systems.

OPTIONS
      -m   The name of the managed system for which to list the I/O topology. The name may either be the user-defined name for the managed system, or be in the form *tttt***-***mmm*****sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt***-***mmm*****sssssss* form must be used if there are multiple managed systems with the same user-defined name.

      -r   The type of I/O resources to list. Valid values are **slot** to list physical I/O slot topology. If this option is omitted, the physical I/O slot topology will be listed.

      --filter   The filters to apply to the I/O resources to be listed. Filters are used to select which I/O resources are to be listed. For example, to list only the physical I/O slots in a specific system enclosure and fabric bus, use the **sys_enclosures** and **fabric_bus_ids** filters.

              The filter data consists of filter name/value pairs, which are in comma separated value (CSV) format. The filter data must be enclosed in double quotes.

              The format of the filter data is as follows:

              "*filter-name*=*value***,***filter-name*=*value***,***...***"**

              Note that certain filters accept a comma separated list of values, as follows:

              ""*filter-name*=*value***,***value***,***...***"**,***...***"**

              When a list of values is specified, the filter name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

              Multiple values can be specified for each filter.

              Valid filter names for this command:
                  sys_enclosures
                    Specify system enclosure location codes
                  slot_enclosures
                    Specify I/O resource enclosure location codes
                  fabric_bus_ids
                    Specify fabric bus IDs
                  owner_lpar_names
                    Specify I/O resource owner partition user-defined
                    names
                  owner_lpar_ids
                    Specify I/O resource owner partition IDs

      -F   A delimiter separated list of attribute names for the desired attribute values to be displayed for each I/O resource. If no attribute names are specified, then values for all of the attributes for each

I/O resource will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which is specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES
List the physical I/O slot topology of the managed system:

lsiotopo -m system1 -r slot

List only the system enclosure, slot enclosure, owner partition ID, and description, separated by a space, for each physical I/O slot on fabric buses **1920** and **1672** of system enclosure **U78A2.001.992002Y-P9**:

lsiotopo -m system1 -r slot -F sys_enclosure slot_enclosure
owner_lpar_id description --filter "sys_enclosures=
U78A2.001.992002Y-P9","fabric_bus_ids=1920,1672""

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
lshwres

NAME

lsipsec - list IPsec connection information

SYNOPSIS

lsipsec {**-l** | **-c** *connection-name* | **--status** *connection-name* |
    --statusall}
 [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

lsipsec lists Internet Protocol Security (IPsec) connection information for the Hardware Management Console.

OPTIONS

-l   Specify this option to list all existing IPsec connection names.

         This option cannot be specified with the **-c**, **--status**, or **--statusall** options.

-c   Specify this option to list connection configuration details for *connection-name*.

         This option cannot be specified with the **-l**, **--status**, or **--statusall** options.

--status

         Specify this option to list connection status for *connection-name*.

         This option cannot be specified with the **-l**, **-c**, or **--statusall** options.

--statusall

         Specify this option to list IPsec daemon status and detailed connection status for all IPsec connections.

         This option cannot be specified with the **-l**, **-c**, or **--status** options.

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

         When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

         This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header

         Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES

List all existing IPsec connection names:

lsipsec -l

List the configuration of IPsec connection **sys1**:

lsipsec -c sys1

List the status of IPsec connection **j21**:

lsipsec --status j21

List detailed status information for the IPsec daemon and all IPsec connections:

lsipsec --statusall

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
chipsec

NAME
       lslabelvios - list Virtual I/O Server label information

SYNOPSIS
       lslabelvios -r {**fcport** | **group** | **default**} **-m** *managed-system*
        [**--filter** "*filter-data*"] [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
       lslabelvios lists Virtual I/O Server (VIOS) label information for the managed system.

OPTIONS
       -r   The type of resources to list. Valid values are **fcport** to list VIOS Fibre Channel (FC) port labels,
                 group to list VIOS group labels, and **default** to list VIOS label override settings for the managed
                 system.

       -m   The name of the managed system for which to list VIOS label information. The name may either
                 be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is
                 the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The
                 *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-
                 defined name.

       --filter The filter to apply to the VIOS labels to list. The filter is used to select which labels to list. If a
                 filter is not specified, then all VIOS labels will be listed.

                 The filter data consists of filter name/value pairs, which are in comma separated value (CSV) for-
                 mat. The filter data must be enclosed in double quotes.

                 The format of the filter data is as follows:

                 "*filter-name=value,filter-name=value,...*"

                 Note that the filters accept a comma separated list of values, as follows:

                 ""*filter-name=value,value,...*""

                 When a list of values is specified, the filter name/value pair must be enclosed in double quotes.
                 Depending on the shell being used, nested double quote characters may need to be preceded by an
                 escape character, which is usually a '\' character.

                 Multiple values can be specified for each filter.

                 Valid filter names for VIOS FC port labels:
                     vios_names | **vios_ids**

                 Valid filter names for VIOS group labels:
                     resources
                         Specify one or more of the values **msp**, **vfc**, **vnic**,
                         vscsi
                     types
                         Specify one or more of the values **include**, **exclude**

                 This option is only valid when listing VIOS FC port labels or VIOS group labels.

       -F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no
                 attribute names are specified, then values for all of the attributes will be displayed.

                 When this option is specified, only attribute values will be displayed. No attribute names will be
                 displayed. The attribute values displayed will be separated by the delimiter which was specified

with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES
List all VIOS FC port labels for all VIOSs on the managed system **mySys**:

lslabelvios -r fcport -m mySys

List all VIOS FC port labels for **vios1** on the managed system **9080-HEX*1234567**:

lslabelvios -r fcport -m 9080-HEX*1234567 --filter "vios_names=vios1"

List all VIOS group labels on the managed system **mySys**:

lslabelvios -r group -m mySys

List only the names of all VIOS group labels on the managed system **mySys**:

lslabelvios -r group -m mySys -F name

List all VIOS Mover Service Partition (MSP) group labels on the managed system **mySys**:

lslabelvios -r group -m mySys --filter "resources=msp"

List the VIOS label override settings for the managed system **mySys**:

lslabelvios -r default -m mySys

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
labelvios

NAME
          lsled - list LEDs

SYNOPSIS
          lsled -r {**sa** | **ident**} [**-t** {**phys** | **virtuallpar** | **virtualsys**}]
           -m *managed-system* [**--filter "***filter-data***"**]
           [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
          lsled lists LED information for the *managed-system*.

OPTIONS
          -r   The type of LED resources to list. Valid values are **sa** for System Attention (SA) LEDs and **ident**
                        for identify LEDs.

          -t   The type of System Attention (SA) LEDs to list. Valid values are **phys** for the physical SA LED
                        for the *managed-system*, **virtuallpar** for virtual partition SA LEDs, or **virtualsys** for the virtual
                        SA LED for the *managed-system*.

                        This option is required when listing SA LEDs. This option is not valid for any other operation.

          -m   The name of the managed system which has the LEDs to list. The name may either be the user-
                        defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the
                        machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The
                        *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-
                        defined name.

          --filter   The filter to apply to the virtual partition SA LEDs to be listed. A filter is used to select which vir-
                        tual partition SA LEDs are to be listed. If no filter is used, then all of the virtual partition SA
                        LEDs for the *managed-system* will be listed.

                        The filter data consists of filter name/value pairs, which are in comma separated value (CSV) for-
                        mat. The filter data must be enclosed in double quotes.

                        The format of the filter data is as follows:

                        "*filter-name=value,filter-name=value,...*"

                        Note that certain filters accept a comma separated list of values, as follows:

                        ""*filter-name=value,value,...*",..."

                        When a list of values is specified, the filter name/value pair must be enclosed in double quotes.
                        Depending on the shell being used, nested double quote characters may need to be preceded by an
                        escape character, which is usually a '\' character.

                        Valid filter names for this command are **lpar_names** or **lpar_ids**. Only one of these filters may be
                        specified. Multiple partitions can be specified with the filter.

                        This option is only valid when listing virtual partition SA LEDs.

          -F   A delimiter separated list of attribute names for the desired attribute values to be displayed for
                        each LED. If no attribute names are specified, then values for all of the attributes for each LED
                        will be displayed.

                        When this option is specified, only attribute values will be displayed. No attribute names will be
                        displayed. The attribute values displayed will be separated by the delimiter which was specified
                        with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES

Display the physical SA LED for the system:

lsled -m 9406-579*100103C -r sa -t phys

Display all of the virtual partition SA LEDs:

lsled -m system1 -r sa -t virtuallpar

Display the virtual partition SA LEDs for partitions **lpar1** and **lpar2**:

lsled -m system1 -r sa -t virtuallpar
 --filter ""lpar_names=lpar1,lpar2""

Display all of the identify LEDs:

lsled -m system1 -r ident

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
chled

NAME

lslic - list Licensed Internal Code levels

SYNOPSIS

lslic {**-m** *managed-system* | **-c**}
 [**-t** {**sys** | **io** | **sriov** | **bmc** | **pnor** | **bmcpnor**}]
 [**-r** {**ibmwebsite** | **ftp** | **sftp** | **dvd** | **disk** | **mountpoint** | **usb**}
    [**-l** {**update** | **upgrade** | **downgrade**}]]
 [**-h** *host-name*] [**-u** *user-ID*] [**--passwd** *password*] [**-k** *SSH-private-key*]
 [**-d** *directory*]
 [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

lslic lists Licensed Internal Code (LIC) levels installed, activated, and accepted. The LIC levels that are available to be retrieved from a repository can also be listed.

lslic can also list the LIC levels currently in the Hardware Management Console (HMC) hard disk repository.

OPTIONS

-m   The name of the managed system for which LIC levels are to be listed. The name may either be the user-defined name for the managed system, or be in the form *tttt*-*mmm**sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt*-*mmm**sssssss form must be used if there are multiple managed systems with the same user-defined name.

-c   List all LIC level files currently in the HMC hard disk repository.

To list only the LIC level installation packages that are currently in the HMC hard disk repository, run the **lslic -m** *managed-system* **-r disk** command with the **-l** option.

-t   The type of LIC levels to list. Valid values are **sys** for managed system LIC levels, **io** for I/O adapter levels, **sriov** for Single Root I/O Virtualization (SR-IOV) adapter levels, **bmc** for Baseboard Management Controller (BMC) firmware levels, **pnor** for PNOR firmware levels, or **bmcpnor** for both BMC and PNOR firmware levels.

The **bmc**, **pnor**, and **bmcpnor** values are valid for OpenPower managed systems only. No other values are valid for OpenPower managed systems.

If this option is omitted, it will default to **bmcpnor** for OpenPower managed systems and to **sys** for other types of managed systems. This option is not valid with the **-c** option.

-r   The repository to query for LIC levels that are available to be retrieved. Valid values are **ibmwebsite** for the IBM service website, **ftp** for a remote FTP site, **sftp** for a remote secure FTP (SFTP) site, **dvd** for the DVD drive on the HMC, **disk** for the internal hard disk drive on the HMC, **mountpoint** for the specified mount point on the internal hard disk drive on the HMC, or **usb** for a USB flash memory device.

When used with the **-l** option, only the LIC levels where the installation package and cover letter both exist in the repository are displayed. This option can be used to display what installation packages have been staged to the local disk repository, or to display the installation packages in the specified repository.

This option is not valid with the **-c** option.

-l   When displaying LIC levels that are available to be retrieved from a repository, use this option to specify the operation type of the LIC levels to list. Valid values are **update** to list update LIC levels only, **upgrade** to list upgrade LIC levels only, or **downgrade** to list downgrade LIC levels only. If this option is omitted, LIC levels of all operation types will be listed.

When this option is used, only the LIC levels where the installation package and cover letter both exist in the repository are displayed.

This option is only valid when displaying LIC levels that are available to be retrieved from a repository.

-h   The host name or IP address of the remote FTP or SFTP server.

This option is required when displaying LIC levels that are available to be retrieved from a remote FTP or SFTP site. This option is not valid otherwise.

-u   The user ID to use to log in to the remote FTP or SFTP site.

This option is required when displaying LIC levels that are available to be retrieved from a remote FTP or SFTP site. This option is not valid otherwise.

--passwd

The password to use to log in to the remote FTP or SFTP site.

If this option is omitted when displaying LIC levels that are available to be retrieved from a remote FTP site, you will be prompted to enter the password. If both this option and the **-k** option are omitted when displaying LIC levels that are available to be retrieved from a remote SFTP site, you will be prompted to enter the password. The **--passwd** and **-k** options are mutually exclusive.

This option is only valid when displaying LIC levels that are available to be retrieved from a remote FTP or SFTP site.

-k   The name of the file that contains the SSH private key. If the file name is not fully qualified, the file must exist in the user's home directory on the HMC.

Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen** command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so when you run the command on the HMC, you must specify both the directory and the file name for the private key. If you generate a key with a passphrase, you will be prompted to enter the passphrase when you run any HMC command that uses the key.

If both this option and the **--passwd** option are omitted when displaying LIC levels that are available to be retrieved from a remote SFTP site, you will be prompted to enter the password. The **-k** and **--passwd** options are mutually exclusive.

This option is only valid when displaying LIC levels that are available to be retrieved from a remote SFTP site.

-d   The directory to use on the remote FTP or SFTP site, or the mount point location on the internal HMC hard disk drive. If this option is not specified for FTP or SFTP, the **/opt/sfp/data/updates** directory will be used.

This option is only valid when displaying LIC levels that are available to be retrieved from a mount point or a remote FTP or SFTP site.

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed for each LIC level. If no attribute names are specified, then values for all of the attributes for each LIC level will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES
Display managed system LIC levels (this command is not valid for OpenPower managed systems):

lslic -t sys -m mysystem

Display the firmware levels for all I/O adapters in a managed system:

lslic -t io -m 9080-HEX*1234567

Display OpenPower managed system BMC and PNOR firmware levels:

lslic -t bmcpnor -m mybmcsystem

Display managed system LIC levels available on the IBM service website (this command is not valid for OpenPower managed systems):

lslic -t sys -m mysystem -r ibmwebsite

Display managed system LIC levels available from a remote FTP server (this command is not valid for OpenPower managed systems):

lslic -t sys -m mysystem -r ftp -h ftphost.domainname
-u myuser --passwd mypasswd

Display OpenPower managed system BMC firmware levels available from a remote FTP server:

lslic -t bmc -m mybmcsystem -r ftp -h ftphost.domainname
-u myuser --passwd mypasswd -d /bmcupdates

Display managed system LIC levels available from a remote SFTP server using SSH keys for authentication (this command is not valid for OpenPower managed systems):

lslic -t sys -m system1 -r sftp -h sftpServer -u user1
-k /home/hmcuser1/keys/id_rsa -d liclevels/840

Display OpenPower managed system BMC and PNOR firmware levels available from a remote SFTP server using SSH keys for authentication:

lslic -t bmcpnor -m bmcsystem1 -r sftp -h sftpServer -u user1
-k /home/hmcuser1/keys/id_rsa -d /bmcupdates

Display the firmware levels for all SR-IOV adapters in a managed system:

lslic -t sriov -m mysystem

Display all LIC level files currently in the HMC hard disk repository:

lslic -c

Display all LIC level upgrade packages currently in the HMC hard disk repository:

lslic -m mysystem -r disk -l upgrade

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
updlic

NAME

lslock - list lock information

SYNOPSIS

lslock -e *managed-frame*
 [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

lslock lists which Hardware Management Console (HMC) owns the lock on the *managed-frame*. If the *managed-frame* is not locked, then "No results were found." will be displayed.

OPTIONS

-e   The name of the managed frame for which to list lock information. The name may either be the user-defined name for the managed frame, or be in the form *tttt*-*mmm**ssssssss, where *tttt* is the type, *mmm* is the model, and *ssssssss* is the serial number of the managed frame. The *tttt*-*mmm**ssssssss form must be used if there are multiple managed frames with the same user-defined name.

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES

Display which HMC owns the lock on the managed frame **myFrame**:

lslock -e myFrame

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

rmlock

NAME

lslogon - list logon information

SYNOPSIS

lslogon -r {**webui** | **ssh**} {**-t** | **-u**} [**-F** [*attribute-names*] [**--header**]]
 [**--help**]

DESCRIPTION

lslogon lists the logged on users or the tasks they are running on the Hardware Management Console (HMC).

OPTIONS

-r   The type of logon information to list. Valid values are **webui** for Web user interface users or tasks, or **ssh** for SSH users or tasks.

-t   Specify this option to list information about the tasks that the users logged onto the HMC are running.

Either this option or the **-u** option is required. The **-t** and **-u** options are mutually exclusive.

-u   Specify this option to list information about the users logged onto the HMC.

Either this option or the **-t** option is required. The **-u** and **-t** options are mutually exclusive.

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES

List all of the tasks that users logged onto the HMC Web user interface are running:

lslogon -r webui -t

List all of the users remotely logged onto the HMC via SSH:

lslogon -r ssh -u

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

termtask

NAME
　　　　lslpardbg - list partition debug files

SYNOPSIS
　　　　lslpardbg [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
　　　　lslpardbg lists Virtual I/O Server (VIOS) debug data files on the Hardware Management Console (HMC).

OPTIONS
　　-F　　　　A delimiter separated list of attribute names for the desired attribute values to be displayed. If no
　　　　　　attribute names are specified, then values for all of the attributes will be displayed.

　　　　　　When this option is specified, only attribute values will be displayed. No attribute names will be
　　　　　　displayed. The attribute values displayed will be separated by the delimiter which was specified
　　　　　　with this option.

　　　　　　This option is useful when only attribute values are desired to be displayed, or when the values of
　　　　　　only selected attributes are desired to be displayed.

　　--header
　　　　　　Display a header record, which is a delimiter separated list of attribute names for the attribute val-
　　　　　　ues that will be displayed. This header record will be the first record displayed. This option is
　　　　　　only valid when used with the **-F** option.

　　--help　　Display the help text for this command and exit.

EXAMPLES
　　　　List the VIOS debug data files on this HMC:

　　　　lslpardbg

ENVIRONMENT
　　　　None

BUGS
　　　　None

AUTHOR
　　　　IBM Austin

SEE ALSO
　　　　lpardbg

NAME
    lslparmigr - list partition migration information

SYNOPSIS
    lslparmigr -r {**lpar** | **mc** | **mem** | **mempool** | **msp** | **procpool** | **sriov** |
            sys | **virtualio**}
    [**-m** *managed-system*]
    [**-t** *target-managed-system* [**--ip** *IP-address* [**-u** *user-ID*]]]
    [**--redundantsriovadapters** {**1** | **2**}] [**--redundantvios** {**0** | **1** | **2**}]
    [**--redundantvnicbkdev** {**1** | **2**}] [**--sriovlogportcfg** {**1** | **2**}]
    [**--vniccfg** {**1** | **2**}] [**--viosfcportlabel** {**1** | **2**}]
    [**--viosmsplabel** {**1** | **2**}] [**--viosstoragelabel** {**1** | **2**}]
    [**--viosvniclabel** {**1** | **2**}]
    [**--filter "***filter-data***"**]
    [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
    lslparmigr lists partition migration information.

OPTIONS
    -r   The type of resources for which to list partition migration information.

            Specify **lpar** to list partition migration information for all of the partitions in *managed-system*.

            Specify **mc** to list partition mobility capabilities for the Hardware Management Console (HMC).

            Specify **mem** to list the memory requirements, including persistent memory requirements, for the partition specified with the **lpar_names** or **lpar_ids** filter, and also list the available memory on the destination managed system.

            Specify **mempool** to list shared memory pool information for the destination managed system. Shared memory pool information is only listed if the shared memory pool has enough available memory for the partition specified with the **lpar_names** or **lpar_ids** filter, if there is an available paging space device for the partition, and if the paging VIOS redundancy requirement of the partition can be satisfied. The **redundant** attribute that is listed indicates whether or not the partition would be configured to use redundant paging VIOS partitions on the destination managed system (a value of **0** indicates the partition would be configured to not use redundant paging VIOS partitions, and a value of **1** indicates the partition would be configured to use redundant paging VIOS partitions).

            Specify **msp** to list possible source and destination mover service partition (MSP) pairs for active partition migration of the partitions specified with the **lpar_names** or **lpar_ids** filter.

            Specify **procpool** to list possible shared processor pools in the destination managed system that have enough available processing resources for the partition specified with the **lpar_names** or **lpar_ids** filter.

            Specify **sriov** to list possible and suggested mappings of the migratable SR-IOV logical ports in the partition specified with the **lpar_names** or **lpar_ids** filter.

            Specify **sys** to list the partition mobility capabilities for *managed-system*.

            Specify **virtualio** to list possible and suggested mappings of the virtual Fibre Channel (FC) adapters, virtual SCSI adapters, and virtual NICs in the partition specified with the **lpar_names** or **lpar_ids** filter.

-m   The name of the managed system for which to list partition migration information. The name may
               either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where
               tttt is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed sys-
               tem. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the
               same user-defined name.

               When listing memory, shared memory pool, mover service partition, shared processor pool, or vir-
               tual I/O information, specify the source managed system for the partition migration with this
               option.

               This option is not valid when listing partition mobility capabilities for the HMC. This option is
               required when listing all other types of partition migration information.

-t   The name of the target, or destination, managed system for the partition migration. The name may
               either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where
               tttt is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed sys-
               tem. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the
               same user-defined name.

               This option is required when listing memory, shared memory pool, mover service partition, shared
               processor pool, or virtual I/O information. This option is not valid when listing any other type of
               partition migration information.

--ip   If the destination managed system is not managed by the same management console that is manag-
               ing the source managed system, then use this option to specify the IP address or host name of the
               management console that is managing the destination managed system.

               To use this option, SSH must be enabled on both management consoles. Also, you must run the
               mkauthkeys command once to set up SSH key authentication.

-u   If the destination managed system is not managed by the same management console that is manag-
               ing the source managed system, then use this option to specify the user ID to use on the manage-
               ment console that is managing the destination managed system. If you do not specify the user ID,
               then the user ID of the user that issues this command will be used.

--redundantsriovadapters
               When listing migratable SR-IOV logical port information, use this option to specify the SR-IOV
               adapter redundancy requirement of the partition's migratable SR-IOV logical ports on the destina-
               tion managed system. When listing virtual I/O information, use this option to specify the SR-IOV
               adapter redundancy requirement of the partition's virtual NIC backing devices on the destination
               managed system. Valid values are **1** if SR-IOV adapter redundancy is required to be maintained,
               or **2** if SR-IOV adapter redundancy is to be maintained if possible. If this option is not specified,
               this option defaults to the value **2**.

               If this option has a value of **1**, the HMC must maintain the SR-IOV adapter redundancy when
               mapping the partition's migratable SR-IOV logical ports or virtual NIC backing devices to the des-
               tination managed system. For example, if two migratable SR-IOV logical ports or two virtual NIC
               backing devices are on the same SR-IOV adapter on the source managed system, they must be
               mapped to the same SR-IOV adapter on the destination managed system. If two migratable SR-
               IOV logical ports or two virtual NIC backing devices are on different SR-IOV adapters on the
               source managed system, they must be mapped to different SR-IOV adapters on the destination
               managed system.

               This option is only valid when listing migratable SR-IOV logical port information or virtual I/O
               information.

--redundantvios,**--redundantpgvios**
>   When listing shared memory pool information, use this option to specify the paging VIOS redundancy requirement for the partition on the destination managed system. Valid values are **0** if the partition is not to use redundant paging VIOS partitions, **1** if the partition is required to use redundant paging VIOS partitions, or **2** if the partition is to use redundant paging VIOS partitions if possible.
>
>   This option is only valid when listing shared memory pool information. If this option is not specified when listing shared memory pool information, then the partition is required to use the same paging VIOS redundancy configuration on the destination managed system that the partition is currently using on the source managed system.
>
>   The **--redundantvios** and **--redundantpgvios** options are equivalent. The **--redundantpgvios** option is deprecated.

--redundantvnicbkdev
>   When listing virtual I/O information, use this option to specify the backing device redundancy requirement of the partition's virtual NICs on the destination managed system. Valid values are **1** if the virtual NIC backing device redundancy is required to be maintained, or **2** if the virtual NIC backing device redundancy is to be maintained if possible. If this option is not specified, this option defaults to the value **1**.
>
>   If this option has a value of **1**, the HMC must map every virtual NIC backing device to a virtual NIC backing device on the destination managed system. In addition, the HMC must maintain the VIOS redundancy the backing devices for a virtual NIC provide. For example, if two backing devices for a virtual NIC are hosted by two different VIOSs on the source managed system, then the backing devices for that virtual NIC must be hosted by two different VIOSs on the destination managed system.
>
>   This option is only valid when listing virtual I/O information.

--sriovlogportcfg
>   When listing migratable SR-IOV logical port information, use this option to specify the configuration requirements for the partition's migratable SR-IOV logical ports on the destination managed system. Valid values are **1** if the migratable SR-IOV logical port configuration is required to be maintained, or **2** if the migratable SR-IOV logical port configuration is to be maintained if possible. If this option is not specified, this option defaults to the value **1**.
>
>   Specifying a value of **2** for this option will allow the HMC to map the partition's migratable SR-IOV logical ports to SR-IOV logical ports with different port VLAN ID, allowed VLAN IDs, allowed MAC addresses or capacity configurations on the destination managed system.
>
>   This option is only valid when listing migratable SR-IOV logical port information.

--vniccfg
>   When listing virtual I/O information, use this option to specify the configuration requirements for the partition's virtual NICs on the destination managed system. Valid values are **1** if the virtual NIC configuration is required to be maintained, or **2** if the virtual NIC configuration is to be maintained if possible. If this option is not specified, this option defaults to the value **1**.
>
>   Specifying a value of **2** for this option will allow the HMC to map the partition's virtual NICs to virtual NICs with different allowed VLAN IDs or maximum capacity configurations on the destination managed system.
>
>   This option is only valid when listing virtual I/O information.

--viosfcportlabel
> When listing virtual I/O information, use this option to specify whether VIOS FC port labels are to
> be used when determining mappings of virtual FC adapters. Valid values are **1** if VIOS FC port
> labels are required to be used, or **2** if VIOS FC port labels are to be used if possible. If this option
> is not specified, it defaults to the value of the VIOS FC port label override option for the managed
> system (see the **labelvios** and **lslabelvios** commands).
>
> This option is only valid when listing virtual I/O information.

--viosmsplabel
> When listing MSP information, use this option to specify whether VIOS MSP group labels are to
> be used when determining source and destination MSP pairs. Valid values are **1** if VIOS MSP
> group labels are required to be used, or **2** if VIOS MSP group labels are to be used if possible. If
> this option is not specified, it defaults to the value of the VIOS MSP group label override option
> for the managed system (see the **labelvios** and **lslabelvios** commands).
>
> This option is only valid when listing MSP information.

--viosstoragelabel
> When listing virtual I/O information, use this option to specify whether VIOS virtual FC and vir-
> tual SCSI group labels are to be used when determining mappings of virtual FC and virtual SCSI
> adapters. Valid values are **1** if VIOS virtual FC and virtual SCSI group labels are required to be
> used, or **2** if VIOS virtual FC and virtual SCSI group labels are to be used if possible. If this
> option is not specified, it defaults to the value of the VIOS storage group label override option for
> the managed system (see the **labelvios** and **lslabelvios** commands).
>
> This option is only valid when listing virtual I/O information.

--viosvniclabel
> When listing virtual I/O information, use this option to specify whether VIOS virtual NIC group
> labels are to be used when determining mappings of virtual NICs. Valid values are **1** if VIOS vir-
> tual NIC group labels are required to be used, or **2** if VIOS virtual NIC group labels are to be used
> if possible. If this option is not specified, it defaults to the value of the VIOS virtual NIC group
> label override option for the managed system (see the **labelvios** and **lslabelvios** commands).
>
> This option is only valid when listing virtual I/O information.

--filter   The filter(s) to apply to the resources to be listed. Filters are used to select which resources are to
> be listed. If no filters are used, then all of the resources will be listed. For example, partition
> information can be listed by using a filter to specify the names or IDs of the partitions to list. Oth-
> erwise, if no filter is used, then information for all of the partitions in the managed system will be
> listed.
>
> The filter data consists of filter name/value pairs, which are in comma separated value (CSV) for-
> mat. The filter data must be enclosed in double quotes.
>
> The format of the filter data is as follows:
>
> **"***filter-name=value***,***filter-name=value***,..."**
>
> Note that certain filters accept a comma separated list of values, as follows:
>
> **""***filter-name=value***,***value***,...","..."**
>
> When a list of values is specified, the filter name/value pair must be enclosed in double quotes.
> Depending on the shell being used, nested double quote characters may need to be preceded by an
> escape character, which is usually a '\' character.

Valid filter names:

lpar_names | **lpar_ids**
One of these filters is required when listing memory,
shared memory pool, mover service partition, shared
processor pool, or virtual I/O information. When
listing memory, shared memory pool, shared processor
pool, or virtual I/O information, only one partition
can be specified. These filters are optional when
listing partition information, and if specified,
multiple partitions can be specified.

dest_sys_names
The user-defined name or the machine type, model,
and serial number (*tttt-mmm*sssssss*) for one
or more destination managed systems. This filter
is only valid when listing partition information.

The **lpar_names**, **lpar_ids**, and **dest_sys_names** filters are mutually exclusive.

This option is not valid when listing HMC or managed system information.

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no
attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be
displayed. The attribute values displayed will be separated by the delimiter which was specified
with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of
only selected attributes are desired to be displayed.

Descriptions of selected command attributes:

ipaddr_mappings
A comma separated list of the IP address mappings for
each source MSP IP address to each destination MSP IP
address. Each IP address mapping has the following
format:

source-MSP-IP-address/source-adapter-type/
dest-MSP-ID/dest-MSP-name/
dest-MSP-IP-address/dest-adapter-type/
source-adapter-speed/dest-adapter-speed

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute val-
ues that will be displayed. This header record will be the first record displayed. This option is
only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES

List partition migration information for all partitions in the managed system **system1**:

lslparmigr -r lpar -m system1

List partition migration information for all partitions in the managed system **system1** that are currently
migrating or waiting to migrate to managed system **system2**:

lslparmigr -r lpar -m system1 --filter "dest_sys_names=system2"

List the required memory for partition **lpar1** and list the available memory on destination managed system **system2**:

lslparmigr -r mem -m system1 -t system2 --filter "lpar_names=lpar1"

List the shared memory pool information for managed system **system2** for partition **lpar1** if **lpar1** is to use redundant paging VIOS partitions on **system2** if possible:

lslparmigr -r mempool -m system1 -t system2 --filter "lpar_names=lpar1"
 --redundantvios 2

List possible source and destination MSP pairs for migrating partition **lpar1** from managed system **system1** to managed system **system2**:

lslparmigr -r msp -m system1 -t system2 --filter "lpar_names=lpar1"

List possible shared processor pools in managed system **system2** that partition **lpar1** can use when it is migrated from managed system **system1** to **system2**:

lslparmigr -r procpool -m system1 -t system2 --filter
 "lpar_names=lpar1"

List possible and suggested mappings of the migratable SR-IOV logical ports in the partition with ID **1** to SR-IOV logical ports in managed system **system2**:

lslparmigr -r sriov -m system1 -t system2 --filter "lpar_ids=1"

List the partition mobility capabilities for managed system **system1**:

lslparmigr -r sys -m system1

List possible and suggested mappings of the virtual FC adapters, virtual SCSI adapters, and virtual NICs in the partition with ID **1** to virtual I/O servers in managed system **system2**:

lslparmigr -r virtualio -m system1 -t system2 --filter "lpar_ids=1"

List possible and suggested mappings of the virtual FC adapters, virtual SCSI adapters, and virtual NICs in partition **aix1** to virtual I/O servers in managed system **system2**, when **system2** is managed by the HMC with host name **hmc2**. In addition, list all possible mappings of the partition's virtual NICs, even those that do not maintain the current backing device redundancy of the virtual NICs:

 mkauthkeys --ip hmc2 -u hmc2user

 lslparmigr -r virtualio -m system1 -t system2 --ip hmc2 -u hmc2user
  --filter "lpar_names=aix1" --redundantvnicbkdev 2

ENVIRONMENT
        None

BUGS
        None

AUTHOR
   IBM Austin

SEE ALSO
   labelvios, **lslabelvios**, **migrlpar**, **mkauthkeys**

NAME
>   lslparutil - list utilization data

SYNOPSIS
>   To list utilization data collected for a managed system:
>>   **lslparutil -r** {**hmc** | **lpar** | **pool** | **procpool** | **mempool** |
>>   **sys** | **all**}
>>   **-m** *managed-system*
>>   [**-d** *number-of-days*] [**-h** *number-of-hours*]
>>   [**--minutes** *number-of-minutes*]
>>   [**--startyear** *year*] [**--startmonth** *month*]
>>   [**--startday** *day*] [**--starthour** *hour*]
>>   [**--startminute** *minute*] [**--endyear** *year*]
>>   [**--endmonth** *month*] [**--endday** *day*]
>>   [**--endhour** *hour*] [**--endminute** *minute*]
>>   [**-n** *number-of-events*] [**-s** *sample-rate*]
>>   [**--filter** "*filter-data*"]
>>   [**-F** [*attribute-names*] [**--header**]] [**--help**]
>
>   To list HMC settings for utilization data collection:
>>   **lslparutil -r config** [**-m** *managed-system*]
>>   [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
>   **lslparutil** lists utilization data collected for a *managed-system*. This command also lists the Hardware Management Console (HMC) settings for utilization data collection.
>
>   The HMC collects the following types of utilization data: sampling events, state change events, configuration change events, and Utility Capacity on Demand (CoD) processor usage events.
>
>   Sampling events are collected for the managed system, for each partition in the managed system, and for the physical processor pool, each shared processor pool, and the shared memory pool in the managed system. Sampling events are collected at the configured sample rate. They are also collected hourly, daily at midnight, and monthly at midnight on the first day of each month. Sampling events are also collected immediately following the collection of a Utility CoD processor usage event. Sampling events contain information about memory and processor utilization.
>
>   State change events are collected for the managed system, for each partition in the managed system, and for the HMC. State change events are collected when a state change occurs for the managed system, a partition, or when the HMC is started or shut down.
>
>   Configuration change events are collected for the managed system, for each partition in the managed system, for each shared processor pool in the managed system, for the shared memory pool in the managed system, and for the HMC. Configuration change events are collected when a configuration change affecting memory or processor resources occurs for the managed system, a partition, a shared processor pool, or the shared memory pool. Configuration change events are also collected when the local time is changed on the HMC.
>
>   Utility CoD processor usage events are collected for the managed system when a Utility CoD processor minute is used. All Utility CoD processor minutes used during a single minute are grouped into one event.
>
>   Hourly sampling events and all state change, configuration change, and Utility CoD processor usage events collected are only saved on the HMC for about 2 months. Daily sampling events are saved for about 2 years, and monthly sampling events are saved for about 10 years.
>
>   Sampling events are also saved in a snapshot file. Sampling events that are collected more frequently than

hourly are only saved in the snapshot file. All state change, configuration change, and Utility CoD processor usage events collected are also saved in the snapshot file, in addition to being saved with the hourly sampling events. The snapshot file is purged daily at midnight. Events more than 24 hours old are purged. Therefore, the snapshot file will only contain events that were collected during the last 24 to 48 hours.

Utilization data collection for managed systems is not automatically enabled. The **chlparutil** command can be used to enable utilization data collection and configure the sample rate.

OPTIONS

-r   The type of system resources for which events are to be listed. Valid values are **hmc** for HMC, **lpar** for partitions, **pool** for physical processor pool, **procpool** for shared processor pools, **mempool** for shared memory pool, **sys** for managed system, **all** for HMC, partitions, physical processor pool, shared processor pools, shared memory pool, and managed system, and **config** for HMC configuration settings for utilization data collection.

-m   The name of the managed system for which the collected utilization data or the HMC configuration settings is to be listed. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name, or if the HMC does not currently have a connection to the managed system.

If this option is specified when listing HMC configuration settings, then the HMC configuration settings for the *managed-system* will be listed. Otherwise, the HMC configuration settings for all of the systems currently managed by this HMC, and for all of the systems for which utilization data has been previously collected by this HMC will be listed.

-d   The number of days prior to today for which events will be listed. Events that were collected today will be listed, along with events that were collected during the past *number-of-days* days.

This option cannot be specified with the **-h**, **--minutes**, **--startyear**, **--startmonth**, **--startday**, **--starthour**, **--startminute**, **--endyear**, **--endmonth**, **--endday**, **--endhour**, or **--endminute** options.

-h   The number of hours prior to the current time for which events will be listed.

This option cannot be specified with the **-d**, **--minutes**, **--startyear**, **--startmonth**, **--startday**, **--starthour**, **--startminute**, **--endyear**, **--endmonth**, **--endday**, **--endhour**, or **--endminute** options.

--minutes

The number of minutes prior to the current time for which events will be listed.

This option cannot be specified with the **-d**, **-h**, **--startyear**, **--startmonth**, **--startday**, **--starthour**, **--startminute**, **--endyear**, **--endmonth**, **--endday**, **--endhour**, or **--endminute** options.

--startyear

The starting year for which events will be listed. The default value for this option is **1970**.

This option cannot be specified with the **-d**, **-h**, or **--minutes** options.

--startmonth

The starting month for which events will be listed. Valid values are **1** for January through **12** for December. The default value for this option is **1** (January).

This option cannot be specified with the **-d**, **-h**, or **--minutes** options.

--startday

> The starting day for which events will be listed. Valid values are **1** through **31**. The default value for this option is **1**.
>
> This option cannot be specified with the **-d**, **-h**, or **--minutes** options.

--starthour

> The starting hour for which events will be listed. Valid values are **0** for midnight through **23** for 11:00 pm. The default value for this option is **0** (midnight).
>
> This option cannot be specified with the **-d**, **-h**, or **--minutes** options.

--startminute

> The starting minute for which events will be listed. Valid values are **0** through **59**. The default value for this option is **0**.
>
> This option cannot be specified with the **-d**, **-h**, or **--minutes** options.

--endyear

> The ending year for which events will be listed. The default value for this option is now.
>
> This option cannot be specified with the **-d**, **-h**, or **--minutes** options.

--endmonth

> The ending month for which events will be listed. Valid values are **1** for January through **12** for December. The default value for this option is now.
>
> This option cannot be specified with the **-d**, **-h**, or **--minutes** options.

--endday

> The ending day for which events will be listed. Valid values are **1** through **31**. The default value for this option is now.
>
> This option cannot be specified with the **-d**, **-h**, or **--minutes** options.

--endhour

> The ending hour for which events will be listed. Valid values are **0** for midnight through **23** for 11:00 pm. The default value for this option is now.
>
> This option cannot be specified with the **-d**, **-h**, or **--minutes** options.

--endminute

> The ending minute for which events will be listed. Valid values are **0** through **59**. The default value for this option is now.
>
> This option cannot be specified with the **-d**, **-h**, or **--minutes** options.

-n

> The maximum number of events to be listed, starting with the most recent event. The number specified must be greater than 0.
>
> If this option is not specified, and neither are any of the **-d**, **-h**, **--minutes**, **--startyear**, **--startmonth**, **--startday**, **--starthour**, **--startminute**, **--endyear**, **--endmonth**, **--endday**, **--endhour**, or **--endminute** options, then only the most recent event will be listed.

-s

> Use this option to specify the sample rate for which utilization data is to be listed. Valid values are **h** for hourly sampling events and all state change, configuration change, and Utility CoD processor usage events, **d** for daily sampling events, **m** for monthly sampling events, and **s** for the snapshot file.
>
> If this option is not specified then events in the snapshot file will be listed.

--filter   The filter(s) to apply to the events to be listed. Filters are used to select which events for the speci-
fied resource type are to be listed.

The filter data consists of filter name/value pairs, which are in comma separated value (CSV) for-
mat. The filter data must be enclosed in double quotes.

The format of the filter data is as follows:

"*filter-name=value,filter-name=value,...*"

Note that certain filters accept a comma separated list of values, as follows:

""*filter-name=value,value,...*",..."

When a list of values is specified, the filter name/value pair must be enclosed in double quotes.
Depending on the shell being used, nested double quote characters may need to be preceded by an
escape character, which is usually a '\' character.

Multiple values can be specified for each filter.

Valid filter names for this command:
    lpar_ids
       Specify partition ID(s)
    lpar_names
       Specify partition user-defined name(s)
    event_types
       Specify one or more of the values
       sample, **state_change**, **config_change**,
       utility_cod_proc_usage
    pools
       Specify shared processor pool ID(s)
    pool_names
       Specify shared processor pool
       user-defined name(s)

Valid filters with **-r hmc**:
    event_types

Valid filters with **-r lpar**:
    event_types, **lpar_ids** | **lpar_names**,
    pools | **pool_names**

Valid filters with **-r pool**:
    event_types

Valid filters with **-r procpool**:
    event_types, **pools** | **pool_names**

Valid filters with **-r mempool**:
    event_types

Valid filters with **-r sys**:
    event_types

Valid filters with **-r all**:
    event_types, **lpar_ids** | **lpar_names**,
    pools | **pool_names**
    The **lpar_ids** and **lpar_names** filter will
    only apply to partition events, and the **pools**
    and **pool_names** filter will only apply to
    partition events and shared processor pool events

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed for each event. If no attribute names are specified, then values for all of the attributes for each event will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

Command attributes:
    borrowed_pool_proc_units
        The sum of the processing units being borrowed
        from powered off partitions with dedicated
        processors and the processing units available
        to be assigned to partitions, rounded down to
        a whole processor.
    capped_cycles
        The number of capped processing cycles
        utilized by this partition since the
        managed system was started.
    configurable_pool_proc_units
        The number of processing units assigned to
        all shared processor partitions, rounded up
        to a whole processor.
    configurable_sys_mem
        The amount of configurable system memory
        (in megabytes).
    configurable_sys_proc_units
        The number of configurable system
        processing units.
    curr_5250_cpw_percent
        The 5250 CPW percent assigned to the
        partition.
    curr_avail_5250_cpw_percent
        The 5250 CPW percent available to be
        assigned to partitions.
    curr_avail_pool_proc_units
        The number of processing units available
        to be assigned to partitions.
    curr_avail_sys_mem
        The amount of memory (in megabytes)
        available to be assigned to partitions.
    curr_avail_sys_proc_units
        The number of processing units available
        to be assigned to partitions.

curr_io_entitled_mem
> The amount of I/O entitled memory (in megabytes) assigned to the shared memory partition.

curr_max_pool_mem
> The maximum size (in megabytes) of the shared memory pool.

curr_mem
> The amount of memory (in megabytes) assigned to the partition. For shared memory partitions, this is the amount of logical memory assigned to the partition.

curr_mem_weight
> The current relative memory priority for the shared memory partition. The smaller the value, the lower the priority. Possible values are 0 - 255.

curr_pool_mem
> The size (in megabytes) of the shared memory pool.

curr_proc_mode
> The processing mode for the partition. Possible values are **ded** or **shared**.

curr_proc_units
> The number of processing units assigned to the partition.

curr_procs
> The number of processors or virtual processors assigned to the partition.

curr_reserved_pool_proc_units
> The number of processing units that are reserved for temporary use by the uncapped partitions in the shared processor pool.

curr_shared_proc_pool_id
> The unique integer identifier for the shared processor pool that the partition is in.

curr_shared_proc_pool_name
> The user-defined name of the shared processor pool, at the time the event was collected, that the partition is in.

curr_sharing_mode
> The sharing mode of the partition. Possible values are **keep_idle_procs**, **share_idle_procs**, **share_idle_procs_active**, **share_idle_procs_always**, **cap**, or **uncap**.

curr_uncap_weight
> The current weighted average of processing priority when in uncapped sharing mode. The smaller the value, the lower the weight. Possible values are 0 - 255.

dedup_cycles
    The number of processing cycles spent deduplicating
    data since Active Memory Deduplication was enabled
    for the shared memory pool. The processing cycles
    were donated by the paging Virtual I/O Server
    partitions assigned to the pool.

dedup_mem
    The amount of logical memory (in megabytes) assigned
    to the partition that has been deduplicated.

dedup_pool_mem
    The amount of memory (in megabytes) in the shared
    memory pool that is being used for deduplicated data.

entitled_cycles
    The number of processing cycles to which
    the partition has been entitled since the
    managed system was started. This value is
    based on the number of processing units
    assigned to the partition, and may be
    greater than or smaller than the number
    of cycles actually used.

event_type
    The type of event. Possible values are
    sample, **state_change**, **config_change**, or
    utility_cod_proc_usage.

idle_cycles
    The number of cycles that the partition reported as
    idle. If the partition does not have the ability to
    report idle cycles, this value is 0.

lpar_curr_io_entitled_mem
    The total amount of I/O entitled memory (in
    megabytes) assigned to all of the partitions
    in the shared memory pool.

lpar_dedup_mem
    The total amount of partition logical memory (in
    megabytes) that has been deduplicated.

lpar_id
    The unique integer identifier for the
    partition.

lpar_mapped_io_entitled_mem
    The total amount of I/O entitled memory (in
    megabytes) currently mapped by all of the
    partitions in the shared memory pool.

lpar_name
    The user-defined name of the partition
    at the time the event was collected.

lpar_run_mem
    The total amount of logical memory (in megabytes)
    assigned to all of the partitions in the shared
    memory pool.

mapped_io_entitled_mem
    The amount of I/O entitled memory (in megabytes)
    currently mapped by the shared memory partition.

max_pool_proc_units
    This number, minus the reserved

processing units in the shared processor
pool, is the maximum number of processing
units that the partitions in the shared
processor pool can use.

mem_dedup

Indicates whether Active Memory Deduplication is
enabled for the shared memory pool. Possible values
are **0** for disabled or **1** for enabled.

mem_mode

The memory mode for the partition.
Possible values are **ded** or **shared**.

mem_overage_cooperation

The difference between the shared memory
partition's assigned memory overcommitment
and its actual overcommitment. A positive
value means the partition is using less memory
than system firmware has requested it to use.

name

The user-defined name of the managed
system.

page_faults

The total number of page faults that have
occurred since the shared memory pool was
created.

page_in_delay

The total page-in delay, in microseconds, spent
waiting for page faults since the shared memory
pool was created.

phys_run_mem

The runtime amount of physical memory (in megabytes)
allocated to the shared memory partition.

prev_time

The time on the HMC when the HMC time was
changed.

proc_cycles_per_second

Processing cycles per second on one physical
processor. This value is set to a fixed constant
of 512,000,000.

resource_type

The type of system resource for which the
event was collected. Possible values are
hmc, **lpar**, **pool**, **procpool**, **mempool**, or **sys**.

run_mem_weight

The runtime relative memory priority for
the shared memory partition. The smaller the
value, the lower the priority. Possible
values are 0 - 255.

sample_rate

The rate, in seconds, at which samples
are obtained. This rate can be changed
with the **chlparutil** command.

shared_cycles_while_active

The number of dedicated processing cycles
shared by this partition while it has

been active since the managed system was
started.

shared_proc_pool_id
The unique integer identifier for the
shared processor pool.

shared_proc_pool_name
The user-defined name of the shared
processor pool at the time the event was
collected.

state
For system events, this is the state of
the managed system at the time the event
was collected. For partition events,
this is the state of the partition at the
time the event was collected.

sys_firmware_mem
The amount of memory (in megabytes) on the managed
system that is being used by system firmware.

sys_firmware_pool_mem
The amount of memory (in megabytes) in the shared
memory pool that is being used by system firmware.

sys_time
The time on the managed system that the
sample was taken.

time
The time on the HMC that the event was
collected.

time_cycles
The number of time cycles since the
managed system was started.

time_shut_down
The time the HMC was shut down or
rebooted.

total_instructions
The number of instructions performed by the partition
since the managed system was started.

total_instructions_execution_time
The amount of time instruction counts were collected
for the partition since the managed system was
started.

total_pool_cycles
The total number of processing cycles
available in the physical processor pool
or shared processor pool since the
managed system was started.

type_model_serial_num
The machine type, model, and serial
number of the managed system.

uncapped_cycles
The number of uncapped processing cycles
utilized by this partition since the
managed system was started.

unreported_proc_min
The total number of Utility CoD processor

              minutes that have not been reported.

     used_proc_min

              The number of Utility CoD processor
minutes that were used during the last
minute.

     utilized_pool_cycles

              The number of processing cycles in the
physical processor pool or shared
processor pool that have been utilized
since the managed system was started.

    --header

        Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

    --help   Display the help text for this command and exit.

EXAMPLES

List all of the monthly sampling events that were collected for the managed system **sys1** for the entire year 2005:

lslparutil -r all -m sys1 --startyear 2005 --endyear 2005 --endmonth 12 --endday 31 --endhour 23 -s m

List all of the hourly managed system sampling events that have been collected for the managed system with type, model, and serial number **9406-520*1000101** since midnight today:

lslparutil -r sys -m 9406-520*1000101 -d 0 --filter "event_types=sample" -s h

List all of the events that have been collected for the managed system **sys1** since January 1, 2006, and list a maximum of 25 events:

lslparutil -r all -m sys1 --startyear 2006 -n 25 -s h

List the 10 most recent hourly sampling events that were collected for partition **p1**:

lslparutil -r lpar -m sys1 -n 10 -s h --filter "event_types=sample,lpar_names=p1"

List all of the state change and configuration change events that were collected for the managed system **sys1** for the month of June in 2005:

lslparutil -r all -m sys1 --startyear 2005 --startmonth 6 --endyear 2005 --endmonth 6 --endday 30 --endhour 23 -s h --filter ""event_types=state_change,config_change""

List all of the Utility CoD processor usage events that were collected for the managed system **sys1** for the month of May in 2007:

lslparutil -r all -m sys1 --startyear 2007 --startmonth 5 --endyear 2007 --endmonth 5 --endday 31 --endhour 23 -s h --filter "event_types=utility_cod_proc_usage"

List all of the HMC events that have been collected for managed system **sys1** since February 1, 2006:

lslparutil -r hmc -m sys1 --startyear 2006 --startmonth 2 -s h

List the configuration settings for utilization data collection on this HMC for all managed systems:

lslparutil -r config

To calculate the default shared processor pool utilization in percent over a twelve hour time period:

lslparutil -m sys1 -r procpool --startyear 2006
--startmonth 2 --startday 23 --starthour 0 --endyear 2006
--endmonth 2 --endday 23 --endhour 12 --filter
"event_types=sample,pool_names=DefaultPool"
-F time,total_pool_cycles,utilized_pool_cycles

02/23/2006 12:00:01,134967149091025,467439053292
02/23/2006 11:00:02,134963299532241,467428119008
02/23/2006 10:00:01,134959313365305,467419269942
02/23/2006 09:00:01,134954622214624,467403199531
02/23/2006 08:00:02,134942086330068,467368397739
02/23/2006 07:00:01,134929553859752,467333227651
02/23/2006 06:00:01,134917026289150,467295577359
02/23/2006 05:00:02,134904482088726,467258616569
02/23/2006 04:00:01,134891946956456,467223704573
02/23/2006 03:00:01,134879415157938,467188374373
02/23/2006 02:00:01,134866883128692,467152556956
02/23/2006 01:00:02,134854347365860,467116506907
02/23/2006 00:00:03,134841811733640,467081011935

Pool utilization =
    (utilized_pool_cycles / total_pool_cycles) * 100
Pool utilization = ((467439053292 - 467081011935) /
    (134967149091025 - 134841811733640)) * 100
Pool utilization = 0.29%

To calculate the processor utilization for the shared processor partition with ID 7 over the last minute (the sampling rate is 1 minute):

lslparutil -m sys1 -r lpar --filter "lpar_ids=7", -n 2 -F time,lpar_id,
capped_cycles,uncapped_cycles,entitled_cycles,time_cycles

03/29/2012 18:09:30,7,55844419525044,0,106332165468039,
1234978811234159
03/29/2012 18:08:30,7,55839107527864,0,106316742434446,
1234947965168143

Processor utilization % =
    ((capped_cycles + uncapped_cycles) / entitled_cycles) * 100
Processor utilization % =
    (((55844419525044 - 55839107527864) + (0 - 0)) /
    (106332165468039 - 106316742434446)) * 100
Processor utilization % = 34.44%

Processor units utilized =
    (capped_cycles + uncapped_cycles) / time_cycles
Processor units utilized =
    ((55844419525044 - 55839107527864) + (0 - 0)) /
    (1234978811234159 - 1234947965168143)
Processor units utilized = 0.17

To calculate the processor utilization for the dedicated processor partition with ID 8 over the last minute (the sampling rate is 1 minute):

lslparutil -m sys1 -r lpar --filter "lpar_ids=8", -n 2
-F time,lpar_id,capped_cycles,idle_cycles,time_cycles

03/29/2012 18:09:30,8,10650723610566,27015925200832,1234978811234159
03/29/2012 18:08:30,8,10619877543196,26994400296144,1234947965168143

Processor utilization % =
   ((capped_cycles - idle_cycles) / capped_cycles) * 100
Processor utilization % = (((10650723610566 - 10619877543196) -
   (27015925200832 - 26994400296144)) /
   (10650723610566 - 10619877543196)) * 100
Processor utilization % = 30.22%

Processor units utilized =
   (capped_cycles - idle_cycles) / time_cycles
Processor units utilized = ((10650723610566 - 10619877543196) -
   (27015925200832 - 26994400296144)) /
   (1234978811234159 - 1234947965168143)
Processor units utilized = 0.30

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chlparutil, **rmlparutil**

NAME

lsmediadev - list storage media devices

SYNOPSIS

lsmediadev [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

lsmediadev lists the storage media devices that are available for use on the Hardware Management Console (HMC).

OPTIONS

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header

Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES

List all of the storage media devices that are available for use on the HMC:

lsmediadev

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

NAME
　　　　lsmemdev - list memory devices

SYNOPSIS
　　　　lsmemdev -r avail -m *managed-system*
　　　　 {**-p** *partition-names* | **--id** *partition-IDs*}
　　　　 [**--min** *minimum-size*] [**--max** *maximum-size*] [**--filter** "*filter-data*"]
　　　　 [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
　　　　lsmemdev lists block storage devices that can be used as reserved storage devices for the *managed-system*.
　　　　Reserved storage devices are used as paging space devices for partitions that use shared memory. Reserved
　　　　storage devices are also used for suspended partitions.

　　　　Block storage devices can be listed for any Virtual I/O Server (VIOS) partition in the managed system.
　　　　However, a device cannot be added to a pool unless the VIOS partition is assigned to that pool.

　　　　On a managed system that supports partition suspend and resume operations, block storage devices are
　　　　added to the reserved storage device pool. On a managed system that supports Active Memory Sharing but
　　　　does not support partition suspend and resume operations, block storage devices are added to the shared
　　　　memory pool.

OPTIONS
　　　　-r　　　　The type of resources to list. The only valid value is **avail** to list the block storage devices that are
　　　　　　　　available to add to a reserved storage device pool or a shared memory pool. Any device that is
　　　　　　　　already in a pool will not be listed.

　　　　-m　　　　The name of the managed system which has the VIOS partition(s) for which to list block storage
　　　　　　　　devices. The name may either be the user-defined name for the managed system, or be in the form
　　　　　　　　*tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial num-
　　　　　　　　ber of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple man-
　　　　　　　　aged systems with the same user-defined name.

　　　　-p　　　　The name of one or two VIOS partitions for which to list block storage devices. The partition(s)
　　　　　　　　must be in the running state and must have an RMC connection to the Hardware Management
　　　　　　　　Console (HMC).

　　　　　　　　If two VIOS partitions are specified, then only those block storage devices that can be accessed by
　　　　　　　　both VIOS partitions are listed. The two partition names must be comma separated.

　　　　　　　　You can either use this option to specify the name(s) of the VIOS partition(s), or use the **--id**
　　　　　　　　option to specify the ID(s). The **-p** and the **--id** options are mutually exclusive.

　　　　--id　　　　The ID of one or two VIOS partitions for which to list block storage devices. The partition(s)
　　　　　　　　must be in the running state and must have an RMC connection to the HMC.

　　　　　　　　If two VIOS partitions are specified, then only those block storage devices that can be accessed by
　　　　　　　　both VIOS partitions are listed. The two partition IDs must be comma separated.

　　　　　　　　You can either use this option to specify the ID(s) of the VIOS partition(s), or use the **-p** option to
　　　　　　　　specify the name(s). The **--id** and the **-p** options are mutually exclusive.

　　　　--min　　　　The minimum size, in megabytes, of the block storage devices to list. If this option is not specified,
　　　　　　　　a default value of 0 is used.

　　　　--max　　　　The maximum size, in megabytes, of the block storage devices to list. If this option is not speci-
　　　　　　　　fied, no maximum size is used.

　　　　--filter　　　The filter(s) to apply to the block storage devices to be listed. Filters are used to select which
　　　　　　　　devices are to be listed. If no filters are used, then all of the devices will be listed. For example,

only physical devices can be listed by using the **types** filter.

The filter data consists of filter name/value pairs, which are in comma separated value (CSV) format. The filter data must be enclosed in double quotes.

The format of the filter data is as follows:

"*filter-name=value*,*filter-name=value*,..."

Note that certain filters accept a comma separated list of values, as follows:

""*filter-name=value*,*value*,...",..."

When a list of values is specified, the filter name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

Only one value can be specified for each filter.

Valid filter names for this command:
> **redundant**
>> Valid values are:
>> **0** - devices which could never be accessed by
>> another VIOS partition
>> **1** - devices which possibly could be accessed by
>> another VIOS partition
> **types**
>> Valid values are:
>> **logical** - logical devices
>> **phys**   - physical devices

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed for each device. If no attribute names are specified, then values for all of the attributes for each device will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
> Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES
List all of the available block storage devices that can be accessed by VIOS partition **vios1**:

lsmemdev -r avail -m sys1 -p vios1

List all of the available block storage devices that can be accessed by both VIOS partitions **vios1** and **vios2**:

lsmemdev -r avail -m sys1 -p vios1,vios2

List the names and sizes of all of the available block storage devices that can be accessed by VIOS partition **vios1**:

lsmemdev -r avail -m sys1 -p vios1 -F device_name,size

List the available block storage devices which are between 1 GB and 4 GB in size and that can be accessed by both the VIOS partitions with IDs **1** and **2**:

lsmemdev -r avail -m sys1 --id 1,2 --min 1024 --max 4096

List all of the available physical block storage devices that can be accessed by the VIOS partition with ID **1**:

lsmemdev -r avail -m 9117-MMA*1234567 --id 1 --filter "types=phys"

ENVIRONMENT
    None

BUGS
    None

AUTHOR
    IBM Austin

SEE ALSO
    lshwres

NAME

lsmemopt - list memory optimization information

SYNOPSIS

lsmemopt -m *managed-system* [**-r** {**sys** | **lpar**}]
[**-o** {**currscore** | **calcscore**}]
[**-p** *partition-names* | **--id** *partition-IDs*]
[**-x** *partition-names* | **--xid** *partition-IDs*]
[**--filter** "*filter-data*"]
[**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

lsmemopt lists information, including status and progress information, about the most recent memory optimization operation that was started on the *managed-system*.

lsmemopt also lists affinity scores for the *managed-system* and for partitions in the *managed-system*. An affinity score is a measure of how good the processor-memory affinity is on the managed system or for a partition. The score is a number between 0 and 100, with 0 representing the worst affinity and 100 representing perfect affinity. Depending on the system configuration, scores of 100 might not be attainable. A partition with no processor and memory resources does not have an affinity score, and **none** will be displayed for its score.

lsmemopt can list current affinity scores, and can calculate and list potential affinity scores which could be attained after running a Dynamic Platform Optimization operation. Note that potential affinity scores may differ slightly from the actual affinity scores that are attained after running the Dynamic Platform Optimization operation.

OPTIONS

-m   The name of the managed system for which to list memory optimization information. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm**sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm**sssssss form must be used if there are multiple managed systems with the same user-defined name.

-r   The type of resources for which to list affinity scores. Valid values are **sys** to list the affinity score for the managed system, and **lpar** to list affinity scores for partitions.

If this option is omitted when listing affinity scores, the affinity score for the managed system will be listed.

This option is only valid when listing affinity scores.

-o   The operation to perform. Valid values are **currscore** to list current affinity scores, and **calcscore** to calculate and list potential affinity scores.

If this option is omitted, information about the most recent memory optimization operation that was started on the managed system is listed.

-p   The name of one or more potential partitions to prioritize for optimization. This list of partitions is used to calculate the potential affinity scores that could be attained if a Dynamic Platform Optimization operation that prioritized this list of partitions were run.

Multiple partition names must be comma separated.

You can either use this option to specify the names of the potential partitions to prioritize for optimization, or use the **--id** option to specify the IDs of the partitions. The **-p** and the **--id** options are mutually exclusive.

If neither this option nor the **--id** option is used to specify a list of potential partitions to prioritize for optimization, the managed system will use its own prioritization. In either case, the list of potential partitions to optimize defaults to all partitions except those that are specified in the list of potential partitions to exclude from the operation.

This option is only valid when **-o calcscore** is specified.

--id   The ID of one or more potential partitions to prioritize for optimization. This list of partitions is used to calculate the potential affinity scores that could be attained if a Dynamic Platform Optimization operation that prioritizes this list of partitions were run.

A range of partition IDs may be specified. A range is specified by specifying the beginning partition ID, a dash, and the ending partition ID. Both the beginning and ending partition IDs are included in the range. For example, the range 1-5 includes partitions IDs 1, 2, 3, 4, and 5.

The list of partition IDs specified with this option must be comma separated and can include one or more partition IDs, one or more ranges of partition IDs, or both.

You can either use this option to specify the IDs of the potential partitions to prioritize for optimization, or use the **-p** option to specify the names of the partitions. The **--id** and the **-p** options are mutually exclusive.

If neither this option nor the **-p** option is used to specify a list of potential partitions to prioritize for optimization, the managed system will use its own prioritization. In either case, the list of potential partitions to optimize defaults to all partitions except those that are specified in the list of potential partitions to exclude from the operation.

This option is only valid when **-o calcscore** is specified.

-x   The name of one or more potential partitions to exclude and protect from an optimization operation. This list of partitions is used to calculate the potential affinity scores that could be attained if a Dynamic Platform Optimization operation were run with this list of partitions to exclude.

Multiple partition names must be comma separated.

You can either use this option to specify the names of the potential partitions to exclude, or use the **--xid** option to specify the IDs of the partitions. The **-x** and the **--xid** options are mutually exclusive.

If neither this option nor the **--xid** option is used to specify a list of potential partitions to exclude, the list of potential partitions to exclude defaults to an empty list.

This option is only valid when **-o calcscore** is specified.

--xid   The ID of one or more potential partitions to exclude and protect from an optimization operation. This list of partitions is used to calculate the potential affinity scores that could be attained if a Dynamic Platform Optimization operation were run with this list of partitions to exclude.

A range of partition IDs may be specified. A range is specified by specifying the beginning partition ID, a dash, and the ending partition ID. Both the beginning and ending partition IDs are included in the range. For example, the range 8-11 includes partitions IDs 8, 9, 10, and 11.

The list of partition IDs specified with this option must be comma separated and can include one or more partition IDs, one or more ranges of partition IDs, or both.

You can either use this option to specify the IDs of the potential partitions to exclude, or use the **-x**

option to specify the names of the partitions. The **--xid** and the **-x** options are mutually exclusive.

If neither this option nor the **-x** option is used to specify a list of potential partitions to exclude, the list of potential partitions to exclude defaults to an empty list.

This option is only valid when **-o calcscore** is specified.

--filter   The filter to apply to the partition affinity scores to list. The filter is used to select which partitions to list. If a filter is not specified, then all partitions will be listed.

The filter data consists of filter name/value pairs, which are in comma separated value (CSV) format. The filter data must be enclosed in double quotes.

The format of the filter data is as follows:

"*filter-name=value*"

Note that the filters accept a comma separated list of values, as follows:

""*filter-name=value,value,...*""

When a list of values is specified, the filter name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

Multiple values can be specified for each filter.

Valid filter names:
    lpar_names | **lpar_ids**

This option is only valid when listing partition affinity scores.

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
    Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES
List information about the last memory optimization operation that was started:

lsmemopt -m system1

List just the status of the last memory optimization operation that was started:

lsmemopt -m 8233-E8B*1234321 -F status

List the current system affinity score:

lsmemopt -m sys -o currscore

List the current affinity scores for all partitions in the managed system:

lsmemopt -m sys -o currscore -r lpar

List the current affinity scores for partitions **lp2** and **lp3** only:

lsmemopt -m sys -o currscore -r lpar --filter ""lpar_names=lp2,lp3""

Calculate and list the potential system affinity score that could be attained if a Dynamic Platform Optimization operation were run to optimize all partitions in the system:

lsmemopt -m sys -o calcscore

Calculate and list the potential partition affinity scores that could be attained if a Dynamic Platform Optimization operation that prioritizes partitions **lp1** and **lp3** were run:

lsmemopt -m sys -o calcscore -r lpar -p lp1,lp3

Calculate and list the potential system affinity score that could be attained if a Dynamic Platform Optimization operation that prioritizes the partitions with IDs **2**, **4**, **6** through **9**, and **11**, and excludes the partition with ID **1**, were run:

lsmemopt -m sys -o calcscore --id 2,4,6-9,11 --xid 1

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

optmem

NAME

lsmigrdbg - list partition migration debug resources

SYNOPSIS

lsmigrdbg -r {**config** | **file**}
 [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

lsmigrdbg lists partition migration debug resources for this management console.

OPTIONS

-r The type of partition migration debug resources to list. Valid values are **config** to list partition migration failure debug data collection configuration, and **file** to list available partition migration failure debug data files.

-F A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help Display the help text for this command and exit.

EXAMPLES

List the partition migration failure debug data collection configuration for this management console:

lsmigrdbg -r config

List all of the partition migration failure debug data packages on this management console:

lsmigrdbg -r file

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

migrdbg

NAME
> lsnportlogin - list N_Port login information

SYNOPSIS
> **lsnportlogin** [**-m** *managed-system*] [**-w** *wait-time*] [**-d** *detail-level*]
> **--filter** "*filter-data*" [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
> **lsnportlogin** lists WWPN login status information for virtual fibre channel client adapters configured in partitions or partition profiles.

OPTIONS
> **-m**   The name of the managed system for which to list WWPN login status information. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *ssssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.
>
> **-w**   The maximum time, in minutes, to wait for each Virtual I/O Server (VIOS) command issued by the HMC to complete. If a VIOS command does not complete within the time specified, the query operation for the virtual fibre channel client adapter will be stopped.
>
>   *wait-time* must be a whole number. If wait-time is 0, the operation will not be timed out.
>
>   If this option is not specified, a default value of 3 minutes is used.
>
> **-d**   The level of detail requested from VIOS commands issued by the HMC. Valid values are **0** (none) through **5** (highest).
>
>   If this option is not specified, a default value of 1 is used.
>
> **--filter**   The filters to apply to the WWPN login status information to be listed. Filters are used to select the partitions or partition profiles for which WWPN login status information is to be listed.
>
>   The filter data consists of filter name/value pairs, which are in comma separated value (CSV) format. The filter data must be enclosed in double quotes.
>
>   The format of the filter data is as follows:
>
>   "*filter-name=value,filter-name=value,...*"
>
>   Note that certain filters accept a comma separated list of values, as follows:
>
>   ""*filter-name=value,value,...*",..."
>
>   When a list of values is specified, the filter name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.
>
>   Multiple values can be specified for each filter.
>
>   Valid filter names:
>   **lpar_names** | **lpar_ids**, **profile_names**
>
> **-F**   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.
>
>   When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified

with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

Descriptions of selected command attributes:

wwpn_status
The WWPN status. Possible values are:
0 - WWPN is not activated
1 - WWPN is activated
2 - WWPN status is unknown

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES
List the WWPN login status information for partition **clientPartition**:

lsnportlogin -m sys --filter "lpar_names=clientPartition"

List the WWPN login status information for profile **defaultProf** for the partition with ID **5**:

lsnportlogin -m 9117-MMB*1234567 --filter "profile_names=defaultProf, lpar_ids=5"

List only the partition name, WWPN, and WWPN status, and separate the output values with a colon:

lsnportlogin -m sys --filter "lpar_names=clientPartition" -F lpar_name:wwpn:wwpn_status

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
chnportlogin

NAME
     lspcm - list Performance and Capacity Monitoring settings

SYNOPSIS
     lspcm -t energy [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
     lspcm lists Performance and Capacity Monitoring (PCM) settings.

OPTIONS
     -t   The type of settings to list. The only valid value is **energy** for energy metrics settings.

     -F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no
               attribute names are specified, then values for all of the attributes will be displayed.

               When this option is specified, only attribute values will be displayed. No attribute names will be
               displayed. The attribute values displayed will be separated by the delimiter which was specified
               with this option.

               This option is useful when only attribute values are desired to be displayed, or when the values of
               only selected attributes are desired to be displayed.

     --header
               Display a header record, which is a delimiter separated list of attribute names for the attribute val-
               ues that will be displayed. This header record will be the first record displayed. This option is
               only valid when used with the **-F** option.

     --help   Display the help text for this command and exit.

EXAMPLES
     List the PCM energy metrics settings:

     lspcm -t energy

ENVIRONMENT
     None

BUGS
     None

AUTHOR
     IBM Austin

SEE ALSO
     chpcm

NAME

lsprimhmc - list primary Hardware Management Console information

SYNOPSIS

lsprimhmc -m *managed-system*
 [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

lsprimhmc lists information about the primary Hardware Management Console (HMC) for performing service functions for *managed-system*.

OPTIONS

-m   The name of the managed system for which to list primary HMC information. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header

Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES

List the primary HMC information for managed system **server1**:

lsprimhmc -m server1

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chprimhmc

NAME

      lsprofspace - list profile space information

SYNOPSIS

      lsprofspace -m *managed-system*
      [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

      lsprofspace lists information about the amount of space used for partition profiles in the Hardware Management Console's storage area on *managed-system*. This command also lists information about the amount of space available in that storage area for additional partition profiles.

OPTIONS

      -m   The name of the managed system for which to list partition profile space information. The name may either be the user-defined name for the managed system, or be in the form *tttt*-*mmm***sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt*-*mmm***sssssss* form must be used if there are multiple managed systems with the same user-defined name.

      -F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

                When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

                This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

                Command attributes:

                    avail_space_in_bytes
                        The amount of space, in bytes, currently available in the HMC's storage area on *managed-system*.

                    avail_space_in_client_profiles
                        An estimate of the number of additional client (AIX, Linux, or IBM i) partition profiles that can be created on *managed-system* based on the space currently available in the HMC's storage area on *managed-system*. This estimate uses the average size of all client partition profiles that already exist on *managed-system*.

                        If you plan to create any additional partitions, you must account for the additional last valid configuration profile that the HMC will automatically create for each partition.

                    client_profile_bytes_in_use
                        The amount of space, in bytes, currently used in the HMC's storage area on *managed-system* for all of the client (AIX, Linux, and IBM i) partition profiles.

                    client_profiles_in_use
                        The actual number of client (AIX, Linux, and IBM i) partition profiles configured for *managed-system*.

                    vios_profile_bytes_in_use
                        The amount of space, in bytes, currently used in the HMC's storage area on *managed-system* for all of the Virtual I/O Server (VIOS) partition profiles.

vios_profiles_in_use
>> The actual number of VIOS partition profiles
>> configured for *managed-system*.

--header
>> Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help Display the help text for this command and exit.

EXAMPLES
List profile space information for a managed system:

lsprofspace -m mySys

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

NAME

      lsproxy - list proxy settings

SYNOPSIS

      lsproxy -t sslproxy

      [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

      lsproxy lists the Secure Sockets Layer (SSL) proxy settings used by the Hardware Management Console when performing call-home functions.

      This command is deprecated. Use the lssacfg command instead.

OPTIONS

      -t   The type of proxy settings to list. The only valid value is **sslproxy** to list the SSL proxy settings used when performing call-home functions.

      -F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

                When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

                This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

      --header

                Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

      --help   Display the help text for this command and exit.

EXAMPLES

      List the SSL proxy settings used when performing call-home functions:

      lsproxy -t sslproxy

ENVIRONMENT

      None

BUGS

      None

AUTHOR

      IBM Austin

SEE ALSO

      chproxy

NAME

lspsm - list Power systems management console settings

SYNOPSIS

lspsm [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

lspsm lists Power systems management console configuration settings.

OPTIONS

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES

List the Power systems management console settings:

lspsm

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chpsm

NAME

lspwdpolicy - list password policy information

SYNOPSIS

lspwdpolicy -t {**p** | **s**} [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

lspwdpolicy lists Hardware Management Console (HMC) password policy information.

OPTIONS

-t   The type of password policy information to list. Valid values are **p** to list all of the password policies on the HMC, and **s** to list password policy status information. Password policy status information indicates whether a password policy is active, and if so, which password policy is the active policy.

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES

List all of the HMC password policies:

lspwdpolicy -t p

List just the names of all of the HMC password policies:

lspwdpolicy -t p -F name

List HMC password policy status information:

lspwdpolicy -t s

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chpwdpolicy, **mkpwdpolicy**, **rmpwdpolicy**

NAME

lspwrmgmt - list power management settings

SYNOPSIS

To list power saver mode settings:

lspwrmgmt [**-m** *managed-system*] **-r sys**
[**-F** [*attribute-names*] [**--header**]] [**--help**]

To list dynamic or idle power saver parameters:

lspwrmgmt -m *managed-system* **-r sys -t** {**dynamic_parms** | **idle_parms**}
[**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

lspwrmgmt lists the power management settings for managed systems.

OPTIONS

-m   The name of the managed system for which to list power management settings. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

When listing power saver mode settings, if this option is omitted power saver mode settings for all of the systems managed by this Hardware Management Console (HMC) will be listed.

This option is required when listing dynamic or idle power saver parameters.

-r   The type of resources for which to list power management settings. The only valid value is **sys** for managed systems.

-t   The type of power saver parameters to list. Valid values are **dynamic_parms** to list dynamic power saver tuning parameters, and **idle_parms** to list idle power saver parameters.

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header

Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES

List the power saver mode settings for all systems managed by this HMC:

lspwrmgmt -r sys

List just the supported power saver mode types for managed system **system1**:

lspwrmgmt -r sys -m system1 -F supported_power_saver_mode_types

List the dynamic power saver tuning parameters for managed system **8286-42A*1234567**:

lspwrmgmt -r sys -m 8286-42A*1234567 -t dynamic_parms

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
chpwrmgmt

NAME

        lsrefcode - list reference codes

SYNOPSIS

        lsrefcode -r {**sys** | **lpar**} **-m** *managed-system*
        [**-s** {**p** | **s**}] [**-n** *number*] [**--filter** "*filter-data*"]
        [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

        lsrefcode lists reference codes for the *managed-system* or for partitions in the *managed-system*.

OPTIONS

    -r   The type of reference codes to list. Valid values are **sys** for managed system reference codes, and **lpar** for partition reference codes.

    -m   The name of the managed system which has the reference codes to list. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*ssssssss*, where *tttt* is the machine type, *mmm* is the model, and *ssssssss* is the serial number of the managed system. The *tttt-mmm*ssssssss* form must be used if there are multiple managed systems with the same user-defined name.

    -s   When listing managed system reference codes, use this option to specify the service processor for which reference codes are to be listed. Valid values are **p** for the primary service processor and **s** for the secondary service processor. If this option is not specified, reference codes for the primary service processor will be listed.

                This option is only valid when listing managed system reference codes.

    -n   The *number* of reference codes to list, starting with the current reference code, for the *managed-system* or for each partition. Reference codes are listed in order, with the most recent (current) reference code first.

                The *number* specified must be greater than 0. If there are fewer reference codes available than *number*, only the available reference codes will be listed.

                If this option is omitted, only the current reference code will be listed.

    --filter   The filter to apply to the partition reference codes to be listed. A filter is used to select the partitions for which reference codes are to be listed. If no filter is specified, then reference codes for all partitions in the *managed-system* will be listed.

                The filter data consists of filter name/value pairs, which are in comma separated value (CSV) format. The filter data must be enclosed in double quotes.

                The format of the filter data is as follows:

                filter-name=value,filter-name=value,...<LF>

                Note that certain filters accept a comma separated list of values, as follows:

                "*filter-name=value,value,...*",...<LF>

                When a list of values is specified, the filter name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

                Valid filter names for this command are **lpar_names** or **lpar_ids**. Only one of these filters may be specified. Multiple partitions can be specified with the filter.

This option is not valid when listing managed system reference codes.

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed for each reference code. If no attribute names are specified, then values for all of the reference code attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES
List the current reference code for the managed system:

lsrefcode -r sys -m system1

List the last 10 reference codes for the managed system, and only display attribute values for each reference code, following a header of attribute names:

lsrefcode -r sys -m 9406-570*1543901A -n 10 -F --header

List the last 5 reference codes for the secondary service processor on the managed system:

lsrefcode -r sys -m system1 -s s -n 5

List the current reference code for each partition in the managed system, and only list the partition name, time stamp, and reference code value for each reference code, and separate the output values with a comma:

lsrefcode -r lpar -m system1 -F lpar_name,time_stamp,
 refcode

List the last 25 reference codes for partitions **p1** and **p2**:

lsrefcode -r lpar -m 9406-520*12345678 -n 25 --filter
 ""lpar_names=p1,p2""

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

NAME

lsrmtsupt - list remote support connection information

SYNOPSIS

lsrmtsupt [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

lsrmtsupt lists remote support connection information for the Hardware Management Console (HMC).

OPTIONS

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES

List the remote support connection information for this HMC:

lsrmtsupt

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chrmtsupt

NAME

lsrsdevsize - list reserved storage device size

SYNOPSIS

lsrsdevsize -m *managed-system*
 [**-p** *partition-name* | **--id** *partition-ID*]
 [**-f** *input-data-file* | **-i** "*input-data*"]
 [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

lsrsdevsize lists the minimum required reserved storage device size for a suspend capable or remote restart capable partition. The device size listed is in megabytes.

The device size can be listed for an existing partition, or for a partition that has not yet been created.

OPTIONS

-m   The name of the managed system which has, or will have, the partition for which to list the device size. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

-p   The name of the partition for which to list the device size. The configuration defined in the last activated profile for the partition will be used to determine the device size for the partition. If the partition has never been activated, then the configuration defined in the default profile will be used. If the partition has not yet been created, then you cannot use this option.

If the partition for which to list the device size already exists, you should either use this option to specify the name of the partition, or use the **--id** option to specify the partition's ID. The **-p** and the **--id** options are mutually exclusive.

--id   The ID of the partition for which to list the device size. The configuration defined in the last activated profile for the partition will be used to determine the device size for the partition. If the partition has never been activated, then the configuration defined in the default profile will be used. If the partition has not yet been created, then you cannot use this option.

If the partition for which to list the device size already exists, you should either use this option to specify the ID of the partition, or use the **-p** option to specify the partition's name. The **--id** and the **-p** options are mutually exclusive.

-f   The name of the file containing the input data for this command. The input data consists of attribute name/value pairs, which are in comma separated value (CSV) format.

The format of the input data is as follows:

attribute-name=value,*attribute-name=value*,...

If the partition for which to list the device size already exists and it is specified with the **-p** or **--id** option, then all of the following attributes are optional. Any of the attributes that are specified will override the value in the last activated profile or default profile for the partition (neither profile will be modified). If the partition for which to list the device size does not exist, then all of the following attributes except **hpt_ratio** must be specified.

Valid attribute names:
  lpar_env
    Valid values are:
    aixlinux - the partition will be an AIX or Linux
        partition

os400 - the partition will be an IBM i partition

max_mem
  The maximum amount of memory for the partition, in megabytes.

max_procs
  The maximum number of dedicated processors or the maximum number of virtual processors for the partition.

max_virtual_slots
  The maximum number of virtual I/O adapter slots for the partition.

mem_mode
  Valid values are:

  ded - the partition will use dedicated memory

  shared - the partition will use shared memory

hpt_ratio
  The ratio of the hardware page table size to the maximum memory for the partition. Valid values are displayed by the **lshwres -r mem -m** *managed-system* **--level sys -F possible_hpt_ratios** command.

Input data for this command can be specified with this option or the **-i** option. The **-f** and the **-i** options are mutually exclusive.

-i This option allows you to enter input data on the command line, instead of using a file. Data entered on the command line must follow the same format as data in a file, and must be enclosed in double quotes.

Input data for this command can be specified with this option or the **-f** option. The **-i** and the **-f** options are mutually exclusive.

-F A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
  Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help Display the help text for this command and exit.

EXAMPLES

List the minimum required reserved storage device size for a partition that has not yet been created:

lsrsdevsize -m system1 -i "lpar_env=aixlinux,max_mem=8192,max_procs=1,
 max_virtual_slots=25,mem_mode=ded"

List the minimum required reserved storage device size for partition **p1** using the configuration defined in the last activated or default profile for the partition:

lsrsdevsize -m 9117-MMB*1000234 -p p1

List the minimum required reserved storage device size for the partition with ID **5** using the configuration defined in the last activated or default profile for the partition and a maximum memory of **4096** MB:

lsrsdevsize -m system1 --id 5 -i "max_mem=4096"

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
lssyscfg

NAME
     lsrrstartlpar - list partition remote restart information

SYNOPSIS
     lsrrstartlpar -r {**lpar** | **lparcfg** | **mc** | **mem** | **sriov** | **sys** | **virtualio**}
     [**-m** *managed-system*]
     [**-t** *target-managed-system* [**--ip** *IP-address* [**-u** *user-ID*]]]
     [**--redundantsriovadapters** {**1** | **2**}] [**--redundantvnicbkdev** {**1** | **2**}]
     [**--sriovlogportcfg** {**1** | **2**}] [**--vniccfg** {**1** | **2**}]
     [**--viosfcportlabel** {**1** | **2**}] [**--viosstoragelabel** {**1** | **2**}]
     [**--viosvniclabel** {**1** | **2**}]
     [**--filter "***filter-data***"**] [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
     lsrrstartlpar lists partition remote restart information.

OPTIONS
     -r   The type of resources for which to list partition remote restart information.

              Specify **lpar** to list partition remote restart information for all of the partitions in *managed-system*.

              Specify **lparcfg** to list the partition configuration information saved in the remote restart data for
              all of the partitions in *managed-system* that are simplified remote restart capable.

              Specify **mc** to list partition remote restart capabilities for the Hardware Management Console
              (HMC).

              Specify **mem** to list the memory requirements, including persistent memory requirements, for the
              partition specified with the **lpar_names** or **lpar_ids** filter, and also list the available memory on
              the destination managed system.

              Specify **sriov** to list possible and suggested mappings of the migratable SR-IOV logical ports in
              the partition specified with the **lpar_names** or **lpar_ids** filter.

              Specify **sys** to list partition remote restart capabilities for *managed-system*.

              Specify **virtualio** to list possible and suggested mappings of the virtual Fibre Channel (FC)
              adapters, virtual SCSI adapters, and virtual NICs in the partition specified with the **lpar_names** or
              lpar_ids filter. Note that possible and suggested mappings of virtual FC adapters can be listed for
              shutdown partitions only.

     -m   The name of the managed system for which to list partition remote restart information. The name
              may either be the user-defined name for the managed system, or be in the form *tttt*-*mmm**sssssss,
              where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed
              system. The *tttt*-*mmm**sssssss form must be used if there are multiple managed systems with the
              same user-defined name.

              When listing virtual I/O information, specify the source managed system for the partition remote
              restart operation with this option.

              This option is not valid when listing partition remote restart information for the HMC. This option
              is required when listing all other types of partition remote restart information.

     -t   The name of the target, or destination, managed system for the partition remote restart operation.
              The name may either be the user-defined name for the managed system, or be in the form *tttt*-
              mmm*sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number
              of the managed system. The *tttt*-*mmm**sssssss form must be used if there are multiple managed

systems with the same user-defined name.

This option is required when listing virtual I/O information. This option is not valid when listing any other type of partition remote restart information.

--ip If the destination managed system is not managed by the same management console that is managing the source managed system, then use this option to specify the IP address or host name of the management console that is managing the destination managed system.

    To use this option, SSH must be enabled on both management consoles. Also, you must run the **mkauthkeys** command once to set up SSH key authentication.

-u   If the destination managed system is not managed by the same management console that is managing the source managed system, then use this option to specify the user ID to use on the management console that is managing the destination managed system. If you do not specify the user ID, then the user ID of the user that issues this command will be used.

--redundantsriovadapters
    When listing migratable SR-IOV logical port information, use this option to specify the SR-IOV adapter redundancy requirement of the partition's migratable SR-IOV logical ports on the destination managed system. When listing virtual I/O information, use this option to specify the SR-IOV adapter redundancy requirement of the partition's virtual NIC backing devices on the destination managed system. Valid values are **1** if SR-IOV adapter redundancy is required to be maintained, or **2** if SR-IOV adapter redundancy is to be maintained if possible. If this option is not specified, this option defaults to the value **2**.

    If this option has a value of **1**, the HMC must maintain the SR-IOV adapter redundancy when mapping the partition's migratable SR-IOV logical ports or virtual NIC backing devices to the destination managed system. For example, if two migratable SR-IOV logical ports or two virtual NIC backing devices are on the same SR-IOV adapter on the source managed system, they must be mapped to the same SR-IOV adapter on the destination managed system. If two migratable SR-IOV logical ports or two virtual NIC backing devices are on different SR-IOV adapters on the source managed system, they must be mapped to different SR-IOV adapters on the destination managed system.

    This option is only valid when listing migratable SR-IOV logical port information or virtual I/O information.

--redundantvnicbkdev
    When listing virtual I/O information, use this option to specify the backing device redundancy requirement of the partition's virtual NICs on the destination managed system. Valid values are **1** if the virtual NIC backing device redundancy is required to be maintained, or **2** if the virtual NIC backing device redundancy is to be maintained if possible. If this option is not specified, this option defaults to the value **1**.

    If this option has a value of **1**, the HMC must map every virtual NIC backing device to a virtual NIC backing device on the destination managed system. In addition, the HMC must maintain the VIOS redundancy the backing devices for a virtual NIC provide. For example, if two backing devices for a virtual NIC are hosted by two different VIOSs on the source managed system, then the backing devices for that virtual NIC must be hosted by two different VIOSs on the destination managed system.

    This option is only valid when listing virtual I/O information.

--sriovlogportcfg
    When listing migratable SR-IOV logical port information, use this option to specify the configuration requirements for the partition's migratable SR-IOV logical ports on the destination managed

system. Valid values are **1** if the migratable SR-IOV logical port configuration is required to be maintained, or **2** if the migratable SR-IOV logical port configuration is to be maintained if possible. If this option is not specified, this option defaults to the value **1**.

Specifying a value of **2** for this option will allow the HMC to map the partition's migratable SR-IOV logical ports to SR-IOV logical ports with different port VLAN ID, allowed VLAN IDs, allowed MAC addresses or capacity configurations on the destination managed system.

This option is only valid when listing migratable SR-IOV logical port information.

--vniccfg
When listing virtual I/O information, use this option to specify the configuration requirements for the partition's virtual NICs on the destination managed system. Valid values are **1** if the virtual NIC configuration is required to be maintained, or **2** if the virtual NIC configuration is to be maintained if possible. If this option is not specified, this option defaults to the value **1**.

Specifying a value of **2** for this option will allow the HMC to map the partition's virtual NICs to virtual NICs with different allowed VLAN IDs or maximum capacity configurations on the destination managed system.

This option is only valid when listing virtual I/O information.

--viosfcportlabel
When listing virtual I/O information, use this option to specify whether VIOS FC port labels are to be used when determining mappings of virtual FC adapters. Valid values are **1** if VIOS FC port labels are required to be used, or **2** if VIOS FC port labels are to be used if possible. If this option is not specified, it defaults to the value of the VIOS FC port label override option for the managed system (see the **labelvios** and **lslabelvios** commands).

This option is only valid when listing virtual I/O information.

--viosstoragelabel
When listing virtual I/O information, use this option to specify whether VIOS virtual FC and virtual SCSI group labels are to be used when determining mappings of virtual FC and virtual SCSI adapters. Valid values are **1** if VIOS virtual FC and virtual SCSI group labels are required to be used, or **2** if VIOS virtual FC and virtual SCSI group labels are to be used if possible. If this option is not specified, it defaults to the value of the VIOS storage group label override option for the managed system (see the **labelvios** and **lslabelvios** commands).

This option is only valid when listing virtual I/O information.

--viosvniclabel
When listing virtual I/O information, use this option to specify whether VIOS virtual NIC group labels are to be used when determining mappings of virtual NICs. Valid values are **1** if VIOS virtual NIC group labels are required to be used, or **2** if VIOS virtual NIC group labels are to be used if possible. If this option is not specified, it defaults to the value of the VIOS virtual NIC group label override option for the managed system (see the **labelvios** and **lslabelvios** commands).

This option is only valid when listing virtual I/O information.

--filter The filter(s) to apply to the resources to be listed. Filters are used to select which resources are to be listed. If no filters are used, then all of the resources will be listed. For example, partition information can be listed by using a filter to specify the names or IDs of the partitions to list. Otherwise, if no filter is used, then information for all of the partitions in the managed system will be listed.

The filter data consists of filter name/value pairs, which are in comma separated value (CSV)

format. The filter data must be enclosed in double quotes.

The format of the filter data is as follows:

"*filter-name=value*"

Note that the filters accept a comma separated list of values, as follows:

""*filter-name=value,value,...*""

When a list of values is specified, the filter name/value pair must be enclosed in double quotes.
Depending on the shell being used, nested double quote characters may need to be preceded by an
escape character, which is usually a '\' character.

Valid filter names:
    lpar_names | **lpar_ids**
        One of these filters is required when listing memory
        or virtual I/O information, or mappings of migratable
        SR-IOV logical ports, and only one partition can be
        specified. These filters are optional when listing
        partition information or partition configuration
        information, and if specified, multiple partitions
        can be specified.

This option is not valid when listing HMC or managed system information.

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no
attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be
displayed. The attribute values displayed will be separated by the delimiter which was specified
with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of
only selected attributes are desired to be displayed.

Descriptions of selected command attributes:
    pmem_volumes
        A comma separated list of persistent memory volumes
        assigned to a partition. Each persistent memory
        volume has the following format:

        name|size|affinity|UUID|type

--header
        Display a header record, which is a delimiter separated list of attribute names for the attribute val-
ues that will be displayed. This header record will be the first record displayed. This option is
only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES
List partition remote restart information for all partitions in the managed system **system1**:

lsrrstartlpar -r lpar -m system1

List partition remote restart information for partition **lp1** only:

lsrrstartlpar -r lpar -m system1 --filter "lpar_names=lp1"

List partition configuration information for all partitions in the managed system **9119-MME*123A123** that are simplified remote restart capable:

lsrrstartlpar -r lparcfg -m 9119-MME*123A123

List the partition remote restart capabilities for the HMC:

lsrrstartlpar -r mc

List the required memory for partition **lpar1** and list the available memory on destination managed system **system2**:

lsrrstartlpar -r mem -m system1 -t system2 --filter "lpar_names=lpar1"

List the partition remote restart capabilities for managed system **system1**:

lsrrstartlpar -r sys -m system1

List possible and suggested mappings of the migratable SR-IOV logical ports in the partition **lp1** to SR-IOV logical ports in managed system **system2**:

lsrrstartlpar -r sriov -m system1 -t system2 --filter "lpar_names=lp1"

List possible and suggested mappings of the virtual FC adapters, virtual SCSI adapters, and virtual NICs in the partition with ID **1** to virtual I/O servers in managed system **system2**:

lsrrstartlpar -r virtualio -m system1 -t system2 --filter "lpar_ids=1"

List possible and suggested mappings of the virtual FC adapters, virtual SCSI adapters, and virtual NICs in partition **aix1** to virtual I/O servers in managed system **system2**, when **system2** is managed by the HMC with host name **hmc2**. In addition, list all possible mappings of the partition's virtual NICs, even those that do not maintain the current backing device redundancy of the virtual NICs:

 mkauthkeys --ip hmc2 -u hmc2user

 lsrrstartlpar -r virtualio -m system1 -t system2 --ip hmc2 -u hmc2user
 --filter "lpar_names=aix1" --redundantvnicbkdev 2

ENVIRONMENT
       None

BUGS
       None

AUTHOR
       IBM Austin

SEE ALSO
       labelvios, **lslabelvios**, **rrstartlpar**

NAME
lssacfg - list Service Agent configuration information

SYNOPSIS
lssacfg -t {**authuser** | **callhome** | **callhomeserver** | **connmon** |
       connmontimer | **custinfo** | **email** | **ftpfirewall** |
       ftpoffload | **snmp** | **snmpopt** | **snmptrapnames**}
  [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
lssacfg lists Service Agent configuration information.

OPTIONS
-t   The type of Service Agent configuration information to list. Valid values are **authuser** for the users that are authorized to access information collected by Electronic Service Agent for the systems managed by this Hardware Management Console (HMC), **callhome** for the call-home states for the systems managed by this HMC, **callhomeserver** for the call-home server settings for this HMC, **connmon** for the connection monitoring setting for the systems managed by this HMC, **connmontimer** for connection monitoring timer settings for this HMC, **custinfo** for customer information settings, **email** for customer email notification settings, **ftpfirewall** for FTP firewall settings, **ftpoffload** for FTP offload server settings, **snmp** for SNMP trap notification settings, **snmpopt** for SNMP options, and **snmptrapnames** to list all defined SNMP traps.

-F   A delimiter separated list of attribute names representing the desired attribute values to display. If this option is specified without any attribute names, then all of the attributes will be displayed.

            When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

            This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
            Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES
Display the users that are authorized to access information collected by Electronic Service Agent for the systems managed by this HMC:

lssacfg -t authuser

Display the call-home states for the systems managed by this HMC:

lssacfg -t callhome

Display the call-home server settings for this HMC:

lssacfg -t callhomeserver

Display the connection monitoring setting for the systems managed by this HMC:

lssacfg -t connmon

Display the connection monitoring timer settings for this HMC:

lssacfg -t connmontimer

Display the customer information settings for this HMC:

lssacfg -t custinfo

Display the Service Agent customer email notification settings:

lssacfg -t email

Display the FTP firewall settings used for offloading service information:

lssacfg -t ftpfirewall

Display the FTP server host name and directory used for offloading service information:

lssacfg -t ftpoffload -F host,directory

Display the Service Agent configuration for emitting SNMP trap notifications:

lssacfg -t snmp

Display the Service Agent SNMP options:

lssacfg -t snmpopt

Display all defined Service Agent SNMP traps:

lssacfg -t snmptrapnames

ENVIRONMENT
   None
BUGS
   None
AUTHOR
   IBM Austin
SEE ALSO
   chsacfg

NAME

lsspsnmp - list service processor Simple Network Management Protocol configuration

SYNOPSIS

lsspsnmp -m *managed-system* [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

lsspsnmp lists the Simple Network Management Protocol (SNMP) trap-based alert target configuration for an OpenPower managed system.

OPTIONS

-m The name of the OpenPower managed system for which to list SNMP trap-based alert target configuration. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

-F A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

   When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

   This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header

   Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help Display the help text for this command and exit.

EXAMPLES

List the SNMP trap-based alert target configuration for OpenPower managed system **bmcSys**:

  lsspsnmp -m bmcSys

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chspsnmp

NAME

lsstat - list statistics

SYNOPSIS

lsstat -r {**samplerate** | **vlan**} [**-m** *managed-system*]
 [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

lsstat lists statistics collected for a *managed-system*. This command also lists the Hardware Management Console (HMC) settings, such as the sample rate, for statistics collection.

When listing statistics collected for a *managed-system*, only the last sample collected is listed.

OPTIONS

-r   The type of resources to list. Valid values are **samplerate** for the sample rate for statistics collection, and **vlan** for Virtual Local Area Network (VLAN) statistics data.

-m   The name of the managed system for which statistics data or the HMC settings for statistics collection are to be listed. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm**sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm**sssssss form must be used if there are multiple managed systems with the same user-defined name.

This option is required when listing statistics data. This option is not required when listing the HMC settings for statistics collection. If it is not specified, then the settings for all of the systems that support statistics collection and are currently managed by this HMC will be listed.

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
         Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help Display the help text for this command and exit.

EXAMPLES

List the VLAN statistics data for managed system **mySystem**:

lsstat -r vlan -m mySystem

List the sample rates for all managed systems that support VLAN statistics collection:

lsstat -r samplerate

ENVIRONMENT

None

BUGS

None

AUTHOR
     IBM Austin

SEE ALSO
     chstat

NAME
>   lssvc - list service status and settings

SYNOPSIS
>   **lssvc -s** {**snmp** | **cloudconn**} [**-r** {**trapnames** | **trapconfig**}]
>   [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
>   **lssvc** lists the status and settings for a service, such as SNMP or cloud connector, on the Hardware Manag-
>   ment Console (HMC).

OPTIONS
>   **-s**   The service for which to list status and settings. Valid values are **snmp** for Simple Network Man-
>   agement Protocol (SNMP) version 3, and **cloudconn** for the cloud connector.
>
>   **-r**   The type of service resources to list. Valid values are **trapnames** to list all of the traps supported
>   by the SNMPv3 agent on the HMC, and **trapconfig** to list the SNMPv3 trap notification list. If
>   this option is omitted, then general status information about the SNMPv3 agent on the HMC will
>   be listed.
>
>   The option is only valid when listing SNMP status and settings.
>
>   **-F**   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no
>   attribute names are specified, then values for all of the attributes will be displayed.
>
>   When this option is specified, only attribute values will be displayed. No attribute names will be
>   displayed. The attribute values displayed will be separated by the delimiter which was specified
>   with this option.
>
>   This option is useful when only attribute values are desired to be displayed, or when the values of
>   only selected attributes are desired to be displayed.
>
>   **--header**
>   Display a header record, which is a delimiter separated list of attribute names for the attribute val-
>   ues that will be displayed. This header record will be the first record displayed. This option is
>   only valid when used with the **-F** option.
>
>   **--help**   Display the help text for this command and exit.

EXAMPLES
>   List status information about the SNMPv3 agent on the HMC:
>
>   **lssvc -s snmp**
>
>   List all of the traps supported by the SNMPv3 agent on the HMC:
>
>   **lssvc -s snmp -r trapnames**
>
>   List the SNMPv3 trap notification list:
>
>   **lssvc -s snmp -r trapconfig**
>
>   List cloud connector status and settings on the HMC:
>
>   **lssvc -s cloudconn**

ENVIRONMENT
>   None

BUGS
        None
AUTHOR
        IBM Austin
SEE ALSO
        chsvc

NAME
> lssvceventfile - list serviceable event file

SYNOPSIS
> **lssvceventfile -f** *file* **-p** *problem-number* **-h** *analyzing-HMC*
> [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
> **lssvceventfile** lists the contents of a file associated with a serviceable event.

OPTIONS
> **-f**   The name of the file to display. The only valid value is **PMap.eed** for the Partition Map file.
>
> **-p**   The problem number of the serviceable event for which to display the file.
>
> **-h**   The analyzing HMC for the serviceable event for which to display the file.
>
> **-F**   A delimiter separated list of attribute names representing the desired attribute values to display. If this option is specified without any attribute names, then all of the attributes will be displayed.
>
> When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.
>
> This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.
>
> **--header**
> Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.
>
> **--help**   Display the help text for this command and exit.

EXAMPLES
> Display the Partition Map file associated with serviceable event **5** and analyzing HMC **VM-Vb07-f36/0d44458**:
>
> **lssvceventfile -f PMap.eed -p 5 -h VM-Vb07-f36/0d44458**

ENVIRONMENT
> None

BUGS
> None

AUTHOR
> IBM Austin

SEE ALSO
> **lssvcevents**

NAME

      lssvcevents - list console or serviceable events

SYNOPSIS

      lssvcevents -t {**console** | **hardware**}
      [**-d** *number-of-days* | **-i** *number-of-minutes*]
      [**-m** *managed-system*] [**-n** *number-of-serviceable-events*]
      [**--filter** "*filter-data*"]
      [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

      lssvcevents lists console events logged by the Hardware Management Console (HMC), or serviceable events.

OPTIONS

      -t   The type of events to list. Valid values are **console** for console events, or **hardware** for serviceable events.

      -d   The number of days prior to today for which events will be listed. Events that occurred today will be listed, along with any events that occurred during the past *number-of-days* days.

              If this option is omitted when listing console events, console events that occurred within the past 7 days will be listed.

              If both this option and the **-n** option are omitted when listing serviceable events, all serviceable events will be listed.

      -i   The number of minutes to go back and search for events. This search is based on the time that the event was initially created on the HMC, and is not affected by later updates to the event.

      -m   The name of the managed system for which serviceable events are to be listed. The name may either be the user-defined name for the managed system, or be in the form *tttt*-*mmm**sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt*-*mmm**sssssss form must be used if there are multiple managed systems with the same user-defined name.

              If both this option and the **-n** option are omitted, all serviceable events will be listed.

              This option is only valid when listing serviceable events.

      -n   The maximum number of serviceable events to list.

              This option is only valid when listing serviceable events.

      --filter The filter to apply to the serviceable events to be listed. A filter is used to select which serviceable events are to be listed. For example, only open serviceable events can be listed by using a filter to specify the status (open) of the serviceable events to list. If a filter is not used, then all serviceable events will be listed.

              The filter data consists of filter name/value pairs, which are in comma separated value (CSV) format. The filter data must be enclosed in double quotes.

              The format of the filter data is as follows:

              "*filter-name*=*value*,*filter-name*=*value*,..."

              Note that certain filters accept a comma separated list of values, as follows:

              ""*filter-name*=*value*,*value*,...",..."

When a list of values is specified, the filter name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

Multiple values can be specified for each filter.

Valid filter names for serviceable events:
>**problem_nums**
>>Specify event problem number(s)
>**status**
>>Specify event status. Valid values are
>>**open** or **closed**.
>**approval_state**
>>Specify event approval state. Valid values
>>are **approved** or **unapproved**.

This option is not valid when listing console events.

-F A delimiter separated list of attribute names for the desired attribute values to be displayed for each event. If no attribute names are specified, then values for all of the attributes for each event will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
>Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help Display the help text for this command and exit.

EXAMPLES
List the serviceable events that occurred today:

lssvcevents -t hardware -d 0

List the console events that occurred within the past 3 days:

lssvcevents -t console -d 3

List all of the open serviceable events for the system **system1**:

lssvcevents -t hardware -m system1 --filter "status=open"

List only the problem numbers and status of all serviceable events for the system that occurred within the last 7 days, and separate the output values with a colon:

lssvcevents -t hardware -m 9406-570*101234A -d 7 -F
 problem_num:status

ENVIRONMENT
        None
BUGS
        None
AUTHOR
        IBM Austin

NAME
         lssyscfg - list system resources

SYNOPSIS
         lssyscfg -r {**lpar** | **prof** | **sys** | **sysprof**} [**-m** *managed-system*]
          [**--osrefresh**] [**--lastvalidcfg**]
          [**--filter "***filter-data***"**]
          [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
         lssyscfg lists the attributes of partitions, partition profiles, or system profiles for the *managed-system*. It can
         also list the attributes of the *managed-system*, and of all of the systems managed by this Hardware Manage-
         ment Console (HMC).

OPTIONS
         -r   The type of resources to list. Valid values are **lpar** for partitions, **prof** for partition profiles, **sys** for
                   managed systems, and **sysprof** for system profiles.

         -m   The name of either the managed system to list, or the managed system which has the system
                   resources to list. The name may either be the user-defined name for the managed system, or be in
                   the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the
                   serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multi-
                   ple managed systems with the same user-defined name.

                   This option is required when listing partitions, partition profiles, or system profiles. This option is
                   optional when listing managed systems, and if it is omitted, then all of the systems managed by
                   this HMC will be listed.

         --osrefresh
                   When listing partitions, specify this option to refresh the current operating system version infor-
                   mation for the partitions first. If a partition does not have an active RMC connection to the man-
                   agement console, **Unknown** will be displayed for that partition's operating system version infor-
                   mation.

                   Specifying this option may cause this command to take a long time to complete if many partitions
                   are being listed or there are network issues.

                   This option is only valid when listing partitions.

         --lastvalidcfg
                   When listing partition profiles, specify this option to include the last valid configuration partition
                   profiles.

                   This option is only valid when listing partition profiles.

         --filter The filter(s) to apply to the resources to be listed. Filters are used to select which resources of the
                   specified resource type are to be listed. If no filters are used, then all of the resources of the speci-
                   fied resource type will be listed. For example, specific partitions can be listed by using a filter to
                   specify the names or IDs of the partitions to list. Otherwise, if no filter is used, then all of the par-
                   titions in the managed system will be listed.

                   The filter data consists of filter name/value pairs, which are in comma separated value (CSV) for-
                   mat. The filter data must be enclosed in double quotes.

                   The format of the filter data is as follows:

                   "*filter-name=value,filter-name=value,...*"

                   Note that certain filters accept a comma separated list of values, as follows:

""*filter-name=value*,*value*,...",..."

When a list of values is specified, the filter name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

Multiple values can be specified for each filter.

Valid filter names for partitions:
>**lpar_names** | **lpar_ids** | **work_groups**
>>Only one of these three filters may be
>>specified.

Valid filter names for partition profiles:
>**lpar_names** | **lpar_ids**, **profile_names**

Valid filter names for system profiles:
>**profile_names**

This option is not valid when listing managed systems.

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed for each resource. If no attribute names are specified, then values for all of the attributes for the resource will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

To display the values of only selected properties of the **sriov_eth_logical_ports** or **vnic_adapters** partition profile attributes, use the following format:

*attribute-name=property-name***:***property-name***:***...*

If no property names are specified, then values for all of the properties for each attribute will be displayed.

Descriptions of selected command attributes:
>**capabilities**
>>A comma separated list of managed system capabilities.
>>Capabilities that are supported by the managed system
>>are displayed in the list. Capabilities that are not
>>supported are not displayed.
>**uptime**
>>The amount of time the managed system or partition has
>>been running since its last restart. The format of
>>this field is:
>>*days hours***:***minutes*

--header
>Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES

List all systems managed by this HMC:

lssyscfg -r sys

List only the user-defined name, machine type and model, and serial number for all of the systems managed by this HMC, and separate the output values with a colon:

lssyscfg -r sys -F name:type_model:serial_num

List the managed system system1:

lssyscfg -r sys -m system1

List all of the capabilities supported by managed system system1:

lssyscfg -r sys -m system1 -F capabilities

List all partitions in the managed system, and only display attribute values for each partition, following a header of attribute names:

lssyscfg -r lpar -m 9406-570*1234567 -F --header

List the partitions lpar1, lpar2, and lpar3:

**lssyscfg -r lpar -m system1 --filter ""lpar_names=lpar1,
 lpar2,lpar3""**

List only the names, IDs, and states of partitions lpar1, lpar2, and lpar3, and separate the output values with a comma:

**lssyscfg -r lpar -m system1 --filter ""lpar_names=lpar1,
 lpar2,lpar3"" -F name,lpar_id,state**

List the RMC connection state, operating system version, and DLPAR capabilities via RMC connection for partition aix1:

**lssyscfg -r lpar -m system1 -F rmc_state,os_version,dlpar_mem_capable,
 dlpar_proc_capable,dlpar_io_capable --filter "lpar_names=aix1"**

List the operating system version and remote OS shutdown capablity for partition IBMi1:

lssyscfg -r lpar -m system1 -F os_version,remote_osshutdown_capable --filter "lpar_names=IBMi1"

Refresh the operating system version information for partition aix1, then list the partition:

lssyscfg -r lpar -m system1 --filter "lpar_names=aix1" --osrefresh

List all partition profiles in the managed system:

lssyscfg -r prof -m 9406-570*1234567

List all partition profiles in the managed system and include the last valid configuration partition profiles:

lssyscfg -r prof -m 9406-570*1234567 --lastvalidcfg

List all partition profiles defined for partition lpar2:

lssyscfg -r prof -m system1 --filter "lpar_names=lpar2"

List the partition profiles prof1 and prof2 defined for the partition that has an ID of 2:

**lssyscfg -r prof -m system1 --filter "lpar_ids=2,
 "profile_names=prof1,prof2""**

List the values of all properties for all SR-IOV ethernet logical ports in all partition profiles in the managed system:

lssyscfg -r prof -m system1 -F sriov_eth_logical_ports

List the values of specific properties for all SR-IOV ethernet logical ports in all partition profiles in the managed system:

**lssyscfg -r prof -m system1 -F sriov_eth_logical_ports=config_id:
 adapter_id:logical_port_id:port_vlan_id**

List all system profiles defined for the managed system:

lssyscfg -r sysprof -m 9406-520*100128A

List the system profile sysprof1:

**lssyscfg -r sysprof -m system1 --filter "profile_names=
 sysprof1"**

ENVIRONMENT
       None
BUGS
       None
AUTHOR
       IBM Austin
SEE ALSO
       chsyscfg, **mksyscfg**, **rmsyscfg**, **lshwres**

NAME

lssysconn - list system connections

SYNOPSIS

To list connection information for all managed systems:

lssysconn -r all [**-F** [*attribute-names*] [**--header**]] [**--help**]

To list all IP addresses that cannot be automatically discovered when using Dynamic Host Configuration Protocol (DHCP):

lssysconn -r nondiscover [**-F** [*attribute-names*] [**--header**]]
        [**--help**]

To list Virtualization Management Interface (VMI) network interface information for an Enterprise Baseboard Management Controller (BMC) based managed system:

lssysconn -r vmi -m *managed-system*
        [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

lssysconn lists connection information for all of the systems managed by this Hardware Management Console (HMC). Connection information for all systems to which this HMC is connected or attempting to connect is listed.

lssysconn also lists IP addresses that cannot be automatically discovered by this HMC when using DHCP. If this HMC is set up as a DHCP server on a private network, whenever the Remove Connection task or the **rmsysconn** command is run to remove a managed system from the HMC, the HMC places the IP address(es) of that system in a list of removed IP addresses. Any IP address in that list will not be rediscovered when reattached to the HMC. The **lssysconn -r nondiscover** command can be used to display the contents of that list of removed IP addresses.

lssysconn also lists VMI network interface information for an Enterprise BMC-based managed system.

OPTIONS

-r   The type of resources for which to list connection information. Valid values are **all** for all managed systems, **nondiscover** for all IP addresses that cannot be automatically discovered by this HMC when using DHCP, and **vmi** for VMI network interface information for an Enterprise BMC-based managed system.

-m   The name of the Enterprise BMC-based managed system for which to list VMI network interface information. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed for each resource. If no attribute names are specified, then values for all of the attributes for each resource will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header

Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

       --help   Display the help text for this command and exit.

EXAMPLES

List connection information for all systems managed by this HMC:

lssysconn -r all

List only the IP address and connection state for all of the systems managed by this HMC, and separate the output values with a colon:

lssysconn -r all -F ipaddr:state

List all IP addresses that cannot be automatically discovered by this HMC when using DHCP:

lssysconn -r nondiscover

List VMI network interface information for the Enterprise BMC-based managed system **ebmcSys**:

lssysconn -r vmi -m ebmcSys

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

lssyscfg, **chsysconn**, **mksysconn**, **rmsysconn**

NAME

lssysplan - list system plans

SYNOPSIS

lssysplan [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

lssysplan lists the system plan files in the system plan file directory on the Hardware Management Console (HMC).

OPTIONS

-F A delimiter separated list of attribute names for the desired attribute values to be displayed for each file. If no attribute names are specified, then values for all of the attributes for each file will be displayed.

    When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

    This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

    The possible attributes that can be listed are: **name**, **description**, **source**, **version**, and **date**.

--header

    Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. The header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help Display the help text for this command and exit.

EXAMPLES

List all of the system plan files on this HMC:

lssysplan

List the system plan files on this HMC, and only display attribute values for each file, following a header of attribute names:

lssysplan -F --header

List only the names, dates, and descriptions of the system plan files on this HMC:

lssysplan -F name,date,description

List only the names and descriptions of the system plan files on this HMC, following a header of attribute names:

lssysplan -F name,description --header

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO
      deploysysplan, cpsysplan, mksysplan, rmsysplan

NAME

lstskey - list trusted system key information

SYNOPSIS

lstskey -m *managed-system* [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

lstskey lists trusted system key information for the *managed-system*. The trusted system key is used for virtual Trusted Platform Module (vTPM) data encryption.

OPTIONS

-m   The name of the managed system for which to list trusted system key information. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm**sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm**sssssss form must be used if there are multiple managed systems with the same user-defined name.

-F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES

List the trusted system key information for managed system **system1**:

lstskey -m system1

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chtskey

NAME
> lsupdhmc - list Hardware Management Console updates

SYNOPSIS
> **lsupdhmc -t ibmwebsite** [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
> **lsupdhmc** lists available Hardware Management Console (HMC) updates from the IBM Fix Central website. **lsupdhmc** lists the updates available for the HMC running this command.

OPTIONS
> **-t**   The type of repository to query for HMC updates. The only valid value is **ibmwebsite** for the IBM Fix Central website.
>
> **-F**   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.
>
> When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.
>
> This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.
>
> **--header**
> Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.
>
> **--help**   Display the help text for this command and exit.

EXAMPLES
> List the updates available for this HMC on the IBM Fix Central website:
>
> **lsupdhmc -t ibmwebsite**

ENVIRONMENT
> None

BUGS
> None

AUTHOR
> IBM Austin

SEE ALSO
> **updhmc**

NAME
    lsupgfiles - list Hardware Management Console upgrades

SYNOPSIS
    lsupgfiles -r ibmwebsite [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
    lsupgfiles lists available Hardware Management Console (HMC) upgrades from the IBM Fix Central website. **lsupgfiles** lists the upgrades available for the HMC running this command.

OPTIONS
    -r   The repository to query for HMC upgrades. The only valid value is **ibmwebsite** for the IBM Fix
             Central website.

    -F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no
             attribute names are specified, then values for all of the attributes will be displayed.

             When this option is specified, only attribute values will be displayed. No attribute names will be
             displayed. The attribute values displayed will be separated by the delimiter which was specified
             with this option.

             This option is useful when only attribute values are desired to be displayed, or when the values of
             only selected attributes are desired to be displayed.

    --header
             Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is
             only valid when used with the **-F** option.

    --help   Display the help text for this command and exit.

EXAMPLES
    List the upgrades available for this HMC on the IBM Fix Central website:

    lsupgfiles -r ibmwebsite

ENVIRONMENT
    None

BUGS
    None

AUTHOR
    IBM Austin

SEE ALSO
    getupgfiles

NAME
> lsusrtca - Displays welcome text

SYNOPSIS
> **lsusrtca -t** {**w** | **b**} [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
> **lsusrtca** displays the Web user interface welcome text or the SSH banner text that is shown before users log onto the Hardware Management Console (HMC).

OPTIONS
> **-t**   The type of text to display. Valid values are **w** for the welcome text that is displayed on the Web user interface before users log onto the HMC, and **b** for the SSH banner text that is displayed before users remotely log into the HMC using SSH.
>
> **-F**   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no attribute names are specified, then values for all of the attributes will be displayed.
>
> When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.
>
> This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.
>
> **--header**
> Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.
>
> **--help**   Display the help text for this command and exit.

EXAMPLES
> Display the welcome text that is displayed on the Web user interface before a user logs in:
>
> **lsusrtca -t w**
>
> Display the SSH banner text that is displayed before a user logs in remotely using SSH:
>
> **lsusrtca -t b**

ENVIRONMENT
> None

BUGS
> None

AUTHOR
> IBM Austin

SEE ALSO
> **chusrtca**

NAME

lsvet - list Capacity on Demand advanced functions activation information

SYNOPSIS

lsvet -t {**code** | **hist**} **-m** *managed-system*
 [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION

lsvet lists Capacity on Demand (CoD) advanced functions activation information for the *managed-system*. CoD advanced functions include PowerVM and Enterprise Enablement.

CoD advanced functions are sometimes referred to as Virtualization Engine systems technologies.

OPTIONS

-t   The type of information to list. Valid values are **code** for information used to generate CoD advanced functions activation codes, and **hist** for the CoD advanced functions activation history log.

-m   The name of the managed system for which information is to be listed. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*ssssssss*, where *tttt* is the machine type, *mmm* is the model, and *ssssssss* is the serial number of the managed system. The *tttt-mmm*ssssssss* form must be used if there are multiple managed systems with the same user-defined name.

-F   A delimiter separated list of attribute names representing the desired attribute values to display. If this option is specified without any attribute names, then all of the attributes will be displayed.

When this option is specified, only attribute values will be displayed. No attribute names will be displayed. The attribute values displayed will be separated by the delimiter which was specified with this option.

This option is useful when only attribute values are desired to be displayed, or when the values of only selected attributes are desired to be displayed.

--header
Display a header record, which is a delimiter separated list of attribute names for the attribute values that will be displayed. This header record will be the first record displayed. This option is only valid when used with the **-F** option.

--help   Display the help text for this command and exit.

EXAMPLES

Display activation code generation information:

lsvet -m sys1 -t code

Display the activation history log:

lsvet -m 9117-570*1001213 -t hist

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chvet

NAME
　　　　lsviosbk - list VIOS backup files

SYNOPSIS
　　　　lsviosbk [**--filter** "*filter-data*"]
　　　　 [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
　　　　lsviosbk lists Virtual I/O Server (VIOS) backup files on the Hardware Management Console (HMC).

OPTIONS
　　　　--filter　　The filter to apply to the VIOS backup files to list. The filter is used to select which files to list. If
　　　　　　　　a filter is not specified, then all VIOS backup files on the HMC will be listed.

　　　　　　　　The filter data consists of filter name/value pairs, which are in comma separated value (CSV) for-
　　　　　　　　mat. The filter data must be enclosed in double quotes.

　　　　　　　　The format of the filter data is as follows:

　　　　　　　　"*filter-name=value*"

　　　　　　　　Note that the filters accept a comma separated list of values, as follows:

　　　　　　　　""*filter-name=value,value,...*""

　　　　　　　　When a list of values is specified, the filter name/value pair must be enclosed in double quotes.
　　　　　　　　Depending on the shell being used, nested double quote characters may need to be preceded by an
　　　　　　　　escape character, which is usually a '\' character.

　　　　　　　　Multiple values can be specified for each filter.

　　　　　　　　Valid filter names:
　　　　　　　　　　types
　　　　　　　　　　　　Specify one or more of the values **viosioconfig**, **vios**,
　　　　　　　　　　　　ssp
　　　　　　　　　　vios_names | **vios_ids** | **vios_uuids**
　　　　　　　　　　sys_names | **sys_mtms**

　　　　-F　　　　A delimiter separated list of attribute names for the desired attribute values to be displayed. If no
　　　　　　　　attribute names are specified, then values for all of the attributes will be displayed.

　　　　　　　　When this option is specified, only attribute values will be displayed. No attribute names will be
　　　　　　　　displayed. The attribute values displayed will be separated by the delimiter which was specified
　　　　　　　　with this option.

　　　　　　　　This option is useful when only attribute values are desired to be displayed, or when the values of
　　　　　　　　only selected attributes are desired to be displayed.

　　　　--header
　　　　　　　　Display a header record, which is a delimiter separated list of attribute names for the attribute val-
　　　　　　　　ues that will be displayed. This header record will be the first record displayed. This option is
　　　　　　　　only valid when used with the **-F** option.

　　　　--help　　Display the help text for this command and exit.

EXAMPLES
　　　　List all VIOS backup files on this HMC:

　　　　lsviosbk

List all of the VIOS backup files for **vios1** and **vios2**:

lsviosbk --filter ""vios_names=vios1,vios2""

List all Shared Storage Pool configuration backup files for the VIOSs on managed system **sys1**:

lsviosbk --filter "types=ssp,sys_names=sys1"

ENVIRONMENT
     None

BUGS
     None

AUTHOR
     IBM Austin

SEE ALSO
     chviosbk, **cpviosbk**, **mkviosbk**, **rmviosbk**, **rstviosbk**

NAME
          lsviosimg - list VIOS installation images

SYNOPSIS
          lsviosimg [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
          lsviosmg lists Virtual I/O Server (VIOS) installation images on the Hardware Management Console
          (HMC).

OPTIONS
          -F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no
                      attribute names are specified, then values for all of the attributes will be displayed.

                      When this option is specified, only attribute values will be displayed. No attribute names will be
                      displayed. The attribute values displayed will be separated by the delimiter which was specified
                      with this option.

                      This option is useful when only attribute values are desired to be displayed, or when the values of
                      only selected attributes are desired to be displayed.

          --header
                      Display a header record, which is a delimiter separated list of attribute names for the attribute val-
                      ues that will be displayed. This header record will be the first record displayed. This option is
                      only valid when used with the **-F** option.

          --help   Display the help text for this command and exit.

EXAMPLES
          List the VIOS installation images on this HMC:

          lsviosimg

          List just the names of the VIOS installation images on this HMC:

          lsviosimg -F name

ENVIRONMENT
          None

BUGS
          None

AUTHOR
          IBM Austin

SEE ALSO
          chviosimg, **cpviosimg**, **installios**, **rmviosimg**

NAME
     lsviosupd - list VIOS update images

SYNOPSIS
     lsviosupd -r {**disk** | **ibmwebsite**} [**-m** *managed-system*]
      [{**-p** *VIOS-name* | **--id** *VIOS-ID*}]
      [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
     lsviosupd lists Virtual I/O Server (VIOS) update images on the Hardware Management Console (HMC) or
     the IBM Fix Central website.

OPTIONS
     -r   The repository to query for VIOS update images. Valid values are **disk** for the HMC hard disk
                 and **ibmwebsite** for the IBM Fix Central website.

     -m   The name of the managed system which has the VIOS for which to query the IBM Fix Central
                 website for update images. The name may either be the user-defined name for the managed sys-
                 tem, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and
                 sssssss is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if
                 there are multiple managed systems with the same user-defined name.

                 This option is required when querying the IBM Fix Central website for update images. Otherwise,
                 this option is not valid.

     -p   The name of the VIOS for which to query the IBM Fix Central website for update images.

                 You must either use this option to specify the name of the VIOS or use the **--id** option to specify
                 the ID of the VIOS. The **-p** and **--id** options are mutually exclusive.

                 This option is required when querying the IBM Fix Central website for update images. Otherwise,
                 this option is not valid.

     --id   The ID of the VIOS for which to query the IBM Fix Central website for update images.

                 You must either use this option to specify the ID of the VIOS or use the **-p** option to specify the
                 name of the VIOS. The **--id** and **-p** options are mutually exclusive.

                 This option is required when querying the IBM Fix Central website for update images. Otherwise,
                 this option is not valid.

     -F   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no
                 attribute names are specified, then values for all of the attributes will be displayed.

                 When this option is specified, only attribute values will be displayed. No attribute names will be
                 displayed. The attribute values displayed will be separated by the delimiter which was specified
                 with this option.

                 This option is useful when only attribute values are desired to be displayed, or when the values of
                 only selected attributes are desired to be displayed.

     --header
                 Display a header record, which is a delimiter separated list of attribute names for the attribute val-
                 ues that will be displayed. This header record will be the first record displayed. This option is
                 only valid when used with the **-F** option.

     --help   Display the help text for this command and exit.

EXAMPLES

List the VIOS update images on this HMC:

lsviosupd -r disk

List the VIOS update images on the IBM Fix Central website that can be used to update VIOS **vios1**:

lsviosupd -r ibmwebsite -m sys1 -p vios1

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chviosupd, **cpviosimg**, **rmviosupd**, **updvios**

NAME
>   lsvsn - list virtual serial numbers

SYNOPSIS
>   **lsvsn -m** *managed-system* **-t** {**assigned** | **unassigned** | **backup**}
>   [**-f** *file*] [**-F** [*attribute-names*] [**--header**]] [**--help**]

DESCRIPTION
>   **lsvsn** lists virtual serial numbers on the *managed-system*.

OPTIONS
>   **-m**   The name of the managed system for which to list virtual serial numbers. The name may either be
>   the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the
>   machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The
>   *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-
>   defined name.
>
>   **-t**   The type of virtual serial numbers to list. Specify **assigned** to list the virtual serial numbers that
>   are currently assigned to partitions on the *managed-system*. Specify **unassigned** to list the virtual
>   serial numbers on the *managed-system* that are not currently assigned to partitions. Specify
>   **backup** to list the virtual serial numbers in a backup file for the *managed-system*.
>
>   **-f**   The name of the virtual serial number backup file to list. Do not include the filename extension
>   **.VSN** when specifying *file*. If *file* is not fully qualified, *file* must exist in the
>   **/var/hsc/profiles/**serial-number**/VSN** directory on the HMC (*serial-number* is the serial number
>   of the managed system).
>
>   If the backup file is on removable media, the media must be present in the removable media device
>   and the device must be mounted with the **mount** command before this command is issued. The
>   **lsmediadev** command can be used to display all of the removable media devices on the HMC.
>
>   A virtual serial number backup file is automatically generated when profile data for a managed
>   system that supports virtual serial numbers is backed up.
>
>   If this option is omitted when listing virtual serial numbers in a backup file, the virtual serial num-
>   bers in the default backup file for the *managed-system* are listed.
>
>   This option is only valid when listing virtual serial numbers in a backup file.
>
>   **-F**   A delimiter separated list of attribute names for the desired attribute values to be displayed. If no
>   attribute names are specified, then values for all of the attributes will be displayed.
>
>   When this option is specified, only attribute values will be displayed. No attribute names will be
>   displayed. The attribute values displayed will be separated by the delimiter which was specified
>   with this option.
>
>   This option is useful when only attribute values are desired to be displayed, or when the values of
>   only selected attributes are desired to be displayed.
>
>   **--header**
>   Display a header record, which is a delimiter separated list of attribute names for the attribute val-
>   ues that will be displayed. This header record will be the first record displayed. This option is
>   only valid when used with the **-F** option.
>
>   **--help**   Display the help text for this command and exit.

EXAMPLES
>   List all of the virtual serial numbers currently assigned to partitions on the managed system:
>
>   **lsvsn -m sys1 -t assigned**

List all of the virtual serial numbers on the managed system that are not currently assigned to any partitions:

lsvsn -m sys1 -t unassigned

List the virtual serial numbers in the backup file **myBackup.VSN** on a USB flash memory device (a USB flash memory device must already be connected to the HMC):

lsmediadev (to obtain mount points)

mount /media/sdb1

lsvsn -m sys1 -t backup -f /media/sdb1/VSN/myBackup

List the virtual serial numbers in the file **backup_092420.VSN** (file **backup_092420.VSN** exists in the **/var/hsc/profiles/3413444/VSN** directory on the HMC):

lsvsn -m 8375-42A*3413444 -t backup -f backup_092420

List the virtual serial numbers in the default backup file for the managed system **sys1**:

lsvsn -m sys1 -t backup

ENVIRONMENT
> None

BUGS
> None

AUTHOR
> IBM Austin

SEE ALSO
> **lsmediadev**, **rmvsn**, **xfervsn**

NAME
     migrcfg - migrate configuration

SYNOPSIS
     migrcfg -m *managed-system* **-t 1 -f** *file* [**--help**]

DESCRIPTION
     migrcfg migrates partition configuration data to a *managed-system*.

OPTIONS
     -m   The name of the managed system to which to migrate the partition configuration data. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*ssssssss*, where *tttt* is the machine type, *mmm* is the model, and *ssssssss* is the serial number of the managed system. The *tttt-mmm*ssssssss* form must be used if there are multiple managed systems with the same user-defined name.

     -t   The migration data type. The only valid value is **1**.

     -f   The name of the file on floppy diskette that contains the partition configuration data to migrate.

     --help   Display the help text for this command and exit.

EXAMPLES
     migrcfg -m mySystem -t 1 -f cfgFile

ENVIRONMENT
     None

BUGS
     None

AUTHOR
     IBM Austin

SEE ALSO
     lssyscfg

NAME
        migrdbg - partition migration debug tools

SYNOPSIS
        To enable or disable automatic partition migration failure debug data collection:
            migrdbg -o {**e** | **d**} [**--help**]

        To manually collect partition migration debug data:
            migrdbg -o c [**-m** *managed-system*] [**-t** *target-managed-system*]
                [**-p** *partition-names* | **--id** *partition-IDs*]
                [**--tp** *target-partition-names* | **--tid** *target-partition-IDs*]
                [**--help**]

        To remove a partition migration debug data package:
            migrdbg -o r {**-f** *file* | **--all**} [**--help**]

DESCRIPTION
        migrdbg provides partition migration debug tools.

OPTIONS
        -o   The operation to perform.

                   Specify **e** to enable automatic collection of partition migration debug data on this management
                   console. When enabled, debug data will be collected automatically for every partition migration
                   that fails on this management console. If you are performing partition migrations to destination
                   managed systems that are managed by other management consoles, you should enable automatic
                   collection of partition migration debug data on those other management consoles also.

                   Specify **d** to disable automatic collection of partition migration debug data on this management
                   console.

                   Specify **c** to manually collect partition migration debug data on this management console after a
                   partition migration failure occurs when automatic collection of partition migration debug data on
                   this management console is not enabled. It is recommended that you collect the debug data as
                   close to the partition migration failure as possible. Performing another operation that affects the
                   same source or destination managed system may cause the partition migration debug data for that
                   managed system to be overwritten. If you perform multiple partition migrations with a single
                   migrlpar command, it is recommended that you use automatic collection of partition migration
                   debug data, since only debug data for the most recent partition migration is likely to be available
                   after the **migrlpar** command completes. If a failed partition migration was performed using dif-
                   ferent source and destination management consoles, you should collect partition migration debug
                   data on both management consoles.

                   Specify **r** to remove a partition migration debug data package from this management console.

        -m   The name of the source managed system for the partition migration for which you want to collect
                   debug data. The name may either be the user-defined name for the managed system, or be in the
                   form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial
                   number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple
                   managed systems with the same user-defined name.

                   If the source managed system is not managed by this management console, the debug data must be
                   collected from the management console that manages the source managed system.

        -t   The name of the target, or destination, managed system for the partition migration for which you
                   want to collect debug data. The name may either be the user-defined name for the managed sys-
                   tem, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and

sssssss is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

If the destination managed system is not managed by this management console, the debug data must be collected from the management console that manages the destination managed system.

-p   The name of one or more Virtual I/O Server (VIOS) partitions on the source managed system from which to collect partition migration debug data. Multiple partition names must be comma separated.

You can either use this option to specify the names of the VIOS partitions from which to collect partition migration debug data, or use the **--id** option to specify the IDs of the partitions. The **-p** and the **--id** options are mutually exclusive.

If neither this option nor the **--id** option is used to specify a list of VIOS partitions from which to collect partition migration debug data, partition migration debug data will be collected from all of the VIOS partitions on the source managed system.

-id   The ID of one or more VIOS partitions on the source managed system from which to collect partition migration debug data. Multiple partition names must be comma separated.

You can either use this option to specify the IDs of the VIOS partitions from which to collect partition migration debug data, or use the **-p** option to specify the names of the partitions. The **--id** and the **-p** options are mutually exclusive.

If neither this option nor the **-p** option is used to specify a list of VIOS partitions from which to collect partition migration debug data, partition migration debug data will be collected from all of the VIOS partitions on the source managed system.

--tp   The name of one or more VIOS partitions on the target, or destination, managed system from which to collect partition migration debug data. Multiple partition names must be comma separated.

You can either use this option to specify the names of the VIOS partitions from which to collect partition migration debug data, or use the **--tid** option to specify the IDs of the partitions. The **--tp** and the **--tid** options are mutually exclusive.

If neither this option nor the **--tid** option is used to specify a list of VIOS partitions from which to collect partition migration debug data, partition migration debug data will be collected from all of the VIOS partitions on the destination managed system.

--tid   The ID of one or more VIOS partitions on the target, or destination, managed system from which to collect partition migration debug data. Multiple partition names must be comma separated.

You can either use this option to specify the IDs of the VIOS partitions from which to collect partition migration debug data, or use the **--tp** option to specify the names of the partitions. The **--tid** and the **--tp** options are mutually exclusive.

If neither this option nor the **--tp** option is used to specify a list of VIOS partitions from which to collect partition migration debug data, partition migration debug data will be collected from all of the VIOS partitions on the destination managed system.

-f   The file name of the partition migration debug data package to remove from this management console.

--all   Specify this option to remove all partition migration debug data packages from this management console.

--help   Display the help text for this command and exit.

EXAMPLES

Enable automatic partition migration failure debug data collection on this management console:

migrdbg -o e

Manually collect partition migration debug data for the failed partition migration from managed system **system1** to managed system **system2**:

migrdbg -o c -m system1 -t system2

Manually collect partition migration debug data for the failed partition migration from managed system **S1** to a managed system managed by another management console:

migrdbg -o c -m S1

Manually collect partition migration debug data for the failed partition migration from a managed system managed by another management console to managed system **S2**:

migrdbg -o c -t S2

Manually collect partition migration debug data for the failed partition migration from managed system **system1** to managed system **system2**, and only collect partition migration debug data from VIOS's **msp11** and **vios11** on managed system **system1** and from the VIOS's **msp21** and **vios21** on managed system **system2**:

migrdbg -o c -m system1 -t system2 -p msp11,vios11 --tp msp21,vios21

Remove a partition migration debug data package from this management console:

migrdbg -o r -f lpmfdc-140728152436.tgz

Remove all partition migration debug data packages from this management console:

migrdbg -o r --all

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

lsmigrdbg

NAME
    migrlpar - perform a partition migration operation

SYNOPSIS
    To perform a partition migration operation:
       migrlpar -o {**m** | **r** | **s** | **v**}
             -m *managed-system* [**-t** *target-managed-system*]
             [**--ip** *IP-address* [**-u** *user-ID*]]
             {**-p** *partition-name* | **--id** *partition-ID* | **--all**}
             [**-n** *profile-name*]
             [**--redundantvios** {**0** | **1** | **2**}] [**--mpio** {**1** | **2**}]
             [**--vlanbridge** {**1** | **2**}] [**--vsi** {**1** | **2**}]
             [**--npivval** {**port** | **portdisk**}]
             [**--uuid** {**1** | **2**}] [**--protectstorage** {**1** | **2**}]
             [**--requirerr** {**1** | **2**}] [**--redundantmsps** {**0** | **1** | **2**}]
             [**--redundantsriovadapters** {**1** | **2**}]
             [**--redundantvnicbkdev** {**1** | **2**}] [**--migsriov** {**1** | **2**}]
             [**--sriovlogportcfg** {**1** | **2**}] [**--vniccfg** {**1** | **2**}]
             [**--affinity**] [**--usecurrdata**]
             [**--viosfcportlabel** {**1** | **2**}] [**--viosmsplabel** {**1** | **2**}]
             [**--viosstoragelabel** {**1** | **2**}] [**--viosvniclabel** {**1** | **2**}]
             [{**-f** *input-data-file* | **-i** "*input-data*"}]
             [**-w** *wait-time*] [**-d** *detail-level*] [**--force**]
             [**--steps** {**0** | **1** | **2**}] [**-v**] [**--nodetails**]
             [**--help**]

    To set system attributes related to partition migration operations:
       migrlpar -o set [**-m** *managed-system*] **-r sys**
             {**-f** *input-data-file* | **-i** "*input-data*"}
             [**--help**]

    To set mover service partition (MSP) attributes related to partition migration operations:
       migrlpar -o set -m *managed-system* **-r lpar**
             {**-p** *partition-name* | **--id** *partition-ID*}
             {**-f** *input-data-file* | **-i** "*input-data*"}
             [**--help**]

DESCRIPTION
    migrlpar performs partition migration operations.

    Partition migration operations can be performed for AIX, Linux, or IBM i partitions only.

OPTIONS
    -o   The operation to perform. Valid values are **m** to validate then migrate one or more partitions if
              validation succeeds, **r** to recover from a failed partition migration, **s** to stop a partition migration, **v**
              to validate one or more partition migrations, and **set** to set attributes related to partition migration
              operations.

              A recover operation should be issued, if possible, on the management console that is managing the
              source managed system.

              A stop operation must be issued on the management console that is managing the source managed
              system.

    -m   The name of the source managed system for the partition migration operation. The name may
              either be the user-defined name for the managed system, or be in the form *tttt*-*mmm**sssssss, where
              tttt is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed

system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

If this option is not specified for a system set operation, then the set operation will be performed for all systems that are currently managed by this Hardware Management Console (HMC).

-t   The name of the target, or destination, managed system for the partition migration operation. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

This option is required when migrating partitions or validating partition migrations. This option is not valid when performing any other operation.

--ip   If the destination managed system is not managed by the same management console that is managing the source managed system, then use this option to specify the IP address or host name of the management console that is managing the destination managed system.

SSH must be enabled on both management consoles. Also, you must run the **mkauthkeys** command once to set up SSH key authentication.

This option is required when migrating partitions, validating partition migrations, or recovering from a failed partition migration if the destination managed system is not managed by the same management console that is managing the source managed system. This option is not valid when performing any other operation.

-u   If the destination managed system is not managed by the same management console that is managing the source managed system, then use this option to specify the user ID to use on the management console that is managing the destination managed system. If you do not specify the user ID, then the user ID of the user that issues this command will be used.

-p   The name of the partition for which to perform the operation.

One or more partition names can be specified When migrating partitions or validating partition migrations. When performing any other operation, only a single partition name can be specified.

Multiple partition names must be comma separated. The maximum number of partition names that can be specified is displayed by the **lslparmigr -r mc -F max_lpars_per_migrlpar_cmd** command.

The **-p**, **--id**, and **--all** options are mutually exclusive.

--id   The ID of the partition for which to perform the operation.

One or more partition IDs can be specified When migrating partitions or validating partition migrations. When performing any other operation, only a single partition ID can be specified.

Multiple partition IDs must be comma separated. The maximum number of partition IDs that can be specified is displayed by the **lslparmigr -r mc -F max_lpars_per_migrlpar_cmd** command.

The **--id**, **-p**, and **--all** options are mutually exclusive.

--all   Specify this option to perform the operation for all AIX, Linux, and IBM i partitions.

This option is only valid when migrating partitions or stopping partition migration operations.

The **--all**, **-p**, and **--id** options are mutually exclusive.

-n   The name of the partition profile to create for the migrated partition on the destination managed system. If this option is omitted when migrating a partition, then the last activated profile for the partition will be replaced with the current partition configuration on the destination managed system.

This option is only valid when migrating a single partition or validating a single partition migration. When migrating more than one partition or validating more than one partition migration, the **multiple_profile_names** attribute must be specified instead.

--redundantvios,--redundantpgvios
When validating or migrating partitions that use shared memory, use this option to specify whether the partitions are to be configured to use redundant paging VIOS partitions on the destination managed system.

When validating or migrating suspended partitions, use this option to specify whether the partitions are to be configured to use redundant VIOS partitions on the destination managed system for accessing the devices that contain the data needed to resume the suspended partitions.

When validating or migrating remote restart capable partitions, use this option to specify whether the partitions are to be configured to use redundant VIOS partitions on the destination managed system for accessing the devices that contain the data needed to perform remote restarts of the partitions.

Valid values are **0** if the partitions are to be configured to not use redundant VIOS partitions, **1** if the partitions are to be configured to use redundant VIOS partitions, or **2** if the partitions are to be configured to use redundant VIOS partitions if possible. If this option is not specified, then each partition will be configured to use the same VIOS redundancy configuration on the destination managed system that the partition is currently using on the source managed system.

This option is only valid when validating or migrating partitions that use shared memory, partitions that are suspended, or partitions that are remote restart capable. This option is not valid when performing any other operation.

The **--redundantvios** and **--redundantpgvios** options are equivalent. The **--redundantpgvios** option is deprecated.

--mpio When validating or migrating partitions, use this option to specify whether the management console is required to maintain an equivalent multipath I/O (MPIO) configuration of each partition's virtual SCSI and virtual fibre channel adapters on the destination managed system. Valid values are **1** if the management console is required to maintain an equivalent MPIO configuration, or **2** if the management console is not required to maintain an equivalent MPIO configuration, but should do so if possible. If this option is not specified, then this option defaults to the value **1**.

If this option has a value of **1** and the management console cannot guarantee that an equivalent MPIO configuration of all of a partition's virtual SCSI and virtual fibre channel adapters can be maintained on the destination managed system, then an error will occur and the operation will fail for that partition.

This option is only valid when validating or migrating partitions. This option is not valid when performing any other operation.

--vlanbridge
When validating or migrating partitions, use this option to specify whether each partition's virtual ethernet adapters are required to be configured so that they are bridged on the same VLAN to an external network on the destination managed system. Valid values are **1** if virtual ethernet adapters are required to be bridged, or **2** if virtual ethernet adapters are not required to be bridged,

but should be bridged if possible. If this option is not specified, then this option defaults to the value **1**.

If this option has a value of **1** and the management console cannot guarantee that a partition's virtual ethernet adapters can be bridged, then an error will occur and the operation will fail for that partition.

A value of **2** cannot be specified with this option when a value of **1** is specified with the **--vsi** option.

This option is only valid when validating or migrating partitions. This option is not valid when performing any other operation.

--vsi   When validating or migrating partitions, use this option to specify whether each partition's virtual ethernet adapter Virtual Station Interface (VSI) profiles are required to be configured on the destination managed system. Valid values are **1** if VSI profiles are required to be configured, or **2** if VSI profiles are not required to be configured, but should be configured if possible. If this option is not specified, then this option defaults to the value of the **--vlanbridge** option.

If this option has a value of **1** and the management console cannot configure a partition's VSI profiles on the destination managed system, an error will occur and the operation will fail for that partition.

A value of **1** cannot be specified with this option when a value of **2** is specified with the **--vlanbridge** option.

This option is only valid when validating or migrating partitions. This option is not valid when performing any other operation.

--npivval
When validating partition migrations, use this option to specify the type of validation to be performed for each migrating partition's NPIV devices. Valid values are **port** to perform port validation only, or **portdisk** to perform both port and disk validation. If this option is not specified, only port validation will be performed unless disk validation for partition migrations has been enabled directly on the Virtual I/O Servers.

This option is only valid when validating partition migrations. This option is not valid when performing any other operation.

--uuid   Use this option to allow partitions to be migrated to a destination managed system that is managed by a management console at Version 7 Release 7.7 or earlier. These releases do not support partition universally unique identifiers (UUIDs).

Normally, a partition's UUID is transferred to the destination managed system during a migration operation. However, older management consoles do not support partition UUIDs and the migration operation will fail. Specifying a value of **2** with this option will allow the migration operation to proceed, and the UUIDs of all of the migrating partitions will be lost. Note that the loss of a partition's UUID can cause higher level management software to lose the ability to track the location of the partition.

Valid values for this option are **1** if partition UUIDs are required to be migrated, or **2** if partition UUIDs are not required to be migrated, but should be migrated if possible. If this option is not specified, it defaults to the value **1**.

This option is only valid when validating or migrating partitions. This option is not valid when performing any other operation.

--protectstorage

Use this option to allow suspended partitions to be migrated.

After a suspended partition has been migrated to another managed system, it is exposed to accidental reassignment of its virtual storage devices while it remains suspended. Since there is no way to prevent this exposure, it is recommended that a suspended partition be resumed before being migrated.

Valid values for this option are **1** if each suspended partition's virtual storage devices are required to be protected, or **2** if each suspended partition's virtual storage devices are not required to be protected. If this option is not specified, then this option defaults to the value **1**. To migrate suspended partitions, you must specify a value of **2** and assume responsibility for ensuring the integrity of each suspended partition's virtual storage devices.

This option is only valid when validating or migrating partitions. This option is not valid when performing any other operation.

--requirerr

When validating or migrating partitions, use this option to specify whether each partition is required to be capable of simplified remote restart on the destination managed system. Valid values are **1** if each partition is required to be capable of simplified remote restart on the destination managed system, or **2** if each partition is not required to be capable of simplified remote restart on the destination managed system but should be if possible.

If this option has a value of **1** and the simplified remote restart capability of a migrating partition cannot be enabled on the destination managed system, an error will occur and the operation will fail for that partition. If this option has a value of **2** and the simplified remote restart capability of a migrating partition cannot be enabled on the destination managed system, the operation will not fail for that partition, even if that partition was capable of simplified remote restart on the source managed system. If this option is not specified, each partition's simplified remote restart capability on the source managed system will be maintained on the destination managed system. If that is not possible for a partition, an error will occur and the operation will fail for that partition.

This option is only valid when validating or migrating partitions. This option is not valid when performing any other operation.

--redundantmsps

When validating or migrating active partitions, use this option to specify whether redundant MSPs are to be used. Valid values are **0** if redundant MSPs are not to be used, **1** if redundant MSPs are required to be used, or **2** if redundant MSPs are to be used if possible. If this option is not specified, it defaults to **2**.

This option is only valid when validating or migrating partitions. This option is not valid when performing any other operation.

--redundantsriovadapters

When validating or migrating partitions, use this option to specify whether the management console is required to maintain the SR-IOV adapter redundancy of each partition's migratable SR-IOV logical ports and virtual NIC backing devices on the destination managed system. Valid values are **1** if the management console is required to maintain the SR-IOV adapter redundancy, or **2** if the management console is not required to maintain the SR-IOV adapter redundancy, but should do so if possible. If this option is not specified, then this option defaults to the value **2**.

If this option has a value of **1**, the management console must be able to maintain the SR-IOV adapter redundancy of all of the partition's migratable SR-IOV logical ports and virtual NIC backing devices on the destination managed system. For example, if two migratable SR-IOV logical

ports or two virtual NIC backing devices are on the same SR-IOV adapter on the source managed system, they must be configured on the same SR-IOV adapter on the destination managed system. If two migratable SR-IOV logical ports or two virtual NIC backing devices are on different SR-IOV adapters on the source managed system, they must be configured on different SR-IOV adapters on the destination managed system. If the management console is not able to do this for all of a partition's migratable SR-IOV logical ports and virtual NIC backing devices, an error will occur and the operation will fail for that partition.

This option is only valid when validating or migrating partitions. This option is not valid when performing any other operation.

--redundantvnicbkdev
>   When validating or migrating partitions, use this option to specify whether the management console is required to maintain the backing device redundancy of each partition's virtual NICs on the destination managed system. Valid values are **1** if the management console is required to maintain the virtual NIC backing device redundancy, or **2** if the management console is not required to maintain the virtual NIC backing device redundancy, but should do so if possible. If this option is not specified, then this option defaults to the value **1**.
>
>   If this option has a value of **1**, the management console must be able to map every virtual NIC backing device to a virtual NIC backing device on the destination managed system. In addition, the management console must be able to maintain the VIOS redundancy the backing devices for a virtual NIC provide. For example, if two backing devices for a virtual NIC are hosted by two different VIOSs on the source managed system, then the backing devices for that virtual NIC must be hosted by two different VIOSs on the destination managed system. If the management console is not able to do this for all of a partition's virtual NICs, an error will occur and the operation will fail for that partition.
>
>   This option is only valid when validating or migrating partitions. This option is not valid when performing any other operation.

--migsriov
>   When validating or migrating partitions, use this option to specify whether the management console is required to recreate each partition's migratable SR-IOV logical ports on the destination managed system. Valid values are **1** if the management console is required to recreate the migratable SR-IOV logical ports, or **2** if the management console is not required to recreate the migratable SR-IOV logical ports, but should do so if possible. If this option is not specified, then this option defaults to the value **1**.
>
>   If this option has a value of **1** and the management console cannot guarantee that a partition's migratable SR-IOV logical ports can be recreated on the destination managed system, then an error will occur and the operation will fail for that partition.
>
>   This option is only valid when validating or migrating partitions. This option is not valid when performing any other operation.

--sriovlogportcfg
>   When validating or migrating partitions, use this option to specify whether the management console is required to maintain the configuration of each partition's migratable SR-IOV logical ports on the destination managed system. Valid values are **1** if the management console is required to maintain the migratable SR-IOV logical port configuration, or **2** if the management console is not required to maintain the migratable SR-IOV logical port configuration, but should do so if possible. If this option is not specified, then this option defaults to the value **1**.
>
>   Specifying a value of **2** for this option will allow the validation or migration operation to succeed even if the management console is not able to maintain each migratable SR-IOV logical port's port

VLAN ID, allowed VLAN IDs, allowed MAC addresses or capacity configuration on the destination managed system.

This option is only valid when validating or migrating partitions. This option is not valid when performing any other operation.

--vniccfg
When validating or migrating partitions, use this option to specify whether the management console is required to maintain the configuration of each partition's virtual NICs on the destination managed system. Valid values are **1** if the management console is required to maintain the virtual NIC configuration, or **2** if the management console is not required to maintain the virtual NIC configuration, but should do so if possible. If this option is not specified, then this option defaults to the value **1**.

Specifying a value of **2** for this option will allow the validation or migration operation to succeed even if the management console is not able to maintain each virtual NIC's allowed VLAN IDs and maximum capacity configuration on the destination managed system.

This option is only valid when validating or migrating partitions. This option is not valid when performing any other operation.

--affinity
When migrating a single partition, use this option to specify that the affinity score of the partition is required to be maintained on the destination managed system. If the affinity score cannot be maintained, an error will occur and the partition migration will fail.

If this option is not specified, the affinity score of the partition is not required to be maintained on the destination managed system.

This option is only valid when migrating a single partition. This option is not valid when performing a validation operation or any other operation.

--usecurrdata
Use this option to allow partitions to be migrated when Virtual I/O Servers that are hosting their virtual SCSI or virtual fibre channel adapters are shutdown and the storage adapter data that has been previously collected for the partitions is stale. The partitions will be migrated using the stale data.

This option is only valid when validating or migrating partitions. This option is not valid when performing any other operation.

--viosfcportlabel
When validating or migrating partitions, use this option to specify whether VIOS Fibre Channel (FC) port labels are to be used when determining mappings of virtual FC adapters when specific virtual FC adapter mappings are not specified. Valid values are **1** if VIOS FC port labels are required to be used, or **2** if VIOS FC port labels are to be used if possible. If this option is not specified, it defaults to the value of the VIOS FC port label override option for the managed system (see the **labelvios** and **lslabelvios** commands).

If VIOS FC port labels are required to be used and the management console cannot find a destination VIOS to host each partition's virtual FC adapter which has an FC port label that matches the FC port label on the source VIOS hosting the adapter, an error will occur and the operation will fail for that partition.

This option is only valid when validating or migrating partitions. This option is not valid when performing any other operation.

--viosmsplabel
When validating or migrating active partitions, use this option to specify whether VIOS MSP group labels are to be used when determining source and destination MSP pairs when specific source or destination MSPs are not specified on this command. Valid values are **1** if VIOS MSP group labels are required to be used, or **2** if VIOS MSP group labels are to be used if possible. If this option is not specified, it defaults to the value of the VIOS MSP group label override option for the managed system (see the **labelvios** and **lslabelvios** commands).

If VIOS MSP group labels are required to be used and labels are specified using the **msp_labels** attribute, if the management console cannot find the required number of MSP pairs that have those labels to use, an error will occur and the operation will fail. Otherwise, if VIOS MSP group labels are required to be used and labels are not specified using the **msp_labels** attribute, if the management console cannot find the required number of MSP pairs that have any matching include labels to use, an error will occur and the operation will fail.

This option is only valid when validating or migrating active partitions. This option is not valid when performing any other operation.

--viosstoragelabel
When validating or migrating partitions, use this option to specify whether VIOS virtual FC and virtual SCSI group labels are to be used when determining mappings of virtual FC and virtual SCSI adapters when specific virtual FC or virtual SCSI adapter mappings are not specified. Valid values are **1** if VIOS virtual FC and virtual SCSI group labels are required to be used, or **2** if VIOS virtual FC and virtual SCSI group labels are to be used if possible. If this option is not specified, it defaults to the value of the VIOS storage group label override option for the managed system (see the **labelvios** and **lslabelvios** commands).

If VIOS storage group labels are required to be used and the management console cannot find a destination VIOS to host each partition's virtual FC or virtual SCSI adapter which has a label that matches a label of the source VIOS hosting the adapter, an error will occur and the operation will fail for that partition.

This option is only valid when validating or migrating partitions. This option is not valid when performing any other operation.

--viosvniclabel
When validating or migrating partitions, use this option to specify whether VIOS virtual NIC group labels are to be used when determining mappings of virtual NICs when specific virtual NIC mappings are not specified. Valid values are **1** if VIOS virtual NIC group labels are required to be used, or **2** if VIOS virtual NIC group labels are to be used if possible. If this option is not specified, it defaults to the value of the VIOS virtual NIC group label override option for the managed system (see the **labelvios** and **lslabelvios** commands).

If VIOS virtual NIC group labels are required to be used and the management console cannot find a destination VIOS to host each partition's virtual NIC which has a label that matches a label of the source VIOS hosting the virtual NIC, an error will occur and the operation will fail for that partition.

This option is only valid when validating or migrating partitions. This option is not valid when performing any other operation.

-f   The name of the file containing the input data for this command. The input data consists of attribute name/value pairs, which are in comma separated value (CSV) format.

The format of the input data is as follows:

attribute-name=*value*,*attribute-name*=*value*,...

Note that certain attributes accept a comma separated list of values, as follows:

"*attribute-name*=*value*,*value*,...",...

When a list of values is specified, the attribute name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

Attributes that can be specified when validating or migrating a single partition:
>   **dest_lpar_id**
>   The partition ID to use on the destination managed
>   system
>   **virtual_fc_mappings**
>   Comma separated list of virtual fibre channel adapter
>   mappings, with each mapping having the following
>   format:
>
>   *virtual-slot-number*/*vios-lpar-name*/*vios-lpar-ID*
>   [/[*vios-virtual-slot-number*][/[*vios-fc-port-name*]]]
>
>   The first 2 '/' characters must be present. The
>   third '/' character is optional, but it must be
>   present if *vios-virtual-slot-number* or *vios-fc-port-*
>   *name* is specified. The last '/' character is
>   optional, but it must be present if *vios-fc-port-name*
>   is specified.
>
>   Optional values may be omitted. Optional values are
>   *vios-lpar-name* or *vios-lpar-ID* (one of those
>   values is required, but not both), *vios-virtual-slot-*
>   *number*, and *vios-fc-port-name*.
>
>   For example:
>   **4//1/14/fcs0** specifies a mapping of the virtual fibre
>   channel client adapter with slot number **4** to the
>   virtual fibre channel server adapter with slot number
>   **14** in the VIOS partition with ID **1** on the
>   destination managed system. In addition, the mapping
>   specifies to use physical fibre channel port **fcs0**.
>   **virtual_scsi_mappings**
>   Comma separated list of virtual SCSI adapter mappings,
>   with each mapping having the following format:
>
>   *virtual-slot-number*/*vios-lpar-name*/*vios-lpar-ID*
>   [/*vios-virtual-slot-number*]
>
>   The first 2 '/' characters must be present. The
>   last '/' character is optional, but it must be
>   present if *vios-virtual-slot-number* is specified.
>   Optional values may be omitted. Optional values are
>   *vios-lpar-name* or *vios-lpar-ID* (one of those
>   values is required, but not both), and

vios-virtual-slot-number.

For example:
12/vios1//16 specifies a mapping of the virtual SCSI
client adapter with slot number **12** to the virtual SCSI
server adapter with slot number **16** in the VIOS
partition **vios1** on the destination managed system.

vnic_mappings
Comma separated list of virtual NIC mappings, with
each mapping having the following format:

virtual-slot-number/**ded**/[*vios-lpar-name*]/
[*vios-lpar-ID*]/[*sriov-adapter-ID*]/
[*sriov-physical-port-ID*]/[*capacity*][/
[*source-sriov-adapter-ID*]/
[*source-sriov-physical-port-ID*][/
[*max-capacity*]]]

The first 6 '/' characters must be present. The
next 2 '/' characters are optional, but both
must be present if *source-sriov-adapter-ID*,
source-sriov-physical-port-ID, or *max-capacity*
is specified. The last '/' character is optional,
but must be present if *max-capacity* is specified.

Optional values may be omitted. Optional values are
vios-lpar-name or *vios-lpar-ID* (one of those values
is required, but not both), *sriov-adapter-ID* and
sriov-physical-port-ID (if one of those values is
specified they both must be specified), *capacity*, and
max-capacity. In addition, if the virtual NIC has
only one backing device, *source-sriov-adapter-ID* and
source-sriov-physical-port-ID are also optional.

For example:
5/ded/vios1//1/2/4.5/1/0 specifies a mapping of the
backing device on physical port **0** of SR-IOV adapter
1 for the virtual NIC in slot number **5** to a
virtual NIC on the destination managed system with a
backing device hosted by VIOS partition **vios1**. In
addition, the mapping specifies to use physical port
2 of SR-IOV adapter **1** and a logical port capacity
of **4.5**% for the backing device.

sriov_logical_port_mappings
Comma separated list of migratable SR-IOV logical port
mappings, with each mapping having the following
format:

sriov-logical-port-ID/[*sriov-adapter-ID*]/
[*sriov-physical-port-ID*]/[*capacity*]/[*max-capacity*]

Optional values may be omitted. Optional values are
sriov-adapter-ID and *sriov-physical-port-ID* (if one
of those values is specified they both must be

specified), *capacity*, and *max-capacity*.

For example:
27004001/1/2/10/20 specifies a mapping of the SR-IOV
logical port with ID **27004001** to physical port **2**
of SR-IOV adapter **1** on the destination managed system.
In addition, the mapping specifies to configure a
logical port capacity of **10**% and a maximum capacity
of **20**%.

vswitch_mappings
Comma separated list of virtual switch mappings, with
each mapping having the following format:

vlan-ID/*source-vswitch-name*/*dest-vswitch-name*

For example:
6/srcSwitch/dstSwitch specifies a mapping of VLAN
ID **6** on virtual switch **srcSwitch** to the virtual
switch **dstSwitch** on the destination managed system.

source_msp_name
source_msp_id
source_msp_ipaddr
dest_msp_name
dest_msp_id
dest_msp_ipaddr
shared_proc_pool_name | **shared_proc_pool_id**
primary_rs_vios_name | **primary_rs_vios_id**
primary_paging_vios_name | **primary_paging_vios_id**
These attributes are deprecated. Use the
primary_rs_vios_name | **primary_rs_vios_id**
attributes instead.

concurr_migration_perf_level
Valid values are **1** - **5** and **1r** - **5r**. Specify a
value of **1r** - **5r** if the concurrency level is
required and the migration operation should fail if
the resources required for the concurrency level are
not available.

inactive_prof_policy
Valid values are:
prof   - use the last activated profile for the
       partition when validating or migrating an
       inactive partition
config - use the current configuration of the
       partition when validating or migrating an
       inactive partition

affinity_group_id
Memory and processor affinity group in which the
partition will participate on the destination managed
system. Valid values are **none** and **1** - **255**.

pmem_volumes
Comma separated list of the names of the persistent
memory volumes to create on the destination managed
system. The format is:

        source-pmem-volume-name/*dest-pmem-volume-name*

        For example:
        vol0/vol3 specifies to create **vol3** on the
        destination managed system for **vol0** on the source
        managed system.

Attributes that can be specified when validating or migrating one or more partitions if the **--all** option is not specified. When the **--all** option is specified, only the **source_msps**, **dest_msps**, **redundant_msps**, and **msp_labels** attributes are allowed. For each of the following attributes, *lpar-name* and *lpar-ID* is the name or ID of the migrating partition. If the **-p** option is used to specify the migrating partitions, then *lpar-name* is required and *lpar-ID* can be omitted. If the **--id** option is used to specify the migrating partitions, then *lpar-ID* is required and *lpar-name* can be omitted:

    multiple_dest_lpar_ids
        Comma separated list of partition IDs to use on the
        destination managed system. The format is:

        lpar-name/*lpar-ID*/*dest-lpar-ID*

        For example:
        lp16//16 specifies that migrating partition **lp16** is to
        use partition ID **16** on the destination managed system.

    multiple_virtual_fc_mappings
        Comma separated list of virtual fibre channel adapter
        mappings, with each mapping having the following
        format:

        lpar-name/*lpar-ID*/*virtual-slot-number*/*vios-lpar-name*/
        vios-lpar-ID/[*vios-virtual-slot-number*][/
        [*vios-fc-port-name*]]

        See the **virtual_fc_mappings** attribute format for more
        information.

    multiple_virtual_scsi_mappings
        Comma separated list of virtual SCSI adapter mappings,
        with each mapping having the following format:

        lpar-name/*lpar-ID*/*virtual-slot-number*/*vios-lpar-name*/
        vios-lpar-ID/[*vios-virtual-slot-number*]

        See the **virtual_scsi_mappings** attribute format for
        more information.

    multiple_vnic_mappings
        Comma separated list of virtual NIC mappings, with
        each mapping having the following format:

        lpar-name/*lpar-ID*/*virtual-slot-number*/**ded**/
        [*vios-lpar-name*]/[*vios-lpar-ID*]/
        [*sriov-adapter-ID*]/[*sriov-physical-port-ID*]/
        [*capacity*][/[*source-sriov-adapter-ID*]/
        [*source-sriov-physical-port-ID*][/
        [*max-capacity*]]]

See the **vnic_mappings** attribute format for more
information.

multiple_sriov_logical_port_mappings
Comma separated list of migratable SR-IOV logical port
mappings, with each mapping having the following
format:

lpar-name/*lpar-ID*/*sriov-logical-port-ID*/
[*sriov-adapter-ID*]/[*sriov-physical-port-ID*]/
[*capacity*]/[*max-capacity*]

See the **sriov_logical_port_mappings** attribute format
for more information.

multiple_vswitch_mappings
Comma separated list of virtual switch mappings, with
each mapping having the following format:

lpar-name/*lpar-ID*/*vlan-ID*/*source-vswitch-name*/
dest-vswitch-name

See the **vswitch_mappings** attribute format for more
information.

multiple_shared_proc_pool_names
Comma separated list of the names of the shared
processor pools to use on the destination managed
system. The format is:

lpar-name/*lpar-ID*/*shared-proc-pool-name*

For example:
lp3//sp6 specifies that the migrating partition **lp3**
is to use shared processor pool **sp6** on the destination
managed system.

multiple_shared_proc_pool_ids
Comma separated list of the IDs of the shared
processor pools to use on the destination managed
system. The format is:

lpar-name/*lpar-ID*/*shared-proc-pool-ID*

For example:
/3/6 specifies that the migrating partition with ID **3**
is to use the shared processor pool with ID **6** on the
destination managed system.

multiple_primary_rs_vios_names
Comma separated list of the names of the VIOS
partitions to use on the destination managed system
as the primary VIOS partitions for accessing the
reserved storage devices of the migrating partitions.
The format is:

lpar-name/*lpar-ID*/*vios-lpar-name*

multiple_primary_rs_vios_ids
Comma separated list of the IDs of the VIOS

partitions to use on the destination managed system
as the primary VIOS partitions for accessing the
reserved storage devices of the migrating partitions.
The format is:

lpar-name/lpar-ID/vios-lpar-ID

multiple_profile_names
Comma separated list of names of the partition
profiles to create for the migrating partitions
on the destination managed system. The format is:

lpar-name/lpar-ID/profile-name

For example:
lpar1//migprof specifies to create the partition
profile **migprof** for migrating partition **lpar1**
on the destination managed system.

multiple_concurr_migration_perf_levels
Comma separated list of the concurrency levels to use.
The format is:

lpar-name/lpar-ID/concurr-migration-perf-level

See the **concurr_migration_perf_level** attribute for
more information.

multiple_inactive_prof_policies
Comma separated list of the profile policies to use
for inactive partitions. The format is:

lpar-name/lpar-ID/inactive-prof-policy

See the **inactive_prof_policy** attribute for more
information.

multiple_affinity_group_ids
Comma separated list of the affinity group IDs to use.
The format is:

lpar-name/lpar-ID/affinity-group-ID

See the **affinity_group_id** attribute for more
information.

multiple_pmem_volumes
Comma separated list of the names of the persistent
memory volumes to create on the destination managed
system. The format is:

lpar-name/lpar-ID/source-pmem-volume-name/
dest-pmem-volume-name

See the **pmem_volumes** attribute for more information.

source_msps
Comma separated list of source MSPs to use for the
operation. The format is:

MSP-name/*MSP-ID*/[*MSP-IP-address*]

Both '/' characters must be present, but optional
values may be omitted. Optional values are *MSP-name*
or *MSP-ID* (one of those values is required, but not
both), and *MSP-IP-address*.

If redundant MSPs are to be used, you can either use
this attribute to specify the source MSPs to use, or
use the **redundant_msps** attribute. The **source_msps**
attribute and **redundant_msps** attribute are mutually
exclusive.

For example:
msp1//9.1.2.3 specifies to use IP address **9.1.2.3** on
source MSP **msp1** for the operation.

dest_msps
Comma separated list of destination MSPs to use for
the operation. The format is:

MSP-name/*MSP-ID*/[*MSP-IP-address*]

Both '/' characters must be present, but optional
values may be omitted. Optional values are *MSP-name*
or *MSP-ID* (one of those values is required, but not
both), and *MSP-IP-address*.

If redundant MSPs are to be used, you can either use
this attribute to specify the destination MSPs to use,
or use the **redundant_msps** attribute. The **dest_msps**
attribute and **redundant_msps** attribute are mutually
exclusive.

For example:
msp1// specifies to use any IP address on destination
MSP **msp1** for the operation.

redundant_msps
Comma separated list of redundant MSP pairs to use for
the operation. The format is:

group-ID/[*source-MSP-name*]/[*source-MSP-ID*]/
[*source-MSP-IP-address*]/[*dest-MSP-name*]/
[*dest-MSP-ID*]/[*dest-MSP-IP-address*]

All 6 '/' characters must be present, but optional
values may be omitted. Optional values are
source-MSP-name and *source-MSP-ID* (one of those values
is required, but not both), *source-MSP-IP-address*,
dest-MSP-name and *dest-MSP-ID* (one of those values
is required, but not both), and *dest-MSP-IP-address*.

The *group-ID* can be any integer, and is used to
identify the 2 MSP pairs that are redundant with
each other.

If redundant MSPs are to be used, you can either use
this attribute to specify the source and destination
MSPs to use, or use the **source_msps** and **dest_msps**
attributes. The **redundant_msps** attribute and the
source_msps and **dest_msps** attributes are
mutually exclusive.

For example:
1/src-vios1///dest-vios1//,1/src-vios2///dest-vios2//
specifies that MSP pair **src-vios1** on the source
managed system and **dest-vios1** on the destination
managed system and MSP pair **src-vios2** on the source
managed system and **dest-vios2** on the destination
managed system are to be used as a redundant MSP pair.
  msp_labels
Comma separated list of VIOS MSP group include labels
to use for the operation. This attribute cannot be
used with any other attribute that specifies MSPs to
use for the operation (**source_msp***, **dest_msp***,
redundant_msps).

Attributes that can be specified for a system set operation:
  inactive_prof_policy
Sets the default profile policy to use when
validating or migrating inactive partitions when
the system is the source managed system for the
operation. You can override this value for a
partition by specifying it on the validation or
migration operation.
Valid values are:
  prof - use the last activated profile for
        partitions when validating or migrating
        inactive partitions
  config - use the current configuration of
        partitions when validating or migrating
        inactive partitions
  allow_inactive_source_storage_vios
Valid values are:
  0 - disable virtual SCSI and virtual fibre channel
    adapter data collection for all AIX, Linux,
    and IBM i partitions in the managed system.
  1 - enable virtual SCSI and virtual fibre channel
    adapter data collection for all AIX, Linux,
    and IBM i partitions in the managed system.
    The data is collected from the VIOS partitions
    hosting the client adapters to allow the
    partitions to be migrated when VIOS partitions
    on the source managed system are shutdown.

Attributes that can be specified for an MSP set operation:
  num_active_migrations_configured
  concurr_migration_perf_level
Sets the default concurrency level to use on the
MSP. You can override this value for a partition

validation or migration operation by specifying it
on the operation.
Valid values are **1** - **5**

Input data for this command can be specified with this option or the **-i** option. The **-f** and the **-i** options are mutually exclusive.

Input data can be specified when migrating partitions, validating partition migrations, or performing a set operation. This option is not valid when performing any other operation.

-i   This option allows you to enter input data on the command line, instead of using a file. Data entered on the command line must follow the same format as data in a file, and must be enclosed in double quotes.

Input data for this command can be specified with this option or the **-f** option. The **-i** and the **-f** options are mutually exclusive.

Input data can be specified when migrating partitions, validating partition migrations, or performing a set operation. This option is not valid when performing any other operation.

-r   The type of resource for which to set attributes related to partition migration operations. Valid values are **sys** for managed system, and **lpar** for mover service partition.

-w   The maximum time, in minutes, to wait for operating system commands issued by the management console to the partitions to be migrated to complete. If an operating system command does not complete within the time specified, the partition migration operation for that partition will be stopped.

wait-time must be a whole number. If wait-time is 0, the partition migration operation will not be timed out.

If this option is not specified, a default value of 3 minutes is used.

This option is valid when migrating partitions or validating partition migrations. This option is not valid when performing any other operation.

-d   The level of detail requested from operating system commands issued by the management console to all partitions participating in migrations. Valid values are **1** (lowest) through **5** (highest).

If this option is not specified, a default value of 1 is used.

This option is valid when migrating partitions or validating partition migrations. This option is not valid when performing any other operation.

--force   This option allows you to force a recover operation to proceed when errors are encountered.

This option is only valid when recovering from a failed partition migration.

--steps   When validating or migrating partitions, use this option to specify whether to display the steps that are completed during the operation if the operation fails. Note that the steps are displayed after the operation has finished. Valid values are **0** to display no step information, **1** to display all step information, and **2** to display only failed step information. If this option is not specified it defaults to **0**.

This option is valid when migrating partitions or validating partition migrations. This option is not valid when performing any other operation.

-v   Specify this option to enable verbose mode for the partition migration operation. When verbose mode is enabled, detail messages and warning messages are displayed for successful partition

migrations. Detail messages and warning messages are displayed for partition migrations that fail, regardless of whether this option is specified.

When the **--nodetails** option is also specified, no detail messages are displayed.

--nodetails
>   Specify this option to suppress the display of all detail messages.

--help   Display the help text for this command and exit.

EXIT STATUS

This command has the following return codes:

0   Success

100   Partial success

>   When an operation is performed for multiple partitions, this value is returned when the operation for at least one partition succeeds, and the operation for at least one partition fails.

Any other value means the command failed.

EXAMPLES

In the following examples nested double quote characters are preceded by an escape character ('\'). The escape characters are required to run the commands locally on an HMC.

Validate the operation to migrate partition **mylpar** from managed system **system1** to managed system **system2**:

migrlpar -o v -m system1 -t system2 -p mylpar
-i "\"virtual_scsi_mappings=12/vios1/,13/vios2/\",dest_msp_name=vios1,
source_msp_name=vios"

Validate the operation to migrate the partitions with IDs **3**, **6**, and **7** from managed system **system1** to managed system **system2**:

migrlpar -o v -m system1 -t system2 --id 3,6,7
-i "\"multiple_virtual_scsi_mappings=/3/12/vios1//32,/3/13/vios2//33,
/7/12/vios1//72\",source_msps=vios1//9.3.4.5,dest_msps=vios1//"

Migrate the partition with ID **5** from managed system **system1** to managed system **system2**:

migrlpar -o m -m system1 -t system2 --id 5 -n migprof
-i "virtual_fc_mappings=5//1/18/fcs0,dest_msp_id=1,source_msp_id=3"

Migrate the partition **smp** from managed system **system1** to managed system **system2**, configure the partition to use redundant paging VIOS partitions on **system2**, and use **vios1** as the primary paging VIOS for the partition:

migrlpar -o m -m system1 -t system2 -p smp --redundantvios 1
-i "primary_rs_vios_name=vios1"

Migrate the partition **lp1** from managed system **system1** to managed system **system2**, require redundant MSPs to be used, and use the specified source MSPs and destination MSPs:

migrlpar -o m -m system1 -t system2 -p lp1 --redundantmsps 1
-i "\"source_msps=vios1//9.53.78.1,vios2//9.53.78.2\",\"dest_msps=
vios1//9.53.78.25,vios2//9.53.78.26\""

Migrate the partition **lp1** from managed system **system1** to managed system **system2**, require redundant MSPs to be used, and use the specified redundant MSP pairs:

migrlpar -o m -m system1 -t system2 -p lp1 --redundantmsps 1
-i "\"redundant_msps=1/srcvios1//9.53.78.1/dstvios1//9.53.78.25,
1/srcvios2//9.53.78.2/dstvios2//9.53.78.26\""

Migrate the partitions **lp4** and **lp5** from managed system **system1** to managed system **system2**:

migrlpar -o m -m system1 -t system2 -p lp4,lp5 --mpio 2
-i "\"multiple_dest_lpar_ids=lp4//21,lp5//22\",
multiple_shared_proc_pool_names=lp5//sp1"

Migrate all AIX, Linux, and IBM i partitions from managed system **m11** to managed system **m13**:

migrlpar -o m -m m11 -t m13 --all -i
"\"source_msps=m11-vios1//,m11-vios2//\",
\"dest_msps=m13-vios1//,m13-vios2//\""

Stop the partition migration that is just starting for partition **mylpar**:

migrlpar -o s -m system1 -p mylpar

Recover the failed partition migration of partition **mylpar**:

migrlpar -o r -m system1 -p mylpar

Migrate the partition **aix1** from managed system **system1** to managed system **system2**, when **system2** is managed by the HMC with the host name **hmc2**:

mkauthkeys --ip hmc2 -u hmc2user

migrlpar -o m -m system1 -t system2 -p aix1 --ip hmc2 -u hmc2user

Set the inactive profile migration policy for all systems currently managed by this HMC:

migrlpar -o set -r sys -i "inactive_prof_policy=prof"

Set partition migration attributes for MSP **vios2**:

migrlpar -o set -r lpar -m sys1 -p vios2
-i "num_active_migrations_configured=10,
concurr_migration_perf_level=3"

ENVIRONMENT
> None

BUGS
> None

AUTHOR
> IBM Austin

SEE ALSO
> **labelvios**, **lslabelvios**, **lslparmigr**, **mkauthkeys**

NAME
mkaccfg - create access control object

SYNOPSIS
mkaccfg -t {**resourcerole** | **taskrole**}
 {**-f** *configuration-file* | **-i "***configuration-data***"**}
 [**--help**]

DESCRIPTION
mkaccfg creates a new access control role.

OPTIONS
-t   The type of access control role to create. Valid values are **resourcerole** for managed resource role and **taskrole** for task role.

-f   The name of the file containing the configuration data needed to create the access control role. The configuration data consists of attribute name/value pairs, which are in comma separated value (CSV) format. These attribute name/value pairs form a configuration record. A line feed marks the end of a configuration record. There can only be one configuration record in the file.

The format of a configuration record is as follows:

attribute-name=*value***,***attribute-name*=*value***,**...<LF>

Note that certain attributes accept a comma separated list of values, as follows:

"*attribute-name*=*value***,***value***,**...**"***,*...<LF>

When a list of values is specified, the attribute name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

Attribute names for managed resource roles (all attributes are required):
   name
        name of the managed resource role to
        create
   resources
        comma separated list of managed resource
        objects

Attribute names for task roles (all attributes are required):
   name
        name of the task role to create
   resources
        comma separated list of tasks
   parent
        name of the parent task role on which to
        base this task role. Valid values are
        hmcsuperadmin, **hmcoperator**, **hmcviewer**,
        hmcpe, **hmcservicerep**, **hmcclientliveupdate**,
        or a user-defined task role.

The **-f** and the **-i** options are mutually exclusive.

-i   This option allows you to enter configuration data on the command line, instead of using a file. Data entered on the command line must follow the same format as data in a file, and must be enclosed in double quotes.

The **-i** and the **-f** options are mutually exclusive.

--help   Display the help text for this command and exit.

EXAMPLES

Create a managed resource role using the configuration data in the file **/tmp/mr1file**:

mkaccfg -t resourcerole -f /tmp/mr1file

Create a task role named **tr1**:

mkaccfg -t taskrole -i "name=tr1,parent=hmcsuperadmin,
"resources=cec:ChangeCoD+ListCoDInformation+
ListCECProperty,lpar:ChangeLPARProperty+ListLPARProperty+
CreateProfile""

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chaccfg, **lsaccfg**, **rmaccfg**

NAME
>   mkauthkeys - manage SSH authentication keys

SYNOPSIS
>   To add an SSH key as an authorized key (**"***string***"** must be the last option specified):
>   **mkauthkeys** {**-a** | **--add**} [**-u** *user-ID*] **"***string***"**
>
>   To remove an SSH key from the authorized keys (if specified, **"***string***"** must be the last option specified):
>   **mkauthkeys** {**-r** | **--remove**} [**-u** *user-ID*] [**"***string***"**]
>
>   To set up SSH key authentication for partition mobility, partition remote restart, and virtual serial number
>   (VSN) transfer operations between this Hardware Management Console (HMC) and another management
>   console:
>   **mkauthkeys** [**-g**] **--ip** *IP-address* **-u** *user-ID* [**--passwd** *password*]
>   [**-t** {**rsa** | **dsa**}]
>
>   To test SSH key authentication for partition mobility, partition remote restart, and VSN transfer operations
>   from this HMC to another management console:
>   **mkauthkeys --test --ip** *IP-address* [**-u** *user-ID*]

DESCRIPTION
>   **mkauthkeys** manages SSH authentication keys.
>
>   **mkauthkeys** can be used to add or remove SSH keys as authorized keys for HMC users.
>
>   **mkauthkeys** can also be used to set up SSH key authentication for partition mobility, partition remote
>   restart, and VSN transfer operations between this HMC and another management console.

OPTIONS
>   **-a,--add**
>>   Adds the specified SSH key *string* as an authorized key for the specified user. If a user is not spec-
>>   ified, the key is added for the user which issues this command.
>>
>>   The *string* is added to the user's **$HOME/.ssh/authorized_keys2** file.
>
>   **-r,--remove**
>>   Removes the SSH keys that contain the specified *string* from the authorized keys for the specified
>>   user. If a user is not specified, the SSH keys that contain the specified *string* are removed for the
>>   user which issues this command.
>>
>>   If this option and no *string* is specified, then all of the authorized keys for the specified user are
>>   removed. If a user is not specified, all of the authorized keys for the user that issues this command
>>   are removed.
>>
>>   The keys are removed from the user's **$HOME/.ssh/authorized_keys2** file.
>
>   **-u**   When adding or removing authorized SSH keys for another user, use this option to specify the user
>   ID.
>
>   When setting up SSH key authentication for partition mobility, partition remote restart, and VSN
>   transfer operations between this HMC and another management console, use this option to specify
>   the user ID to use on the remote management console.
>
>   *string*   To add or remove an SSH key as an authorized key, specify the SSH key to add or remove with
>   this option.
>
>   To remove all of the SSH keys generated for a user from the authorized keys for the user which
>   issues this command, specify the user for which the SSH keys to remove were generated.

This option must be the last option specified on the command.

--ip   The IP address or host name of the remote management console with which to set up partition mobility, partition remote restart, and VSN transfer operations.

Public and private SSH keys will be generated for the ccfw user on this HMC. The keys will be stored on this HMC in the **$HOME/.ssh/ccfw** directory for the user which issues this command. Then, if SSH keys have not already been set up on the remote management console for the remote user, then the saved public key will be sent to the remote management console and stored in the remote user's **$HOME/.ssh/authorized_keys2** file.

--passwd
When setting up SSH key authentication for partition mobility, partition remote restart, and VSN transfer operations between this HMC and another management console, use this option to specify the password for the user ID to use on the remote management console. If this option is omitted, you will be prompted to enter the password.

-t   The type of SSH keys to generate when setting up SSH key authentication for partition mobility, partition remote restart, and VSN transfer operations between this HMC and another management console. Valid values are **rsa** for RSA or **dsa** for DSA. If this option is not specified, then RSA keys will be generated.

-g   Specify this option when setting up SSH key authentication for partition mobility, partition remote restart, and VSN transfer operations between this HMC and another management console to allow partition mobility, partition remote restart, and VSN transfer operations to be performed from the remote management console to this HMC. If this option is not specified, then partition mobility, partition remote restart, and VSN transfer operations can only be performed from this HMC to the remote management console.

When this option is specified, public and private SSH keys will also be generated for the ccfw user on the remote management console. The keys will be stored on the remote management console in the remote user's **$HOME/.ssh/ccfw** directory. Then, if SSH keys have not already been set up on this HMC for the user that issues this command, then the saved public key will be sent to this HMC and stored in this user's **$HOME/.ssh/authorized_keys2** file.

--test   Tests SSH key authentication for partition mobility, partition remote restart, and VSN transfer operations from this HMC to the management console specified with the **--ip** option.

If the return code from this command is 0, then SSH key authentication is working properly.

--help   Display the help text for this command and exit.

EXAMPLES

To add the SSH key **ssh-rsa AAAB3NzaC1yc2EAAA joe@somehost**, which was generated for the user **joe@somehost**, as an authorized key for your user ID:

mkauthkeys -a "ssh-rsa AAAB3NzaC1yc2EAAA joe@somehost"

To add the SSH key **ssh-rsa AAAB3NzaC1yc2EAAA joe@somehost**, which was generated for the user **joe@somehost**, as an authorized key for user **hmcUser1**:

mkauthkeys -u hmcUser1 -a "ssh-rsa AAAB3NzaC1yc2EAAA joe@somehost"

To remove the SSH key **ssh-rsa AAAB3NzaC1yc2EAAA joe@somehost**, which was generated for user **joe@somehost**, from the authorized keys for your user ID:

mkauthkeys -r "ssh-rsa AAAB3NzaC1yc2EAAA joe@somehost"

To remove all of the SSH keys generated for the user **joe@somehost** from the authorized keys for your user

ID:

mkauthkeys -r "joe@somehost"

To remove all of the authorized SSH keys for user **hmcUser1**:

mkauthkeys -r -u hmcUser1

To set up partition mobility, partition remote restart, and VSN transfer operations from your user ID on this HMC to the HMC with host name **hmc2** for the user **hmc2user** on HMC **hmc2** (you will be prompted for **hmc2user**'s password):

mkauthkeys --ip hmc2 -u hmc2user

Check if partition mobility, partition remote restart, and VSN transfer operations from your user ID on this HMC to the HMC with host name **hmc2** for the user **hmc2user** on HMC **hmc2** have been set up:

mkauthkeys --ip hmc2 -u hmc2user --test

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

NAME
mkcodpool - create a CoD Power enterprise pool

SYNOPSIS
mkcodpool -p *pool-name* **-f** *file* [**-a** *attributes*] [**-v**] [**--help**]

DESCRIPTION
mkcodpool creates a Capacity on Demand (CoD) Power enterprise pool.

OPTIONS
-p   A name for the Power enterprise pool.

-f   The name of the XML file that contains the Power enterprise pool configuration data. If *file* is not fully qualified, *file* must exist in the user's home directory on the Hardware Management Console (HMC).

    If *file* exists on removable media, the media must be present in the removable media device and the device must be mounted with the **mount** command before this command is issued. The **lsmediadev** command can be used to display all of the removable media devices on the HMC.

-a   The Power enterprise pool attributes. The attribute data consists of attribute name/value pairs, which are in comma separated value (CSV) format.

    The format of the attribute data is as follows:

    "*attribute-name*=*value***,***value***,**...**"**,...

    When a list of values is specified, the attribute name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

    Valid attribute names:
     mcs
      Comma separated list of managing HMCs for the pool, with each managing HMC having the following format:

      *host-name-or-IP-address***/***user-ID***/**[*password*][**/** [*restricted-ops*]]

      The first 2 '/' characters must be present. The 3rd '/' character is optional, but it must be present if *restricted-ops* is specified.

      Optional values may be omitted. Optional values are *password* and *restricted-ops*. If *password* is omitted, you will be prompted to enter the password.

      Valid values for *restricted-ops*:
      0 - users are not restricted from initiating add and remove Mobile CoD resource operations from this managing HMC (default value)
      1 - users are restricted from initiating add and remove Mobile CoD resource operations from this managing HMC

      Note: do not include the HMC which is running this command in the list.

> For example:
> **hmc1/user1/** prompts the user for **user1**'s password
> then uses that password and the user ID **user1** to log
> into the HMC with host name **hmc1** to add that HMC to
> the pool.

-v Specify this option to enable verbose mode. When verbose mode is enabled, warning messages and informational messages are displayed for successful create pool operations. Warning messages and informational messages are displayed for create pool operations that partially succeed or fail, regardless of whether this option is specified.

--help Display the help text for this command and exit.

EXIT STATUS

This command has the following return codes:

0 Success

100 Partial success

  This value is returned when at least one operation in the configuration file succeeded, and at least one failed.

Any other value means the command failed.

EXAMPLES

Create the Power enterprise pool **pool1** using the configuration file **pool0195.xml** on a USB flash memory device (the USB flash memory device must already be connected to the HMC) and add HMC **hmc1** to the pool:

lsmediadev (to obtain mount points)

mount /media/sdb1

mkcodpool -p pool1 -f /media/sdb1/pool0195.xml
-a "mcs=hmc1/myuserID/mypassword" -v

Create the Power enterprise pool **myPool** using the configuration file **pool.xml** in the user's home directory on the HMC and add the HMCs **hmc1** and **hmc2** to the pool (you will be prompted to enter the password for each HMC):

mkcodpool -p myPool -f pool.xml -a ""mcs=hmc1/myuserID/,
hmc2/myuserID/"" -v

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chcodpool, **lscodpool**, **lsmediadev**

NAME
>   mkhmccert - create a Hardware Management Console certificate

SYNOPSIS
>   To create and apply a self-signed certificate:
>   **mkhmccert -t self** [**-i "**configuration-data**"**] [**--force**] [**-r**]
>   [**--help**]
>
>   To create a certificate signing request (CSR):
>   **mkhmccert -t ca -f** file-name [**-l** {**usb** | **sftp**}]
>   [**-h** host-name] [**-u** user-ID] [**--passwd** password]
>   [**-k** SSH-private-key] [**-d** directory]
>   [**-i "**configuration-data**"**] [**--temp** [**-r**]] [**--help**]

DESCRIPTION
>   **mkhmccert** creates a Hardware Management Console (HMC) certificate.
>
>   After a self-signed certificate is created, the HMC will automatically be restarted to apply the certificate.

OPTIONS
>   **-t**   The type of certificate to create. Valid values are **self** to create a self-signed certificate, and **ca** to create a certificate signing request (CSR) for the server where the Certificate Authority (CA) signed certificate will be issued.
>
>   **-f**   The name of the file where the CSR is to be saved.
>
>   **-l**   The location where the CSR is to be saved. Valid values are **usb** for a USB data storage device, and **sftp** for a secure FTP (SFTP) server. If this option is not specified, the CSR will be saved to the HMC hard disk.
>
>   **-h**   The host name or IP address of the SFTP server where the CSR is to be saved.
>
>   This option is required when the CSR is to be saved on an SFTP server. Otherwise, this option is not valid.
>
>   **-u**   The user ID to use to log in to the SFTP server.
>
>   This option is required when the CSR is to be saved on an SFTP server. Otherwise, this option is not valid.
>
>   **--passwd**
>   The password to use to log in to the SFTP server.
>
>   If both this option and the **-k** option are omitted, you will be prompted to enter the password. The **--passwd** and **-k** options are mutually exclusive.
>
>   This option is only valid when the CSR is to be saved on an SFTP server.
>
>   **-k**   The name of the file that contains the SSH private key. If the file name is not fully qualified, the file must exist in the user's home directory on the HMC.
>
>   Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen** command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so when you run the command on the HMC, you must specify both the directory and the file name for the private key. If you generate a key with a passphrase, you will be prompted to enter the passphrase when you run any HMC command that uses the key.
>
>   If both this option and the **--passwd** option are omitted and the CSR is to be saved on an SFTP server, you will be prompted to enter the password. The **-k** and **--passwd** options are mutually exclusive.

This option is only valid when the CSR is to be saved on an SFTP server.

-d   The directory where the CSR is to be saved.

-i   The input data for the command. The input data consists of attribute name/value pairs, which are in comma separated value (CSV) format.

The format of the input data is as follows:

*attribute-name=value***,***attribute-name=value***,***...*

Note that certain attributes accept a comma separated list of values, as follows:

"*attribute-name=value***,***value***,***...***",***...*

When a list of values is specified, the attribute name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

Valid attribute names for this command:
> **org**
> **org_unit**
> **country**
>> Two-character ISO country code
> **state**
> **locality**
> **days_to_expire**
> **email**
> **ipaddrs**
>> Comma separated list
> **dns**
>> Comma separated list
> **common_name**
>> Only valid for a CSR
> **key_size**
>> Only valid for a self-signed certificate
>> Valid values are **2048** (default), **3072**, and **4096**

--temp   When creating a CSR, specify this option to create a temporary self-signed certificate to be used until the CA returns the signed certificate.

The HMC will automatically be restarted to apply the temporary self-signed certificate.

-r   Specify this option to cause the HMC to automatically be restarted without asking for confirmation after applying a self-signed certificate.

--force Specify this option to allow a self-signed certificate to be created without a domain name.

--help   Display the help text for this command and exit.

EXAMPLES

Create a self-signed certificate (the HMC will automatically be restarted to apply the certificate):

mkhmccert -t self -i "org=TEST,org_unit=HMC,country=US,state=Texas,
locality=Austin,email=support@company.com,days_to_expire=365,
ipaddrs=9.2.155.119,dns=dns1@company.com"

Create a CSR and save it to a SFTP server and use SSH keys for authentication:

**mkhmccert -t ca -f csrfile -l sftp -h server.company.com -u sftpuser
-k /home/hmcuser/keys/id_rsa -d /home/sftpuser/certs -i "org=TEST,
org_unit=HMC,country=US,common_name=hmc1@company.com,state=Texas,
locality=Austin,email=support@company.com,days_to_expire=365,
ipaddrs=9.5.17.129,dns=dns1@company.com"**

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chhmccert, **lshmccert**

NAME
      mkhmcusr - create a Hardware Management Console user

SYNOPSIS
      mkhmcusr -u *user-name* **-a** *task-role* [**-d** *description*]
       [**--passwd** *password*] [**-M** *number-of-days*]
       [**--auth** {**local** | **kerberos** | **ldap**}]
       [**--remoteuser** *remote-user-name*] [**--help**]

      or

      mkhmcusr {**-f** *input-data-file* | **-i "**input-data**"**} [**--help**]

DESCRIPTION
      mkhmcusr creates a Hardware Management Console (HMC) user.

OPTIONS
      -u   The user name of the HMC user to create. The user name cannot be longer than 32 characters, and
                 it must begin with a letter.

                 You can either use this option, or use the **name** attribute with the **-f** or **-i** option, to specify the user
                 name. The **-u**, **-f**, and **-i** options are mutually exclusive.

      -a   The access control task role for this user. Valid values are **hmcsuperadmin**, **hmcoperator**,
                 hmcviewer, **hmcpe**, **hmcservicerep**, **hmcclientliveupdate**, or a user-defined task role.

                 You can either use this option, or use the **taskrole** attribute with the **-f** or **-i** option, to specify the
                 access control task role. The **-a**, **-f**, and **-i** options are mutually exclusive.

      -d   The description for this user. *description* can be any string.

                 You can either use this option, or use the **description** attribute with the **-f** or **-i** option, to specify
                 the description. If a description is not specified, then the description will be set to "HMC User".
                 The **-d**, **-f**, and **-i** options are mutually exclusive.

      --passwd
                 The password for this user. The password must be at least 8 and maximum 32 characters in length.

                 A password cannot be specified when creating a remotely authenticated Kerberos or LDAP user.

                 You can either use this option, or use the **passwd** attribute with the **-f** or **-i** option, to specify the
                 password. If this option is omitted or the **-f** or **-i** option is specified and the **passwd** attribute is
                 omitted, you will be prompted to enter the password. The **--passwd**, **-f**, and **-i** options are mutu-
                 ally exclusive.

      -M   The number of days until the password for this user expires.

                 A password expiration cannot be specified when creating a remotely authenticated Kerberos or
                 LDAP user.

                 You can either use this option, or use the **pwage** attribute with the **-f** or **-i** option, to specify the
                 password expiration. If a password expiration is not specified, then this user's password will never
                 expire. The **-M**, **-f**, and **-i** options are mutually exclusive.

      --auth   The authentication type for this user. Valid values are **local** for local authentication, **kerberos** for
                 remote Kerberos authentication, and **ldap** for remote LDAP authentication.

                 You can either use this option, or use the **authentication_type** attribute with the **-f** or **-i** option, to
                 specify the authentication type. If an authentication type is not specified, then the authentication

type for this user will be set to local authentication. The **--auth**, **-f**, and **-i** options are mutually exclusive.

--remoteuser

The remote user ID used for remote Kerberos authentication for this user. This is the user's Kerberos principal. The format of a typical Kerberos principal is *primary*/*instance*@*REALM*.

You can either use this option, or use the **remote_user_name** attribute with the **-f** or **-i** option, to specify the remote user ID. A remote user ID must be specified when creating a remotely authenticated Kerberos user. The **--remoteuser**, **-f**, and **-i** options are mutually exclusive.

-f   The name of the file containing the input data for this command. The input data consists of attribute name/value pairs, which are in comma separated value (CSV) format.

The format of the input data is as follows:

attribute-name=*value***,***attribute-name*=*value***,**...

Valid attribute names for this command:
    name
    taskrole
      Valid values are **hmcsuperadmin**, **hmcoperator**,
      hmcviewer, **hmcpe**, **hmcservicerep**, **hmcclientliveupdate**,
      or a user-defined task role
    [**resourcerole**]
      Comma separated
    [**description**]
    [**passwd**]
      Local users only
    [**pwage**]
      Local users only
      number of days
    [**min_pwage**]
      Local users only
      number of days
    [**authentication_type**]
      Valid values are:
      local   - local authentication
      kerberos - remote Kerberos authentication
      ldap   - remote LDAP authentication
    [**session_timeout**]
      number of minutes
    [**verify_timeout**]
      number of minutes
    [**idle_timeout**]
      number of minutes
    [**inactivity_expiration**]
      number of days
    [**remote_webui_access**]
      Valid values are:
      0 - do not allow this user to log in remotely to the
        HMC Web user interface
      1 - allow this user to log in remotely to the
        HMC Web user interface
    [**remote_ssh_access**]
      Valid values are:

> **0** - do not allow this user to log in remotely to the
>   HMC using SSH
> **1** - allow this user to log in remotely to the
>   HMC using SSH
> [**remote_user_name**]
>   Kerberos users only

Input data for this command can be specified with this option, the **-i** option, or any of the other command options. The **-f** and the **-i** options are mutually exclusive, and they cannot be specified if any of the other command options are specified.

-i   This option allows you to enter input data on the command line, instead of using a file. Data entered on the command line must follow the same format as data in a file, and must be enclosed in double quotes.

Input data for this command can be specified with this option, the **-f** option, or any of the other command options. The **-i** and the **-f** options are mutually exclusive, and they cannot be specified if any of the other command options are specified.

--help Display the help text for this command and exit.

EXAMPLES

Create the user **sysadmin**:

> **mkhmcusr -u sysadmin -a hmcsuperadmin --passwd aielkw3j**
> **-M 180 -d "System Administrator"**

or

> **mkhmcusr -i "name=sysadmin,taskrole=hmcsuperadmin,passwd=**
> **aielkw3j,pwage=180,description=System Administrator"**

Create the user **myhmcuser** (the user's password must be entered when prompted):

> **mkhmcusr -u myhmcuser -a hmcviewer**

> or

> **mkhmcusr -i "name=myhmcuser,taskrole=hmcviewer"**

Create a remotely authenticated Kerberos user **krbuser**:

> **mkhmcusr -u krbuser -a hmcoperator --auth kerberos**
> **--remoteuser krbuser/hmcoperator@EXAMPLE.COM**

or

> **mkhmcusr -i "name=krbuser,taskrole=hmcoperator,**
> **authentication_type=kerberos,remote_user_name=**
> **krbuser/hmcoperator@EXAMPLE.COM"**

Create a remotely authenticated LDAP user **ldapuser**:

> **mkhmcusr -u ldapuser -a hmcsuperadmin --auth ldap**

or

mkhmcusr -i "name=ldapuser,taskrole=hmcsuperadmin,
authentication_type=ldap"

ENVIRONMENT
> None

BUGS
> None

AUTHOR
> IBM Austin

SEE ALSO
> **chhmcusr**, **lshmcusr**, **rmhmcusr**, **lsaccfg**

NAME

        mkprofdata - create profile data

SYNOPSIS

        To recreate profile data:

             mkprofdata -r sys -o recreate -m *managed-system* **-s sys** [**-v**]
                  [**--help**]

        To convert profile data to XML:

             mkprofdata -r sys -o createxml
                  {**-m** *managed-system* | **-b** *binary-file*}
                  -x *XML-file* [**--help**]

DESCRIPTION

        mkprofdata recreates the profile data for *managed-system* based on the current configuration of *managed-system*. **This operation will overwrite the current profile data for the managed system so it should only be performed if the profile data for the managed system is corrupted.** This operation will create a single profile for each partition in the managed system. This profile will match the current configuration of the partition on the managed system. Any profile attributes not stored on the managed system, including the profile name, will be set to default values. Since no existing partition profiles can be recovered, when this operation completes only the newly created profile will exist for each partition along with the last valid configuration profile that the HMC automatically creates for every partition.

        mkprofdata can also be used to convert the profile data for a managed system to XML format and save it to a file.

OPTIONS

        -r   The type of resource for which to recreate or convert profile data. The only valid value is **sys** for managed system.

        -o   The operation to perform. Valid values are **recreate** to recreate the profile data for a managed system based on the current configuration of the managed system, and **createxml** to convert the profile data for a managed system to XML format and save it to a file.

        -m   The name of the managed system for which to perform the profile data operation. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

                If this option is specified when converting profile data to XML format, the current profile data on the managed system will be used. The **-m** and the **-b** options are mutually exclusive.

        -s   The source for the profile data recreate operation. The only valid value is **sys** for managed system. The profile data for the managed system will be recreated based on the current configuration of the managed system.

        -b   The name of the files containing the binary profile data to be converted to XML format. *binary-file* must be a fully qualified file name (it must include the directory name). Both files containing the binary profile data, *binary-file* and *binary-file***.dir**, must be present for the operation to be performed.

                If the files are on removable media, the media must be present in the removable media device and the device must be mounted with the **mount** command before this command is issued. The **lsmediadev** command can be used to display all of the removable media devices on the management console.

                The **-b** and the **-m** options are mutually exclusive.

-x   The name of the files to which the profile data is to be written in XML format. If *XML-file* is not fully qualified, *XML-file* will be written to the user's home directory. Two files will be written: *XML-file***.xml** and *XML-file***_dir.xml**.

             If the files are to be written to removable media, the media must be present in the removable media device and the device must be mounted with the **mount** command before this command is issued. The **lsmediadev** command can be used to display all of the removable media devices on the management console.

-v   Specify this option to enable verbose mode for the profile data recreate operation. When verbose mode is enabled, progress messages are displayed.

--help   Display the help text for this command and exit.

EXAMPLES

Recreate the profile data for the managed system **mySys**:

mkprofdata -r sys -o recreate -m mySys -s sys -v

Convert the current profile data on managed system **mySys** to XML format and save it in the files **mySysXML.xml** and **mySysXML_dir.xml** in the user's home directory:

mkprofdata -r sys -o createxml -m mySys -x mySysXML

Convert the profile data in the files **/home/hscpe/sysA** and **/home/hscpe/sysA.dir** to XML format and save it in the files **sysAXML.xml** and **sysAXML_dir.xml** in the user's home directory:

mkprofdata -r sys -o createxml -b /home/hscpe/sysA -x sysAXML

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

NAME
>   mkpwdpolicy - create a password policy

SYNOPSIS
>   **mkpwdpolicy** {**-f** *input-data-file* | **-i "***input-data***"**} [**--help**]

DESCRIPTION
>   **mkpwdpolicy** creates a password policy for the Hardware Management Console (HMC).
>
>   **mkpwdpolicy** only creates a password policy. The **chpwdpolicy** command must be used to activate the
>   password policy.

OPTIONS
>   **-f**   The name of the file containing the data to create the password policy. The data consists of
>   attribute name/value pairs, which are in comma separated value (CSV) format.
>
>   The format of the data is as follows:
>
>   *attribute-name=value***,***attribute-name=value***,***...*
>
>   Valid attribute names for this command:
>   **name**
>   The name of the password policy to create.
>   [**description**]
>   [**min_pwage**]
>   The number of days that must elapse before a password
>   can be changed. Defaults to 1 day.
>   [**pwage**]
>   The number of days that can elapse before a password
>   expires and must be changed. A value of **99999**
>   indicates no password expiration. Defaults to 180
>   days.
>   [**warn_pwage**]
>   The number of days prior to password expiration when a
>   warning message will begin to be displayed. Defaults
>   to 7 days.
>   [**min_length**]
>   The minimum password length. Defaults to 8
>   characters.
>   [**hist_size**]
>   The number of times a password must be changed before
>   a password can be reused. This value cannot exceed
>   50, and defaults to 10.
>   [**min_digits**]
>   The minimum number of digits that a password must
>   contain. Defaults to 0.
>   [**min_uppercase_chars**]
>   The minimum number of uppercase characters that a
>   password must contain. Defaults to 1.
>   [**min_lowercase_chars**]
>   The minimum number of lowercase characters that a
>   password must contain. Defaults to 6.
>   [**min_special_chars**]
>   The minimum number of special characters that a
>   password must contain. Special characters include
>   symbols, punctuation, and white space characters.

Defaults to 0.

[**inactivity_expiration**]

The number of days that can elapse before an HMC user is disabled due to inactivity. A value of **0** indicates no inactivity expiration. Defaults to 180 days.

Brackets around an attribute name indicate that the attribute is optional.

Comments are allowed in the input file. Comments must begin with the '#' character.

The data to create the password policy is required to be specified with this option or the **-i** option. The **-f** and the **-i** options are mutually exclusive.

-i   This option allows you to enter the data to create the password policy on the command line, instead of using a file. Data entered on the command line must follow the same format as data in a file, and must be enclosed in double quotes.

The data to create the password policy is required to be specified with this option or the **-f** option. The **-i** and the **-f** options are mutually exclusive.

--help   Display the help text for this command and exit.

EXAMPLES

Create a password policy:

**mkpwdpolicy -i "name=xyzPolicy,description=Company xyz policy,
 pwage=90,min_digits=2,min_uppercase_chars=0,min_lowercase_chars=0"**

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chpwdpolicy, **lspwdpolicy**, **rmpwdpolicy**

NAME
  mksvcevent - create serviceable event

SYNOPSIS
  mksvcevent -d *description*
   -t {**power** | **processor** | **lan** | **software** | **io** | **test** | **other** |
     hmc | **hmctest**}
   [**-m** *managed-system*]
   [**--help**]

DESCRIPTION
  mksvcevent creates a serviceable event on the Hardware Management Console (HMC) to report a problem
  that occurred on *managed-system* or this HMC and to request service to repair it. This command can also
  be used to test whether problems can be reported for *managed-system* or this HMC.

OPTIONS
  -d   The problem description.

  -t   The type of event to create. Valid values are **power** to report a problem with the power subsystem
          of *managed-system*, **processor** to report a problem with hardware in the processor subsystem of
          managed-system, **lan** to report a problem with the local area network (LAN) that attaches *man-
          aged-system*, **software** to report a problem with an operating system or other software loaded on
          managed-system, **io** to report a problem with hardware in the I/O configuration of *managed-sys-
          tem*, **test** to test whether problems can be reported for *managed-system*, **other** to report a problem
          with *managed-system* that is not adequately described by any other event type, **hmc** to report a
          problem with this HMC, and **hmctest** to test whether problems can be reported for this HMC.

  -m   The name of the managed system for which to create the serviceable event. The name may either
          be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is
          the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The
          *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-
          defined name.

          This option is not valid for HMC or HMC test events. This option is required for all other event
          types.

  --help Display the help text for this command and exit.

EXAMPLES
  Test whether serviceable events can be created for managed system **sys1**:

  mksvcevent -d "test problem for sys1" -t test -m sys1

  Test whether serviceable events can be created for this HMC:

  mksvcevent -d "test problem for hmc1" -t hmctest

  Create a serviceable event to report a problem with the LAN that attaches to managed system
  9119-MME*ZZ00107:

  mksvcevent -d "Network problem detected." -t lan -m 9119-MME*ZZ00107

ENVIRONMENT
  None

BUGS
  None

AUTHOR
       IBM Austin
SEE ALSO
       chsvcevent, **lssvcevents**

NAME
        mksyscfg - create system resources

SYNOPSIS
        mksyscfg -r {**lpar** | **prof** | **sysprof**} **-m** *managed-system*
        [{**-f** *configuration-file* | **-i "***configuration-data***"**}]
        [**-o save** {**-p** *partition-name* | **--id** *partition-ID*}
                -n *profile-name* [**--force**]]
        [**--help**]

DESCRIPTION
        mksyscfg creates partitions, partition profiles, or system profiles for the *managed-system*.

        mksyscfg can also be used to save the current configuration of a partition to a partition profile.

USAGE IN A POWERVM MANAGEMENT CONTROLLER MODE ENVIRONMENT
        When the *managed-system* is in PowerVM management controller mode, the **mksyscfg -r lpar** command
        may be used to create a partition, however the following attributes are not allowed: **profile_name** and
        sync_curr_profile. The partition will be configured immediately with the specified attributes. The Hard-
        ware Management Console (HMC) must be the current PowerVM management controller for the *managed-
        system* when running the **mksyscfg -r lpar** command.

        The **mksyscfg -r prof** and **mksyscfg -r sysprof** commands are not allowed.

OPTIONS
        -r   The type of system resources to create. Valid values are **lpar** for partitions, **prof** for partition pro-
                    files, and **sysprof** for system profiles.

                    When a partition is created, the default profile for the partition is also created.

        -m   The name of the managed system for which the system resources are to be created. The name may
                    either be the user-defined name for the managed system, or be in the form *tttt***-***mmm*******sssssss*, where
                    tttt is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed sys-
                    tem. The *tttt***-***mmm*******sssssss* form must be used if there are multiple managed systems with the
                    same user-defined name.

        -f   The name of the file containing the configuration data needed to create the system resources. The
                    configuration data consists of attribute name/value pairs, which are in comma separated value
                    (CSV) format. These attribute name/value pairs form a configuration record. A line feed marks
                    the end of a configuration record. The file must contain one configuration record for each resource
                    to be created, and each configuration record must be for the same resource type.

                    The format of a configuration record is as follows:

                    attribute-name=*value***,***attribute-name*=*value***,***...*<LF>

                    Note that certain attributes accept a comma separated list of values, as follows:

                    "*attribute-name*=*value***,***value***,***...***"***,...*<LF>

                    When a list of values is specified, the attribute name/value pair must be enclosed in double quotes.
                    Depending on the shell being used, nested double quote characters may need to be preceded by an
                    escape character, which is usually a '\' character.

                    Attribute names for partitions (see below for attribute names that are common to both partitions
                    and partition profiles):
                        name
                            name of the partition to create

[**lpar_id**]
profile_name
   name of the default profile to create
lpar_env
   Valid values are **aixlinux**, **os400**, or
   vioserver
[**allow_perf_collection**]
   Valid values are:
   0 - do not allow
   1 - allow
   This attribute replaces the
   shared_proc_pool_util_auth attribute.
   Setting this attribute also sets the
   shared_proc_pool_util_auth attribute
   to the same value.
[**shared_proc_pool_util_auth**]
   Valid values are:
   0 - do not allow authority
   1 - allow authority
   This attribute has been deprecated. Use
   the **allow_perf_collection** attribute
   instead. Setting this attribute also
   sets the **allow_perf_collection**
   attribute to the same value.
[**lpar_avail_priority**]
   Valid values are **0** - **255**.
[**msp**]
   Virtual I/O server only
   Valid values are:
   0 - the partition is not a mover service
      partition
   1 - the partition is a mover service
      partition
[**time_ref**]
   Valid values are:
   0 - the partition is not a time reference
      partition
   1 - the partition is a time reference
      partition
[**suspend_capable**]
   AIX, Linux, and IBM i only
   Valid values are:
   0 - the partition cannot be suspended
   1 - the partition can be suspended
[**simplified_remote_restart_capable**]
   AIX, Linux, and IBM i only
   Valid values are:
   0 - remote restart without using a reserved storage
      device cannot be performed for the partition
   1 - remote restart without using a reserved storage
      device can be performed for the partition
[**remote_restart_capable**]
   AIX, Linux, and IBM i only
   Valid values are:

0 - remote restart using a reserved storage device
   cannot be performed for the partition
1 - remote restart using a reserved storage device
   can be performed for the partition
[**primary_rs_vios_name** | **primary_rs_vios_id**]
   Remote restart capable partitions only
[**secondary_rs_vios_name** | **secondary_rs_vios_id**]
   Remote restart capable partitions only
   To set no secondary reserved storage VIOS specify
   none for **secondary_rs_vios_id**
[**rs_device_name**]
   Remote restart capable partitions only
   Name of the device on the primary reserved storage
   VIOS partition
[**vtpm_enabled**]
   AIX, Linux, and VIOS only
   Valid values are:
   0 - virtual Trusted Platform Module (vTPM) is not
      enabled for this partition
   1 - vTPM is enabled for this partition
[**vtpm_version**]
   AIX, Linux, and VIOS only
   The valid values for the *managed-system* are
   displayed by the **lssyscfg -r sys -m** *managed-system*
   -F supported_vtpm_versions command.
[**vtpm_encryption**]
   AIX, Linux, and VIOS only
   The valid values for the *managed-system* are
   displayed by the **lssyscfg -r sys -m** *managed-system*
   -F supported_vtpm_encryptions command.
[**os400_restricted_io_mode**]
   IBM i only
   Valid values are:
   0 - disable IBM i restricted I/O mode
   1 - enable IBM i restricted I/O mode
[**sync_curr_profile**]
   Specifies whether this partition's current
   configuration is to be synchronized with its
   current active profile. Valid values are:
   0 - disable synchronization
   1 - enable synchronization
   2 - suspend synchronization until the next
      time a profile is activated or applied
[**hardware_mem_encryption**]
   Valid values are:
   0 - disable hardware-accelerated encryption
   1 - enable hardware-accelerated encryption
[**hardware_mem_expansion**]
   Valid values are:
   0 - disable hardware-accelerated Active Memory
      Expansion
   1 - enable hardware-accelerated Active Memory
      Expansion
[**powervm_mgmt_capable**]

Linux only
Valid values are:
0 - do not allow this partition to provide
  PowerVM management functions
1 - enable this partition to provide PowerVM
  management functions
[**migration_disabled**]
  AIX, Linux, and IBM i only
  Valid values are:
  0 - do not disable partition migration for this
    partition
  1 - disable partition migration for this
    partition
[**secure_boot**]
  AIX, Linux, and VIOS only
  Valid values are:
  0   - disable secure boot for this partition
  1   - enable secure boot in log only mode for
      this partition
  2   - enable secure boot for this partition
  3 - **9** - advanced settings, consult your operating
      system documentation
[**virtual_serial_num**]
  AIX, Linux, and IBM i only
  Virtual serial number, or one of the following values:
  auto - automatically assign a virtual serial number
  none - no virtual serial number (default value)
[**keystore_kbytes**]
  kilobytes
[**description**]
[**keystore_signed_updates**]
  Valid values are:
  0 - disable
  1 - enable
[**linux_dynamic_key_secure_boot**]
  Linux only
  Valid values are:
  0 - disable
  1 - enable

Attribute names for partition profiles (see below for attribute names that are common to both partition profiles and partitions):
  name
    name of the partition profile to create
  lpar_name | **lpar_id**
    name or ID of the partition for which
    to create the profile

Attribute names for both partitions and partition profiles:
  [**all_resources**]
    Valid values are:
    0 - do not use all the managed system
      resources
    1 - use all the managed system resources

(this option is not valid for IBM i
partitions on IBM System p5 or
eServer p5 servers)

min_mem
   megabytes
desired_mem
   megabytes
max_mem
   megabytes
[**min_num_huge_pages**]
   AIX and Linux only
[**desired_num_huge_pages**]
   AIX and Linux only
[**max_num_huge_pages**]
   AIX and Linux only
[**mem_mode**]
   Valid values are:
   ded   - dedicated memory
   shared - shared memory
[**desired_io_entitled_mem**]
   Specify the number of megabytes or specify **auto** for
   automatic I/O entitled memory management mode
[**mem_weight**]
[**primary_paging_vios_name** | **primary_paging_vios_id**]
[**secondary_paging_vios_name** | **secondary_paging_vios_id**]
   To set no secondary paging VIOS specify **none** for
   secondary_paging_vios_id
[**mem_expansion**]
   Valid values are:
   0   - disable Active Memory Expansion
   1.00-**10.00** - expansion factor
[**hpt_ratio**]
   Ratio of hardware page table size to the maximum
   memory for the partition. Valid values are displayed
   by the **lshwres -r mem -m** *managed-system*
   --level sys -F possible_hpt_ratios command.
[**ppt_ratio**]
   Ratio of physical page table size to the maximum
   memory for the partition. Valid values are displayed
   by the **lshwres -r mem -m** *managed-system*
   --level sys -F possible_ppt_ratios command.
[**proc_mode**]
   Valid values are:
   ded   - dedicated processors
   shared - shared processors
[**min_procs**]
[**desired_procs**]
[**max_procs**]
[**min_proc_units**]
[**desired_proc_units**]
[**max_proc_units**]
[**sharing_mode**]
   Valid values for partitions using
   dedicated processors are:

       keep_idle_procs - never share
          processors

       share_idle_procs - share processors only
          when partition is inactive

       share_idle_procs_active - share
          processors only when partition
          is active

       share_idle_procs_always - always share
          processors

       Valid values for partitions using shared
       processors are:

       cap   - capped

       uncap - uncapped

[**uncap_weight**]
       Default value is **128**

[**shared_proc_pool_name** | **shared_proc_pool_id**]

[**affinity_group_id**]
       Memory and processor affinity group in which the
       partition will participate. Valid values are
       none and **1** - **255**.

[**io_slots**]
       Comma separated list of I/O slots, with
       each I/O slot having the following
       format:

       slot-DRC-index/[*slot-IO-pool-ID*]/
       is-required

       Both '/' characters must be present, but
       optional values may be omitted. Optional
       values are *slot-IO-pool-ID*.

       Valid values for *is-required*:
       0 - no
       1 - yes

       For example:
       21030002/3/1 specifies an I/O slot with a
       DRC index of **21030002**, it is assigned to
       I/O pool **3**, and it is a required slot.

[**lpar_io_pool_ids**]
       comma separated

[**load_source_slot**]
       IBM i only
       DRC index of I/O slot, DRC index of SR-IOV logical
       port, or virtual slot number

[**alt_restart_device_slot**]
       IBM i only
       DRC index of I/O slot, DRC index of SR-IOV logical
       port, or virtual slot number

[**console_slot**]
       IBM i only
       DRC index of I/O slot, DRC index of SR-IOV logical
       port, virtual slot number, or the value **hmc**

[**alt_console_slot**]
    IBM i only
    DRC index of I/O slot
[**op_console_slot**]
    IBM i only
    DRC index of I/O slot
[**auto_start**]
    Valid values are:
    0 - off
    1 - on
[**boot_mode**]
    AIX, Linux, and virtual I/O server only
    Valid values are:
    norm - normal
    dd   - diagnostic with default boot list
    ds   - diagnostic with stored boot list
    of   - Open Firmware OK prompt
    sms - System Management Services
[**power_ctrl_lpar_ids** | **power_ctrl_lpar_names**]
    comma separated
[**conn_monitoring**]
    Valid values are:
    0 - off
    1 - on
[**virtual_opti_pool_id**]
    IBM i only
    Valid values are:
    0 - virtual OptiConnect is disabled
    1 - virtual OptiConnect is enabled
[**max_virtual_slots**]
[**virtual_eth_adapters**]
    Comma separated list of virtual ethernet adapters,
    with each adapter having the following format:

    virtual-slot-number/*is-IEEE*/*port-vlan-ID*/
    [*additional-vlan-IDs*]/[*trunk-priority*]/
    is-required[/[*virtual-switch*][/[*MAC-address*]/
    [*allowed-OS-MAC-addresses*]/[*QoS-priority*]]]

    The first 5 '/' characters must be present. The 6th
    '/' character is optional, but it must be present if
    virtual-switch or any of the values following
    virtual-switch are specified. The last 3 '/'
    characters are optional, but all 3 must be present if
    MAC-address, *allowed-OS-MAC-addresses*, or *QoS-priority*
    is specified.

    Optional values may be omitted. Optional values are
    additional-vlan-IDs, *trunk-priority*, *virtual-switch*,
    MAC-address, *allowed-OS-MAC-addresses*, and
    QoS-priority.

    Valid values for *is-IEEE* and *is-required*:
    0 - no

1 - yes

If values are specified for *additional-vlan-IDs*, they must be comma separated.

Valid values for *trunk-priority*:
0   - this adapter is not a trunk adapter (default value)
1 - **15** - this adapter is a trunk adapter with the specified priority

If *MAC-address* is not specified, a unique MAC address will be automatically generated for the adapter. If it is specified, it must be specified as 12 hexadecimal characters. It is highly recommended that you do not specify *MAC-address* so that the MAC address will be automatically generated.

allowed-OS-MAC-addresses can be a comma separated list of 1 to 4 MAC addresses, where each MAC address is specified as 12 hexadecimal characters, or it can be one of the following values:
all - all OS defined MAC addresses are allowed (default value)
none - no OS defined MAC addresses are allowed

Valid values for *QoS-priority*:
none - do not use Quality of Service (QoS) (default value)
0 - **7** - the QoS priority level to use

For example:
13/1/5/6,7/2/1
specifies a virtual ethernet adapter with a virtual slot number of **13**, it is IEEE 802.1Q compatible, it has a port virtual LAN ID of **5**, additional virtual LAN IDs of **6** and **7**, it is a trunk adapter with a trunk priority of **2**, and it is required. It also uses the default virtual switch, it uses an automatically generated MAC address, it allows all OS defined MAC addresses, and it does not use QoS.

4/1/3//0/1///fecd537a910b,fecd537a910c/2
specifies a virtual ethernet adapter with a virtual slot number of **4**, it is IEEE 802.1Q compatible, it has a port virtual LAN ID of **3**, no additional virtual LAN IDs, it is not a trunk adapter, it is required, it uses the default virtual switch, it uses an automatically generated MAC address, it allows the OS defined MAC addresses FE:CD:53:7A:91:0B and FE:CD:53:7A:91:0C, and it uses a QoS priority level of **2**.
[**virtual_eth_vsi_profiles**]
    Comma separated list of virtual ethernet adapter

Virtual Station Interface (VSI) profile attributes:

virtual-slot-number/*VSI-manager-ID*/*VSI-type-ID*/
VSI-type-version

All 3 '/' characters must be present, and all values
are required.

For example:
15/2/1193040/1
specifies a VSI profile for the virtual ethernet
adapter in slot **15**. The VSI profile has a VSI
manager ID of **2**, a VSI type ID of **1193040**, and a
VSI type version of **1**.

[**virtual_fc_adapters**]
Comma separated list of virtual fibre channel
adapters, with each adapter having the following
format:

virtual-slot-number/*client-or-server*/
[*remote-lpar-ID*]/[*remote-lpar-name*]/
remote-slot-number/[*wwpns*]/*is-required*

All 6 '/' characters must be present, but optional
values may be omitted. Optional values are
remote-lpar-ID or *remote-lpar-name* (one of those
values is required, but not both).

wwpns is optional for a client adapter, and is not
allowed for a server adapter. If *wwpns* is not
specified, WWPNs will be automatically generated for a
client adapter. It is highly recommended that you do
not specify *wwpns* so that WWPNs will be automatically
generated.

Valid values for *client-or-server*:
client
server

Valid values for *is-required*:
0 - no
1 - yes

For example:
4/client//vios_p1/16//1
specifies a virtual fibre channel **client** adapter
with a virtual slot number of **4**, a remote (server)
partition name of **vios_p1**, a remote (server) slot
number of **16**, and it is required. WWPNs will be
automatically generated for this client adapter.

[**virtual_scsi_adapters**]
Comma separated list of virtual SCSI
adapters, with each adapter having the
following format:

virtual-slot-number/*client-or-server*/
[*remote-lpar-ID*]/[*remote-lpar-name*]/
[*remote-slot-number*]/*is-required*

All 5 '/' characters must be present, but
optional values may be omitted. Optional
values for server adapters are
remote-lpar-ID, *remote-lpar-name*,
and *remote-slot-number*. Optional values
for client adapters are *remote-lpar-ID* or
remote-lpar-name (one of those values
is required, but not both).

Valid values for *client-or-server*:
client
server

Valid values for *is-required*:
0 - no
1 - yes

For example:
14/client/2//13/0
specifies a virtual SCSI **client** adapter
with a virtual slot number of **14**, a
remote (server) partition ID of **2**, a
remote (server) slot number of **13**, and
it is not required.

[**virtual_serial_adapters**]
Comma separated list of virtual serial
adapters, with each adapter having the
following format:

virtual-slot-number/*client-or-server*/
[*supports-HMC*]/[*remote-lpar-ID*]/
[*remote-lpar-name*]/[*remote-slot-number*]/
is-required

All 6 '/' characters must be present, but
optional values may be omitted. Optional
values for server adapters are
supports-HMC, *remote-lpar-ID*,
remote-lpar-name, and *remote-slot-number*.
Optional values for client adapters are
remote-lpar-ID or *remote-lpar-name* (one
of those values is required, but not
both), and the *supports-HMC* value is
not allowed.

Valid values for *client-or-server*:
client
server

Valid values for *supports-HMC*:

0 - no

Valid values for *is-required*:
0 - no
1 - yes

For example:
14/server/0////0
specifies a virtual serial **server** adapter
with a virtual slot number of **14**, it does
not support an HMC connection, any client
adapter is allowed to connect to it, and
it is not required.
[**vnic_adapters**]
AIX, Linux, and IBM i only
Comma separated list of virtual NICs, with each
virtual NIC consisting of a list of colon separated
property name/value pairs, which can be specified
in any order:

property-name=*value***:***property-name*=*value***:**...

Property names:

slot_num
Required
port_vlan_id
Port VLAN ID or **0** to disable VLAN tag
insertions for untagged frames (default value)
pvid_priority
Valid values:
An integer between **0** and **7**, inclusive.
Default value is **0**.
allowed_vlan_ids
Comma separated list of VLAN IDs, or one of the
following values:
all - all VLAN IDs are allowed (default value)
none - no VLAN IDs are allowed
mac_addr
12 hexadecimal characters
If not specified, a unique MAC address will be
automatically generated for the virtual NIC.
It is highly recommended that you use an
automatically generated MAC address.
allowed_os_mac_addrs
Comma separated list of MAC addresses, each
specified as 12 hexadecimal characters. Other
valid values:
all - all OS defined MAC addresses are allowed
(default value)
none - no OS defined MAC addresses are allowed
is_required
Valid values:
0 - no

1 - yes (default value)
auto_priority_failover
Valid values:
0 - automatic priority failover is disabled
1 - automatic priority failover is enabled
(default value)
backing_devices
Required
Comma separated list of virtual NIC backing
devices, with each backing device having the
following format:

sriov/*vios-lpar-name*/*vios-lpar-ID*/
sriov-adapter-ID/*sriov-physical-port-ID*/
[*capacity*][/[*failover-priority*][/
[*max-capacity*]]]

The first 5 '/' characters must be present. The
6th '/' character is optional, but it must be
present if *failover-priority* or *max-capacity*
is specified. The 7th '/' character is optional,
but it must be present if *max-capacity* is
specified.

Optional values may be omitted. Optional values
are *capacity*, either *vios-lpar-name* or
vios-lpar-ID, *failover-priority*, and
max-capacity.

Specify *capacity* and *max-capacity* each as
a percentage with up to 2 decimal places.
max-capacity defaults to **100** if not specified.

Specify *failover-priority* as a value between **1**
and **100** inclusive, with **1** being the highest
priority. It defaults to **50** if not specified.

For example:
slot_num=5:backing_devices=sriov/vios1//1/0//1,
sriov/vios2//2/0//10/50 specifies a virtual NIC with
a virtual slot number of **5** and 2 backing devices.
The first backing device is on VIOS **vios1** and
physical port **0** of SR-IOV adapter **1** and has a failover
priority of **1**. The second backing device is on VIOS
vios2 and physical port **0** of SR-IOV adapter **2** and
has a failover priority of **10** and a maximum capacity
of **50**%. All the other virtual NIC properties are
configured with default values.
[**work_group_id**]
Specify **none** if you are not using
Enterprise Workload Manager (EWLM)
[**redundant_err_path_reporting**]
Valid values are:
0 - disable

1 - enable

[**electronic_err_reporting**]

IBM i only

Valid values are:

0 - disable

1 - enable

[**lpar_proc_compat_mode**]

The valid values for the *managed-system* are
displayed by the **lssyscfg -r sys -m** *managed-system*
-F lpar_proc_compat_modes command.

[**sriov_eth_logical_ports**]

Comma separated list of SR-IOV ethernet logical ports,
with each logical port consisting of a list of colon
separated property name/value pairs, which can be
specified in any order:

property-name=*value***:***property-name*=*value***:***...*

Property names:

adapter_id

Required

phys_port_id

Required

allowed_os_mac_addrs

Comma separated list of MAC addresses, each
specified as 12 hexadecimal characters. Other
valid values:

all - all OS defined MAC addresses are allowed
(default value)

none - no OS defined MAC addresses are allowed

allowed_priorities

Comma separated list of integers between **0** and
7, inclusive, or one of the following values:

all - all supported priorities are allowed

none - no priorities are allowed (default value)

allowed_vlan_ids

Comma separated list of VLAN IDs, or one of the
following values:

all - all VLAN IDs are allowed (default value)

none - no VLAN IDs are allowed

capacity

A percentage with up to 2 decimal places. Must
be a multiple of **min_eth_capacity_granularity**
of the physical port, which is displayed by the
lshwres -m *managed-system* **-r sriov**
--rsubtype physport --level {eth | ethc}
-F min_eth_capacity_granularity command.
The minimum value and the default value is
min_eth_capacity_granularity. The maximum
value is **100**.

max_capacity

A percentage with up to 2 decimal places. The
minimum value is **capacity**. The maximum value

and the default value is **100**.

config_id
　　If not specified, the management console will
　　assign the next available value.

diag_mode
　　Valid values:
　　0 - disable (default value)
　　1 - enable

　　Warning! If diagnostics mode is enabled, no other
　　logical port may be attached to the physical
　　port. If logical ports are already in use on the
　　physical port, you will have to power off
　　partitions or use Dynamic Logical Partitioning
　　(DLPAR) to remove the logical ports that are
　　attached to the physical port.

huge_dma_window_mode
　　Valid values:
　　0 - disable (default value)
　　1 - enable

logical_port_id
　　DRC index of an SR-IOV logical port. If not
　　specified, an SR-IOV logical port will be
　　automatically assigned.

mac_addr
　　12 hexadecimal characters
　　If not specified, a unique MAC address will be
　　automatically generated for the logical port.
　　It is highly recommended that you use an
　　automatically generated MAC address.

port_vlan_id
　　Port VLAN ID or **0** to disable VLAN tag
　　insertions for untagged frames (default value)

promisc_mode
　　Valid values:
　　0 - disable (default value)
　　1 - enable

pvid_priority
　　Valid values:
　　An integer between **0** and **7**, inclusive.
　　Default value is **0**.

migratable
　　Valid values:
　　0 - this logical port cannot be migrated
　　　(default value)
　　1 - this logical port can be migrated

backup_device_type
　　Backup device type for a migratable logical port
　　Valid values:
　　vnic - virtual NIC (default)
　　veth - virtual ethernet

backup_device_slot_num
　　Defaults to the next available virtual slot
　　number

backup_vnic_backing_device
Specify the following format:

sriov/*vios-lpar-name***/***vios-lpar-ID***/**
*sriov-adapter-ID***/***sriov-physical-port-ID***/**
[*capacity*][/[/[*max-capacity*]]]

The first 5 '/' characters must be present. The
6th and 7th '/' characters are optional, but they
must be present if *max-capacity* is specified.

Optional values may be omitted. Optional values
are *capacity*, either *vios-lpar-name* or
vios-lpar-ID, and *max-capacity*.

Specify *capacity* and *max-capacity* each as
a percentage with up to 2 decimal places.
max-capacity defaults to **100** if not specified.

When the backup device type is virtual NIC, the
management console assigns a backing device if
this attribute is not specified. Note that the
management console can only assign a backing
device on an SR-IOV physical port that has the
same port label as the physical port for this
logical port.

backup_veth_vnetwork
Required when the backup device type is virtual
ethernet

For example:
adapter_id=1:phys_port_id=0 specifies that an
unconfigured SR-IOV logical port on physical port **0**
of the SR-IOV adapter with the adapter ID of **1** will
be selected and configured with default ethernet
logical port values.

[**sriov_roce_logical_ports**]
Comma separated list of SR-IOV RDMA over Converged
Ethernet (RoCE) logical ports, with each logical port
consisting of a list of colon separated property
name/value pairs, which can be specified in any order:

property-name=*value***:***property-name*=*value***:**...

Property names:

adapter_id
Required
phys_port_id
Required
allowed_os_mac_addrs
Comma separated list of MAC addresses, each
specified as 12 hexadecimal characters. Other
valid values:

> **all** - all OS defined MAC addresses are allowed
> (default value)
>
> **none** - no OS defined MAC addresses are allowed

allowed_priorities
> Comma separated list of integers between **0** and
> **7**, inclusive, or one of the following values:
> **all** - all supported priorities are allowed
> **none** - no priorities are allowed (default value)

allowed_vlan_ids
> Comma separated list of VLAN IDs, or one of the
> following values:
> **all** - all VLAN IDs are allowed (default value)
> **none** - no VLAN IDs are allowed

capacity
> A percentage with up to 2 decimal places. Must
> be a multiple of **min_roce_capacity_granularity**
> of the physical port, which is displayed by the
> **lshwres -m** *managed-system* **-r sriov**
> **--rsubtype physport --level roce -F**
> **min_roce_capacity_granularity** command.
> The minimum value and the default value is
> **min_roce_capacity_granularity**. The maximum
> value is **100**.

max_capacity
> A percentage with up to 2 decimal places. The
> minimum value is **capacity**. The maximum value
> and the default value is **100**.

config_id
> If not specified, the management console will
> assign the next available value.

diag_mode
> Valid values:
> **0** - disable (default value)
> **1** - enable
>
> **Warning!** If diagnostics mode is enabled, no other
> logical port may be attached to the physical
> port. If logical ports are already in use on the
> physical port, you will have to power off
> partitions or use Dynamic Logical Partitioning
> (DLPAR) to remove the logical ports that are
> attached to the physical port.

huge_dma_window_mode
> Valid values:
> **0** - disable (default value)
> **1** - enable

logical_port_id
> DRC index of an SR-IOV logical port. If not
> specified, an SR-IOV logical port will be
> automatically assigned.

mac_addr
> 12 hexadecimal characters
> If not specified, a unique MAC address will be
> automatically generated for the logical port.

It is highly recommended that you use an
automatically generated MAC address.

port_vlan_id
Port VLAN ID or **0** to disable VLAN tag
insertions for untagged frames (default value)

promisc_mode
Valid values:
0 - disable (default value)
1 - enable

pvid_priority
Valid values:
An integer between **0** and **7**, inclusive.
Default value is **0**.

For example:
adapter_id=1:phys_port_id=0:capacity=10 specifies that
an unconfigured SR-IOV logical port on physical port **0**
of the SR-IOV adapter with the adapter ID of **1** will
be selected and configured with a capacity of **10**% and
with default RoCE logical port values for the other
attributes.

Attribute names for system profiles:
name
name of the system profile to create
lpar_names | **lpar_ids**
comma separated
profile_names
comma separated

Brackets around an attribute name indicate that the attribute is optional.

The **-f** and the **-i** options are mutually exclusive.

Configuration data is required to be specified with this option or the **-i** option except when **-o save**
is specified to save the current configuration of a partition to a partition profile. This option is not
valid when **-o save** is specified.

-i   This option allows you to enter configuration data on the command line, instead of using a file.
Data entered on the command line must follow the same format as data in a file, and must be
enclosed in double quotes.

When this option is used, only a single system resource can be created.

The **-i** and the **-f** options are mutually exclusive.

Configuration data is required to be specified with this option or the **-f** option except when **-o save**
is specified to save the current configuration of a partition to a partition profile. This option is not
valid when **-o save** is specified.

-o   The operation to perform. The only valid value is **save** to save the current configuration of a parti-
tion to a partition profile.

If this option is not specified, then new system resources will be created using the configuration
data specified with the **-f** or **-i** option.

-p   The name of the partition whose current configuration is to be saved to a partition profile.

You can either use this option to specify the name of the partition whose current configuration is to be saved, or use the **--id** option to specify the partition's ID. The **-p** and the **--id** options are mutually exclusive.

A partition is required to be specified with this option or the **--id** option when **-o save** is specified to save the current configuration of a partition to a partition profile. This option is not valid otherwise.

--id   The ID of the partition whose current configuration is to be saved to a partition profile.

You can either use this option to specify the ID of the partition whose current configuration is to be saved, or use the **-p** option to specify the partition's name. The **--id** and the **-p** options are mutually exclusive.

A partition is required to be specified with this option or the **-p** option when **-o save** is specified to save the current configuration of a partition to a partition profile. This option is not valid otherwise.

-n   The name of the partition profile to which to save the partition configuration. If *profile-name* is the name of an existing partition profile, this command will fail unless the **--force** option is specified.

This option is required when **-o save** is specified to save the current configuration of a partition to a partition profile. This option is not valid otherwise.

--force When saving the current configuration of a partition to a partition profile, specify this option to overwrite an existing partition profile. Full system profiles cannot be overwritten.

This option is only valid when **-o save** is specified to save the current configuration of a partition to a partition profile.

--help Display the help text for this command and exit.

EXAMPLES

In the following examples nested double quote characters are preceded by an escape character ('\'). The escape characters are required to run the commands locally on an HMC.

Create an AIX or Linux partition:

mksyscfg -r lpar -m system1 -i "name=aix_lpar2,profile_name=prof1,
lpar_env=aixlinux,min_mem=256,desired_mem=1024,max_mem=1024,
proc_mode=ded,min_procs=1,desired_procs=1,max_procs=2,
sharing_mode=share_idle_procs,auto_start=1,boot_mode=norm,
lpar_io_pool_ids=3,\"io_slots=21010003/3/1,21030003//0\",
max_virtual_slots=20,\"virtual_fc_adapters=10/client/1//110//1,
\"\"11/client/2//111/c0507609a405005a,c0507609a405005b/1\"\"\"\""

Create an IBM i partition profile:

mksyscfg -r prof -m 9406-570*34134441 -i "name=prof2,
lpar_id=3,min_mem=512,desired_mem=512,max_mem=1024,proc_mode=shared,
min_procs=1,desired_procs=1,max_procs=2,min_proc_units=0.1,
desired_proc_units=0.5,max_proc_units=1.5,sharing_mode=uncap,
uncap_weight=128,auto_start=1,\"lpar_io_pool_ids=1,2\",
\"io_slots=2101001B/1/1,2103001B/2/1,2105001B//0\",
load_source_slot=2101001B,console_slot=hmc,max_virtual_slots=14,

        \"virtual_scsi_adapters=12/client/2//13/1,13/server////1\""

Create partition profiles using the configuration data in the file **/tmp/profcfg**:

mksyscfg -r prof -m system1 -f /tmp/profcfg

Create a new partition profile by saving the current configuration of a partition:

mksyscfg -r prof -m system1 -o save -p p1 -n newProfile

Create a system profile:

mksyscfg -r sysprof -m system1 -i "name=sysprof1,
\"lpar_names=lpar1,lpar2\",\"profile_names=prof1,prof1\""

Save the current configuration of a partition to an existing profile:

mksyscfg -r prof -m system1 -o save -p aix1 -n activeProfile --force

ENVIRONMENT
     None

BUGS
     None

AUTHOR
     IBM Austin

SEE ALSO
     chsyscfg, **lssyscfg**, **rmsyscfg**

NAME

mksysconn - create system connection

SYNOPSIS

To establish a connection and add a system to the Hardware Management Console (HMC):

mksysconn --ip *IP-address* [**-u** *user-ID*] [**--passwd** *password*]
        [**--force**] [**--help**]

To enable all systems to be automatically discovered by the HMC when using DHCP:

mksysconn -o auto [**--help**]

DESCRIPTION

mksysconn establishes a connection from the Hardware Management Console (HMC) to a system in the network and adds the system to the systems managed by the HMC. If a connection to the system cannot be established because the network is down, the service processor for the system is down, or too many other HMCs have already established a connection to the system, the system will be added as a managed system which is in the No Connection state.

If your HMC is set up as a DHCP server on a private network, **mksysconn -o auto** can enable all systems to be automatically discovered by the HMC in the event that the Remove Connection task or the **rmsysconn** command was previously run to remove a system from the HMC.

If your HMC is set up as a DHCP server on a private network, do not use this command to establish HMC connections to managed systems that are DHCP clients. This command is intended for use on a public network only, where the systems are set to use static IP addresses. Using this command in a DHCP environment establishes a temporary connection that will not continue to work properly over network configuration changes, system power loss, and service repair actions.

OPTIONS

--ip   To connect to a system and add the system to the systems managed by the HMC, specify the IP address or host name of the service processor for the system.

-u   The user ID for the Baseboard Management Controller (BMC) or Enterprise BMC to which to connect. If you are not using the default user ID for the BMC or Enterprise BMC, use this option to specify the user ID you are using. Otherwise omit this option and the default user ID will be used.

This option is only valid for OpenPower systems and Enterprise BMC-based systems.

--passwd
The HMC Access password for the system to which to connect. If this option is omitted, you will be prompted to enter the password.

--force If the HMC is unable to determine if the specified IP address belongs to a system, use this option to force the HMC to attempt to establish a connection.

-o   If your HMC is set up as a DHCP server on a private network, specify **auto** with this option to enable the HMC to automatically discover all systems. You may need to do this if the Remove Connection task or the **rmsysconn** command was previously run to remove a system from the HMC, and you want the HMC to be able to manage a system with the same IP address again. Whenever a managed system is removed from the HMC when using DHCP, the HMC places the IP address(es) of that system in a list of removed IP addresses. Any IP address in that list will not be automatically rediscovered by the HMC. The **mksysconn -o auto** command removes all IP addresses from that list. To remove a specific IP address from that list, you can run the **rmsysconn -o rediscover** command instead.

auto is the only value that can be specified with this option. When this option is specified, all other options are ignored.

--help   Display the help text for this command and exit.

EXAMPLES

Connect to and add the system with the host name **sys1.company.com**:

mksysconn --ip sys1.company.com --passwd sys1pw

Connect to and add the system with the IP address 9.3.152.145 (the HMC Access password for the system must be entered when prompted):

mksysconn --ip 9.3.152.145

To enable all systems to be automatically discovered by the HMC when using DHCP:

mksysconn -o auto

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chsysconn, **lssysconn**, **rmsysconn**, **lssyscfg**

NAME

mksysplan - make system plan file

SYNOPSIS

mksysplan -f *file-name* **-m** *managed-system*
[**--check**] [**-d** "*description*"]
[**--noprobe**] [**--nohwdisc**] [**--noinvscout**]
[**-v**] [**--help**]

DESCRIPTION

mksysplan creates a system plan file that represents the information known about the hardware, partitions, profiles, and partition provisioning for the *managed-system*.

By default, mksysplan will perform additional inventory probes of active partitions and attempt hardware discovery for inactive partitions or unallocated hardware.

OPTIONS

-f   Specifies the file name that will contain the system plan that this command creates. If the file does not exist, the command will create it in the system plan file directory on the Hardware Management Console (HMC). If the file exists, the command will overwrite the contents of the file unless the **--check** option is specified.

The file name can only consist of the alphanumeric characters (upper and lower case) and a set of special characters (comma, period, hyphen, underscore, and space). The file name cannot begin with a period or hyphen.

The file name must end with the **.sysplan** suffix.

-m   Specifies the name of the managed system that the command will use to get the information to create the system plan file.

The name can be either the user-defined name for the managed system, or it can be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

--check
Specifies that this command will check the system plan directory to see if the file name specified with the **-f** option already exists. If the file does exist, the command will fail with an error message.

-d   Specifies a description that the command will add to the created file.

--noprobe
Limit the inventory gathering to obtain only the PCI slot devices without any further inventory probes of active partitions, without any refresh of inactive partition or unallocated hardware information, and without gathering additional information from VIOS partitions.

--nohwdisc
Do not perform hardware discovery for inactive partitions or unallocated hardware.

--noinvscout
Do not perform additional inventory probes of active partitions.

-v   Displays verbose output during command processing, in addition to the default messages.

--help   Display the help text for this command and exit.

EXAMPLES

Make a system plan file **sysplan.sysplan** that represents the configuration of the managed system **mySystem**:

mksysplan -f sysplan.sysplan -m mySystem

Make a system plan file **sysplan.sysplan** that represents the configuration of the managed system **9406-570*3413556**, and only survey PCI devices in slots:

mksysplan -f sysplan.sysplan -m 9406-570*3413556 -d "New 570 system plan for 5/11/2007" --noprobe

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
cpsysplan, **deploysysplan**, **lssysplan**, **rmsysplan**

NAME
     mkviosbk - create VIOS backup

SYNOPSIS
     mkviosbk -t {**viosioconfig** | **vios** | **ssp**} **-m** *managed-system*
     {**-p** *VIOS-name* | **--id** *VIOS-ID* | **--uuid** *VIOS-UUID*}
     -f *file* [**-a** "*attributes*"] [**--force**] [**--help**]

DESCRIPTION
     mkviosbk creates a Virtual I/O Server (VIOS) backup on the Hardware Management Console (HMC).

OPTIONS
     -t   The type of VIOS backup to create. Valid values are **viosioconfig** for a VIOS I/O configuration
                 backup, **vios** for a full VIOS backup, and **ssp** for a Shared Storage Pool configuration backup.

     -m   The name of the managed system which has the VIOS to back up. The name may either be the
                 user-defined name for the managed system, or be in the form *tttt*-*mmm***sssssss*, where *tttt* is the
                 machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The
                 tttt-*mmm***sssssss* form must be used if there are multiple managed systems with the same user-
                 defined name.

     -p   The name of the VIOS to back up.

                 You can either use this option to specify the name of the VIOS, the **--id** option to specify the ID of
                 the VIOS, or the **--uuid** option to specify the UUID of the VIOS. The **-p**, **--id**, and **--uuid** options
                 are mutually exclusive.

     --id   The ID of the VIOS to back up.

                 You can either use this option to specify the ID of the VIOS, the **-p** option to specify the name of
                 the VIOS, or the **--uuid** option to specify the UUID of the VIOS. The **--id**, **-p**, and **--uuid** options
                 are mutually exclusive.

     --uuid   The UUID of the VIOS to back up.

                 You can either use this option to specify the UUID of the VIOS, the **-p** option to specify the name
                 of the VIOS, or the **--id** option to specify the ID of the VIOS. The **--uuid**, **-p**, and **--id** options are
                 mutually exclusive.

     -f   The name of the file where the backup will be saved.

                 If *file* already exists, this command will fail unless the **--force** option is specified.

     -a   Attributes that specify whether additional content is to be included in a full VIOS backup.

                 The format of the attributes are as follows:

                 "*attribute-name*=*value*,*attribute-name*=*value*,..."

                 Valid attribute names:
                     nimol_resource
                         Valid values are:
                         0 - do not include the NIMOL resources
                         1 - include the NIMOL resources
                     media_repository
                         Valid values are:
                         0 - do not include the contents of the media
                             repository
                         1 - include the contents of the media repository
                     volume_group_structure

Valid values are:
0 - do not include the volume groups structure of user
defined volume groups
1 - include the volume groups structure of user
defined volume groups

All attributes are optional. If an attribute is not specified, it defaults to 0.

This option is only valid when creating a full VIOS backup.

--force This option allows the specified backup file to be overwritten if it already exists. If the specified backup file already exists and this option is not specified, the backup will fail.

--help Display the help text for this command and exit.

EXAMPLES
Create a Shared Storage Pool configuration backup:

mkviosbk -t ssp -m sys1 -p vios1 -f vios1_ssp_backup

Create a VIOS I/O configuration backup and overwrite the backup file if it already exists:

mkviosbk -t viosioconfig -m 9080-M9S*1234567 -f vios1_io_backup --force
--uuid 2B809AD7-2019-442F-98F2-1C4D4ACB06E7

Create a full VIOS backup and include the NIMOL resources and the contents of the media respository:

mkviosbk -t vios -m sys1 --id 1 -f vios1_full_backup
-a "nimol_resource=1,media_repository=1"

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
chviosbk, **cpviosbk**, **lsviosbk**, **rmviosbk**, **rstviosbk**

NAME

mkvterm - open a virtual terminal session

SYNOPSIS

mkvterm -m *managed-system*
 {**-p** *partition-name* | **--id** *partition-ID*} [**--help**]

DESCRIPTION

mkvterm opens a virtual terminal session for an AIX, Linux, or virtual I/O server partition.

After establishing a virtual terminal session, the ˜. character sequence can be entered in the terminal window to terminate it, or the **rmvterm** command can be used to force the session to be closed.

A partition can only have one open virtual terminal session at a time.

OPTIONS

-m   The name of the managed system which has the partition for which to open the virtual terminal session. The name may either be the user-defined name for the managed system, or be in the form *tttt***-***mmm****ssssssss**, where *tttt* is the machine type, *mmm* is the model, and *ssssssss* is the serial number of the managed system. The *tttt***-***mmm****ssssssss** form must be used if there are multiple managed systems with the same user-defined name.

-p   The name of the partition for which to open the virtual terminal session.

You must either use this option to specify the name of the partition, or use the **--id** option to specify the partition's ID. The **-p** and the **--id** options are mutually exclusive.

--id   The ID of the partition for which to open the virtual terminal session.

You must either use this option to specify the ID of the partition, or use the **-p** option to specify the partition's name. The **--id** and the **-p** options are mutually exclusive.

--help   Display the help text for this command and exit.

EXAMPLES

Open a virtual terminal session for partition **p1**:

mkvterm -m mySystem -p p1

Open a virtual terminal session for the partition with an ID of **1**:

mkvterm -m 9406-570*12345678 --id 1

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

rmvterm

NAME
    monhmc - monitor HMC subsystems and system resources

SYNOPSIS
    To monitor Hardware Management Console (HMC) subsystems:
        monhmc -s {**hmcsvr** | **rmc**} [**-n** *<interval>*]
            [**--help**]

    To monitor HMC system resources:
        monhmc -r {**disk** | **proc** | **mem** | **swap**} [**-n** *<interval>*]
            [**--help**]

DESCRIPTION
    monhmc provides a dynamic real-time view of HMC related subsystems and system resources. The **top**, **watch**, and **df** commands are used to implement this command. Refer to documentation for those commands for additional information.

OPTIONS
    -s   The HMC subsystem to monitor. Valid values are **hmcsvr** for HMC server processes, and **rmc** for Resource Monitoring and Control (RMC) processes.

            Either this option or the **-r** option is required. The **-s** and the **-r** options are mutually exclusive.

    -r   The HMC system resource to monitor. Valid values are **disk** for filesystem disk space usage, **proc** for processor (CPU) usage, **mem** for memory usage, and **swap** for swap space usage.

            Either this option or the **-s** option is required. The **-r** and the **-s** options are mutually exclusive.

    -n   The interval between updates in seconds. The default value for this option is 4 seconds.

            If an interval of 0 is specified, then statistics are displayed only once, and this command exits. If any other interval is specified, or if this option is omitted, then statistics are updated every *interval* seconds, and this command runs until interrupted with Ctrl-c.

    --help Display the help text for this command and exit.

EXAMPLES
    Monitor HMC processor usage and update the statistics every 10 seconds:

    monhmc -r proc -n 10

    Display RMC subsystem statistics once:

    monhmc -s rmc -n 0

ENVIRONMENT
    None

BUGS
    None

AUTHOR
    IBM Austin

NAME

      optmem - optimize memory

SYNOPSIS

      To start a mirrored memory defragmentation operation on a managed system:

         optmem -m *managed-system* **-o start -t mirror**

            [**-q** *quantity*] [**--minutes** *time-limit*]

      To start a Dynamic Platform Optimization operation on a managed system:

         optmem -m *managed-system* **-o start -t affinity**

            [**-p** *partition-names* | **--id** *partition-IDs*]

            [**-x** *partition-names* | **--xid** *partition-IDs*]

      To stop a memory optimization operation on a managed system:

         optmem -m *managed-system* **-o stop** [**--optid** *ID*]

DESCRIPTION

      optmem performs memory optimization operations on the *managed-system*. The memory optimization operations that can be performed with this command are mirrored memory defragmentation operations and Dynamic Platform Optimization operations.

      Dynamic Platform Optimization operations dynamically optimize the placement of partitions to maximize the processor-memory affinity of the partitions, which improves system performance. You can specify a list of partitions to prioritize for optimization, and a list of partitions to protect from the optimization. Partitions which are not specified in either list could be either positively or negatively impacted by the optimization. The **lsmemopt** command can be used to evaluate the current system affinity and the potential system affinity that could be attained by running a Dynamic Platform Optimization operation.

      When a memory optimization operation is in progress, another memory optimization operation cannot be started. In addition, operations that change the memory or processor configuration in the system are not allowed.

      System performance will degrade during a memory optimization operation. A memory optimization operation may take a long time to complete.

OPTIONS

      -m   The name of the managed system on which to perform the memory optimization operation. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

      -o   The operation to perform. Valid values are **start** to start a memory optimization operation, and **stop** to stop the memory optimization operation that is currently in progress. The managed system may not be able to stop the operation immediately, so it may continue to run for several more seconds.

            Dynamic Platform Optimization operations should not be stopped. Stopping a Dynamic Platform Optimization operation before it has completed could leave the system in an affinity state that is much worse than before the operation started.

      -t   The type of memory optimization to perform. Valid values are **mirror** to perform a mirrored memory defragmentation operation, and **affinity** to perform a Dynamic Platform Optimization operation.

      -q   The amount of mirrored memory to be made available by the defragmentation operation. Specify only the additional amount of mirrored memory to be made available; do not include the amount of mirrored memory that is currently available. *quantity* must be in megabytes, it must be a

multiple of the memory region size for the *managed-system*, and it must be greater than 0.

As much additional mirrored memory as possible, up to *quantity*, will be made available by the defragmentation operation. If this option is not specified, then the maximum amount of mirrored memory will be made available.

--minutes
> The time limit, in minutes, for the mirrored memory defragmentation operation. If the operation does not complete within the time limit specified, the operation will be stopped.
>
> The managed system may not be able to stop the operation immediately when the time limit expires, so it may continue to run for several more seconds.
>
> If this option is not specified, the mirrored memory defragmentation operation will not be timed out.

-p
> The name of one or more partitions to prioritize for optimization in a Dynamic Platform Optimization operation.
>
> Multiple partition names must be comma separated.
>
> You can either use this option to specify the names of the partitions to prioritize for optimization, or use the **--id** option to specify the IDs of the partitions. The **-p** and the **--id** options are mutually exclusive.
>
> If neither this option nor the **--id** option is used to specify a list of partitions to prioritize, the managed system will optimize partitions based on its own prioritization. In either case, the managed system will attempt to optimize all partitions except those that are specified in the list of partitions to exclude from the operation.

--id
> The ID of one or more partitions to prioritize for optimization in a Dynamic Platform Optimization operation.
>
> A range of partition IDs may be specified. A range is specified by specifying the beginning partition ID, a dash, and the ending partition ID. Both the beginning and ending partition IDs are included in the range. For example, the range 1-5 includes partitions IDs 1, 2, 3, 4, and 5. The list of partition IDs specified with this option must be comma separated and can include one or more partition IDs, one or more ranges of partition IDs, or both.
>
> You can either use this option to specify the IDs of the partitions to prioritize for optimization, or use the **-p** option to specify the names of the partitions. The **--id** and the **-p** options are mutually exclusive.
>
> If neither this option nor the **-p** option is used to specify a list of partitions to prioritize, the managed system will optimize partitions based on its own prioritization. In either case, the managed system will attempt to optimize all partitions except those that are specified in the list of partitions to exclude from the operation.

-x
> The name of one or more partitions to exclude and protect from the Dynamic Platform Optimization operation. The processor-memory affinity for the partitions will not be impacted by the operation.
>
> Multiple partition names must be comma separated.
>
> You can either use this option to specify the names of the partitions to exclude, or use the **--xid** option to specify the IDs of the partitions. The **-x** and the **--xid** options are mutually exclusive.

If neither this option nor the **--xid** option is used to specify a list of partitions to exclude, no partitions will be excluded from the operation.

--xid   The ID of one or more partitions to exclude and protect from the Dynamic Platform Optimization operation. The processor-memory affinity for the partitions will not be impacted by the operation.

A range of partition IDs may be specified. A range is specified by specifying the beginning partition ID, a dash, and the ending partition ID. Both the beginning and ending partition IDs are included in the range. For example, the range 8-11 includes partitions IDs 8, 9, 10, and 11.

The list of partition IDs specified with this option must be comma separated and can include one or more partition IDs, one or more ranges of partition IDs, or both.

You can either use this option to specify the IDs of the partitions to exclude, or use the **-x** option to specify the names of the partitions. The **--xid** and the **-x** options are mutually exclusive.

If neither this option nor the **-x** option is used to specify a list of partitions to exclude, no partitions will be excluded from the operation.

--optid The ID of the memory optimization operation to stop. If this option is omitted, then the memory optimization operation currently in progress is stopped. The ID is displayed by the **lsmemopt -m** *managed-system* command.

Although this option is not required to stop a memory optimization operation, it is highly recommended that it be specified to prevent the accidental cancellation of the wrong operation.

--help   Display the help text for this command and exit.

EXAMPLES

Start a mirrored memory defragmentation operation with no time limit to make an additional **256** MB of mirrored memory available:

optmem -m system1 -o start -t mirror -q 256

Start a mirrored memory defragmentation operation with a time limit of 1 hour to make as much mirrored memory available as possible:

optmem -m 8233-E8B*1234321 -o start -t mirror --minutes 60

Stop the mirrored memory defragmentation operation currently in progress:

optmem -m system1 -o stop

Start a Dynamic Platform Optimization operation to optimize all partitions in the system:

optmem -m sys -o start -t affinity

Start a Dynamic Platform Optimization operation that prioritizes partitions **lp1** and **lp3** for optimization:

optmem -m sys -o start -t affinity -p lp1,lp3

Start a Dynamic Platform Optimization operation that prioritizes the partitions with IDs **2**, **4**, **6** through **9**, and **11**, for optimization, and excludes the partition with ID **1**:

optmem -m sys -o start -t affinity --id 2,4,6-9,11 --xid 1

ENVIRONMENT
    None

BUGS
    None

AUTHOR
    IBM Austin

SEE ALSO
    lsmemopt

NAME

pedbg - Product Engineering debug tools

SYNOPSIS

pedbg {**-d** {**on** | **off**} | **-j** {**on** | **off**} | **-l** {**rmc** | **se**} | **-c** | **-s** | **-q** {**n**} | **-r**} [**--help**]

DESCRIPTION

pedbg provides debug tools for Product Engineer/Support Personnel. This command requires PE authority to run, i.e, only hscpe user can access this command.

OPTIONS

-d   Turn on or off various debug tracing. This option will restart subsystems to start/stop internal tracing.

-j   Turn on or off Just in Time compiler. Turn off Just in Time compiler will result in loss of performance.

-l   List internal subsystem information. If rmc is specified, the list of RMC daemons will be displayed, along with its state. If se is specified, the IBM.ServiceEvent resource entries are displayed.

-c   Collect various logs and javacore. This option can copy the data collected onto a USB flash memory device or leave a zip file in the /dump directory.

-s   Collect various managed system dumps that were sent to the HMC. This option can copy the data collected onto a USB flash memory device or leave a zip file in the /dump directory.

-q   Collect logs or managed system dumps in quiet mode. Not prompted. Used with either the -c or the -s option.

        Options for log collection:
         1 = network info only
         2 = network info + base logs
         3 = network info + base logs + extended logs
         4 = all logs - network info + base logs + extended logs + archives
         5 = collect files in /home/hscpe/ibmsupt only
         7 = collect RMC ctsnap only
         9 = run prompt to copy files to media

        Options for managed system dumps:
         1 collect all system dump types
         2 collect FSPDUMP
         3 collect SYSDUMP
         4 collect LOGDUMP
         5 collect SMADUMP
         6 collect PWRDUMP
         8 delete all system dumps
         9 = run prompt to copy files to media
         11 collect LPADUMP

-r   Remove the log files collected that are put in /dump.

--help   Display the help text for this command and exit.

EXAMPLES

The following command turns on debug:

   pedbg -d on

The following command disables debug:

pedbg -d off

ENVIRONMENT
        None

BUGS
        None

AUTHOR
        IBM Austin

NAME
      pesh - provides PE shell access

SYNOPSIS
      To obtain full shell access to a Hardware Management Console (HMC):
         pesh *serial-number-of-HMC-machine*

      To obtain full shell access to a virtual HMC:
         pesh *unique-ID-of-virtual-HMC*

DESCRIPTION
      pesh provides full shell access to the HMC for product engineering and support personnel. **pesh** takes the serial number of the HMC machine or unique ID of the virtual HMC where full shell access is requested, then prompts the user for a one day password obtained from the support organization. If the password is valid, the user is granted full shell access. Only the hscpe user can run this command.

EXAMPLES
      On an HMC machine, run the **lshmc -v** command to list the Vital Product Data (VPD) information:

      lshmc -v

      "vpd=*FC ????????
      *VC 20.0
      *N2 Wed Aug 26 08:13:14 CDT 2015
      *FC ????????
      *DS Hardware Management Console
      *TM 7042-CR7
      *SE 10DA45C
      *MN IBM
      *PN 42D01T
      *SZ 8363966464
      *OS Embedded Operating Systems
      *NA 9.3.242.97
      *FC ????????
      *DS Platform Firmware
      *RM V8R8.4.0.0
      "

      Pass the serial number following the SE tag to the **pesh** command:

      pesh 10DA45C

      You will be prompted for a password.

      On a virtual HMC, run the **lshmc -v** command to list the Vital Product Data (VPD) information:

      lshmc -v

      "vpd=*FC ????????
      *VC 20.0
      *N2 Wed Aug 26 13:26:59 CDT 2015
      *FC ????????
      *DS Hardware Management Console
      *TM V4c7-f45

```
*SE 9c4bef5
*MN IBM
*PN N/A
*SZ 4152320000
*OS Embedded Operating Systems
*NA 9.53.178.75
*FC ????????
*DS Platform Firmware
*RM V8R8.4.0.0
*UVMID 4c7f:459c:4980:bef5
"
```

Pass the unique ID following the UVMID tag with or without the :
separators to the **pesh** command:

pesh 4c7f:459c:4980:bef5

or

pesh 4c7f459c4980bef5

You will be prompted for a password.

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

NAME
      refdev - refresh device

SYNOPSIS
      refdev -m *managed-system* {**-p** *partition-name* | **--id** *partition-ID*}
       [**--viosfcportlabel** {**1** | **2**}]
       [**-w** *wait-time*] [**-d** *detail-level*] [**-v**] [**--help**]

DESCRIPTION
      refdev refreshes the partition and profile data used for remote restart of the specified partition. The partition
      and profile data, referred to as remote restart data, is stored on the Hardware Management Console (HMC)
      hard disk for partitions that are capable of simplified remote restart. For partitions that are capable of
      remote restart but not simplified remote restart, the remote restart data is stored on the reserved storage
      device assigned to the partition.

      refdev also refreshes the virtual SCSI and virtual Fibre Channel (FC) adapter data collected from the Vir-
      tual I/O Server (VIOS) partitions hosting the specified partition's client adapters. This data is used during
      partition migration when one or more of the VIOS partitions hosting the migrating partition's client
      adapters on the source managed system are shutdown. This data is stored on the HMC hard disk and is col-
      lected for all AIX, Linux, and IBM i partitions in the managed system when data collection is enabled for
      the managed system.

      The HMC always attempts to automatically keep the remote restart data and the storage adapter data for a
      partition up to date. However, there may be times when the HMC is unable to update the data for a parti-
      tion. If that happens, the user can run this command to force the data to be refreshed.

OPTIONS
      -m   The name of the managed system on which to perform the operation. The name may either be the
                  user-defined name for the managed system, or be in the form *tttt***-***mmm*****sssssss*, where *tttt* is the
                  machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The
                  *tttt***-***mmm*****sssssss* form must be used if there are multiple managed systems with the same user-
                  defined name.

      -p   The name of the partition for which to perform the operation.

                  You must either use this option to specify the name of the partition, or use the **--id** option to spec-
                  ify the partition's ID. The **-p** and the **--id** options are mutually exclusive.

      --id   The ID of the partition for which to perform the operation.

                  You must either use this option to specify the ID of the partition, or use the **-p** option to specify the
                  partition's name. The **--id** and the **-p** options are mutually exclusive.

      --viosfcportlabel
                  Use this option to specify whether VIOS Fibre Channel (FC) port labels are to be used when
                  refreshing virtual FC adapter data. Valid values are **1** if VIOS FC port labels are required to be
                  used, or **2** if VIOS FC port labels are to be used if possible. If this option is not specified, it
                  defaults to the value of the VIOS FC port label override option for the managed system (see the
                  labelvios and **lslabelvios** commands).

                  If VIOS FC port labels are required to be used and the partition has a virtual FC adapter hosted by
                  a VIOS partition which does not support FC port labels, the virtual FC adapter data will not be
                  collected. Specify **2** with this option to collect the virtual FC adapter data.

      -w   The maximum time, in minutes, to wait for VIOS commands issued by the HMC to complete. If a
                  VIOS command does not complete within the time specified, the refresh operation will be stopped.

                  wait-time must be a whole number. If *wait-time* is 0, the refresh operation will not be timed out.

If this option is not specified, a default value of 3 minutes is used.

-d   The level of detail requested from VIOS commands issued by the HMC. Valid values are **0** (none) through **5** (highest).

If this option is not specified, a default value of 1 is used.

-v   Specify this option to enable verbose mode for the refresh operation. When verbose mode is enabled, detail messages and warning messages are displayed for a successful operation. Detail messages and warning messages are always displayed for a refresh operation that fails, regardless of whether this option is specified.

--help Display the help text for this command and exit.

EXAMPLES

Refresh the remote restart data for partition **remoteRestartPartition**:

refdev -m sys1 -p remoteRestartPartition

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

labelvios, **lslabelvios**

NAME

rmaccfg - remove access control object

SYNOPSIS

rmaccfg -t {**resource** | **resourcerole** | **taskrole**} **-n** *name* [**--force**]
[**--help**]

DESCRIPTION

rmaccfg removes an access control role from the Hardware Management Console (HMC), or it removes inactive managed resource objects assigned to an HMC user.

OPTIONS

-t   The type of access control objects to remove. Valid values are **resource** for inactive managed resource objects, **resourcerole** for a managed resource role, and **taskrole** for a task role.

-n   When removing inactive managed resource objects assigned to an HMC user, use this option to specify the user name of the HMC user from which to remove the inactive objects.

When removing an access control role, use this option to specify the name of the role to remove. Note that the predefined task roles **hmcsuperadmin**, **hmcoperator**, **hmcviewer**, **hmcpe**, and **hmcservicerep** cannot be removed.

If the specified access control role is currently assigned to one or more HMC users, you will be prompted to confirm that you want to remove the role unless the **--force** option is specified.

--force   Specify this option to remove an access control role that is currently assigned to one or more HMC users without confirmation.

--help   Display the help text for this command and exit.

EXAMPLES

Remove the managed resource role **lpar_role**:

rmaccfg -t resourcerole -n lpar_role

Purge all inactive managed resource objects from the user **superuser**:

rmaccfg -t resource -n superuser

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chaccfg, **lsaccfg**, **mkaccfg**, **lshmcusr**

NAME
rmdump - remove a dump

SYNOPSIS
rmdump -f *file* [**--force**] [**--help**]

DESCRIPTION
rmdump removes a managed system dump from the Hardware Management Console (HMC).

OPTIONS
-f The file name of the dump to be removed.

    The **lsdump -h -F name** command can be used to list the file names of the dumps on the HMC.

--force Specify this option to force an in progress dump file to be removed. An in progress dump file should only be removed if the offload of the dump was abnormally terminated and the in progress dump file was not cleaned up. Removing an in progress dump file for a dump that is currently being offloaded will cause the offload process to start over.

--help Display the help text for this command and exit.

EXAMPLES
Remove a system dump from the HMC:

rmdump -f SYSDUMP.1000D6P.00000001.20100806170032.gz

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
lsdump

NAME

      rmfile - remove file

SYNOPSIS

      rmfile -t {**krbkeyfile** | **ldapcacert**} [**--help**]

DESCRIPTION

      rmfile removes a file of the specified type from the Hardware Management Console (HMC).

OPTIONS

      -t   The type of file to remove. Valid values are **krbkeyfile** for the Kerberos service key (keytab) file (**/etc/krb5.keytab**), and **ldapcacert** for the LDAP Certificate Authority (CA) certificate file.

             After the successful completion of this command to remove the Kerberos service key file, the HMC must be rebooted for the change to take effect.

      --help Display the help text for this command and exit.

EXAMPLES

      Remove the Kerberos service key file from the HMC:

      rmfile -t krbkeyfile

      Remove the LDAP CA certificate file from the HMC:

      rmfile -t ldapcacert

ENVIRONMENT

      None

BUGS

      None

AUTHOR

      IBM Austin

SEE ALSO

      getfile

NAME

rmhmcusr - remove Hardware Management Console users

SYNOPSIS

rmhmcusr {**-u** *user-name* |
        -t {**all** | **local** | **kerberos** | **ldap** | **automanage**}}
     [**--help**]

DESCRIPTION

rmhmcusr removes Hardware Management Console (HMC) users.

OPTIONS

-u   The user name of the HMC user to remove. The HMC users **root** and **hscroot** cannot be removed.

        Either this option or the **-t** option must be specified. The **-u** and the **-t** options are mutually exclusive.

-t   The type of HMC users to be removed. Valid values are **all** for all users (except **root**, **hscroot**, and **hscpe**), **local** for all users with an authentication type of local (except **root**, **hscroot**, and **hscpe**), **kerberos** for all users with an authentication type of Kerberos, **ldap** for all users with an authentication type of LDAP, and **automanage** for all users with an authentication type of LDAP auto managed.

        Either this option or the **-u** option must be specified. The **-t** and the **-u** options are mutually exclusive.

--help   Display the help text for this command and exit.

EXAMPLES

Remove the user **tester**:

rmhmcusr -u tester

Remove all users with an authentication type of Kerberos:

rmhmcusr -t kerberos

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chhmcusr, **lshmcusr**, **mkhmcusr**

NAME

rmlock - remove lock

SYNOPSIS

rmlock -e *managed-frame* [**--help**]

DESCRIPTION

rmlock forces a Hardware Management Console (HMC) lock on the *managed-frame* to be released.

OPTIONS

-e The name of the managed frame to unlock. The name may either be the user-defined name for the managed frame, or be in the form *tttt-mmm*ssssssss*, where *tttt* is the type, *mmm* is the model, and *ssssssss* is the serial number of the managed frame. The *tttt-mmm*ssssssss* form must be used if there are multiple managed frames with the same user-defined name.

--help Display the help text for this command and exit.

EXAMPLES

Unlock the managed frame **myFrame**:

rmlock -e myFrame

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

lslock

NAME

rmlparutil - remove utilization data

SYNOPSIS

rmlparutil -m *managed-system* [**--help**]

DESCRIPTION

rmlparutil removes the utilization data collected for a managed system from the Hardware Management Console (HMC).

OPTIONS

-m   The name of the managed system for which collected utilization data is to be removed. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*ssssssss*, where *tttt* is the machine type, *mmm* is the model, and *ssssssss* is the serial number of the managed system. The *tttt-mmm*ssssssss* form must be used if there are multiple managed systems with the same user-defined name, or if the HMC does not currently have a connection to the managed system.

Removing the utilization data for a managed system does not disable the collection of utilization data for that managed system. Use the **chlparutil** command to disable the collection of utilization data.

--help   Display the help text for this command and exit.

EXAMPLES

Remove the utilization data collected for the managed system **mySystem**:

rmlparutil -m mySystem

Remove the utilization data collected for the managed system with the type, model, and serial number **9406-520*98765432**:

rmlparutil -m 9406-520*98765432

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chlparutil, **lslparutil**

NAME

rmprofdata - remove profile data

SYNOPSIS

rmprofdata -m *managed-system* **-f** *file* [**--help**]

DESCRIPTION

rmprofdata removes a profile data backup file for the *managed-system*.

OPTIONS

-m   The name of the managed system for which to remove the profile data backup file. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*ssssssss*, where *tttt* is the machine type, *mmm* is the model, and *ssssssss* is the serial number of the managed system. The *tttt-mmm*ssssssss* form must be used if there are multiple managed systems with the same user-defined name, or if the HMC does not currently have a connection to the managed system.

-f   The name of the profile data backup file to be removed. If *file* is not fully qualified, *file* will be removed from the **/var/hsc/profiles/**/*serial-number* directory on the HMC (*serial-number* is the serial number of the managed system).

To remove profile data from removable media, the media must be present in the removable media device and the device must be mounted with the **mount** command before this command is issued. The **lsmediadev** command can be used to display all of the removable media devices on the HMC.

--help   Display the help text for this command and exit.

EXAMPLES

Remove the profile data backup file called **backup1** (the file will be removed from the **/var/hsc/profiles/3413444** directory on the HMC):

rmprofdata -m 9406-570*3413444 -f backup1

Remove the profile data backup file called **myFile** on a floppy diskette (a floppy diskette must have already been inserted into the diskette drive):

mount /media/floppy

rmprofdata -m mySystem -f /media/floppy/myFile

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

bkprofdata, **lsmediadev**, **rstprofdata**

NAME

   rmpwdpolicy - remove a password policy

SYNOPSIS

   rmpwdpolicy -n *policy-name* [**--help**]

DESCRIPTION

   rmpwdpolicy removes a password policy from the Hardware Management Console (HMC).

   Only user-defined password policies can be removed. The active password policy cannot be removed.

OPTIONS

   -n   The name of the password policy to remove.

   --help Display the help text for this command and exit.

EXAMPLES

   Remove the password policy **xyzPolicy**:

   rmpwdpolicy -n xyzPolicy

ENVIRONMENT

   None

BUGS

   None

AUTHOR

   IBM Austin

SEE ALSO

   chpwdpolicy, **lspwdpolicy**, **mkpwdpolicy**

NAME
rmsyscfg - remove a system resource

SYNOPSIS
rmsyscfg -r {**lpar** | **prof** | **sysprof**} **-m** *managed-system*
[**-n** *resource-name*] [**-p** *partition-name*] [**--id** *partition-ID*]
[**--vioscfg**] [**--vdisk**] [**-v**] [**--help**]

DESCRIPTION
rmsyscfg removes a partition, a partition profile, or a system profile from the *managed-system*.

OPTIONS
-r   The type of system resource to remove. Valid values are **lpar** for a partition, **prof** for a partition profile, and **sysprof** for a system profile.

When a partition is removed, all of the partition profiles that are defined for that partition are also removed.

When a partition profile is removed, any system profiles that contain just that one partition profile are also removed.

-m   The name of the managed system from which the system resource is to be removed. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

-n   The name of the system resource to remove.

To remove a partition, you must either use this option to specify the name of the partition to remove, or use the **--id** option to specify the partition's ID. The **-n** and the **--id** options are mutually exclusive when removing a partition.

To remove a partition profile or a system profile, you must use this option to specify the name of the profile to remove.

-p   The name of the partition which has the partition profile to remove. This option is only valid when removing a partition profile.

To remove a partition profile, you must either use this option to specify the name of the partition which has the partition profile to remove, or use the **--id** option to specify the partition's ID. The **-p** and the **--id** options are mutually exclusive.

--id   The partition's ID.

To remove a partition, you must either use this option to specify the ID of the partition to remove, or use the **-n** option to specify the partition's name. The **--id** and the **-n** options are mutually exclusive when removing a partition.

To remove a partition profile, you must either use this option to specify the ID of the partition that has the profile to remove, or use the **-p** option to specify the partition's name. The **--id** and the **-p** options are mutually exclusive when removing a partition profile.

This option is not valid when removing a system profile.

--vioscfg
When removing a partition, specify this option to remove all virtual I/O server adapters and mappings associated with the partition from the associated Virtual I/O Servers.

This option is only valid when removing a partition.

--vdisk   When removing a partition, specify this option to delete all virtual disks, including logical volumes and shared storage pool logical units, associated with the partition.

This option is only valid when removing a partition.

-v   Specify this option to enable verbose mode for partition remove operations when the **--vioscfg** option is specified. When verbose mode is enabled, detail messages and warning messages are displayed for successful partition remove operations. Detail messages and warning messages are displayed for partition remove operations that fail, regardless of whether this option is specified.

--help   Display the help text for this command and exit.

EXAMPLES

Remove the partition **partition5**:

rmsyscfg -r lpar -m system1 -n partition5

Remove the partition with ID 5:

rmsyscfg -r lpar -m system1 --id 5

Remove the partition **aix1** and all of its associated virtual I/O server adapters and mappings from the associated Virtual I/O Servers, and delete the partition's virtual disks:

rmsyscfg -r lpar -m system1 -n aix1 --vioscfg --vdisk -v

Remove the partition profile **prof1** for partition **lpar3**:

rmsyscfg -r prof -m system1 -n prof1 -p lpar3

Remove the system profile **sysprof1**:

rmsyscfg -r sysprof -m 9406-520*34134441 -n sysprof1

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chsyscfg, **lssyscfg**, **mksyscfg**

NAME
rmsysconn - remove system connection

SYNOPSIS
rmsysconn -o {**remove** | **reset** | **rediscover**}
 {**-m** *managed-system* | **--ip** *IP-address*} [**--help**]

DESCRIPTION
rmsysconn removes or resets a connection from the Hardware Management Console (HMC) to a managed system.

If your HMC is set up as a DHCP server on a private network, you should not use this command to remove HMC connections to managed systems. The remove option of this command is intended for use on a public network only, where the HMC is not set up as a DHCP server. Using the remove option of this command prevents the HMC from managing any system at that IP address, even though that address may still be assigned through DHCP.

If your HMC is set up as a DHCP server on a private network and you do use this command to remove a connection, the HMC places the IP address(es) of the managed system being removed, or places the IP address being removed, in a list of removed IP addresses. Any IP address in that list will not be automatically rediscovered by the HMC. If you want to remove an IP address from that list so that the IP address can be automatically discovered and the HMC can manage a system at that IP address in the future, use the rediscover option of this command. If you want to remove all IP addresses from that list, you can use the **mksysconn -o auto** command.

OPTIONS
-o   The operation to perform. Valid values are **remove**, **reset**, or **rediscover**.

    When **remove** is specified, the HMC disconnects from the specified managed system. If all connections to the managed system are removed, then the managed system is removed from the HMC.

    When **reset** is specified, the HMC disconnects from the specified managed system then attempts to reconnect. The **reset** operation is useful for retrying to establish a connection to a managed system that is in the "No Connection" state.

    When **rediscover** is specified, the specified IP address is removed from the HMC's list of removed IP addresses. This will allow the HMC to automatically reconnect to that IP address when using DHCP.

-m   The name of the managed system to remove or to reset the connection to. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

    If the managed system has a single service processor, the connection to the service processor is removed or reset. When the connection is removed, the managed system is removed from the HMC.

    If the managed system has two service processors, the connections to both service processors for the managed system are removed or reset. When the connections to both service processors for the managed system are removed, the managed system is removed from the HMC. To remove or reset the connection to just one service processor for the managed system, use the **--ip** option.

    Either this option or the **--ip** option is required for a remove or a reset operation. This option is not valid for a rediscover operation.

The **-m** and **--ip** options are mutually exclusive.

--ip   To remove or reset the connection to a managed system with a single service processor, you can use this option to specify the IP address or host name of the service processor for the managed system to remove or to reset the connection to. Alternatively, you can use the **-m** option to specify the name of the managed system to remove or to reset the connection to.

To remove or reset the connection to just one service processor for a managed system with two service processors, you can use this option to specify the IP address or host name of the service processor to remove or to reset the connection to. To remove or reset the connection to both service processors for a managed system, use the **-m** option. Note that a managed system with two service processors will not be removed from the HMC until the connections to both service processors for the managed system are removed.

To allow the HMC to automatically rediscover an IP address when using DHCP, use this option to specify the IP address to be automatically rediscovered.

Either this option or the **-m** option is required for a remove or reset operation. This option is required for a rediscover operation.

The **--ip** and **-m** options are mutually exclusive.

--help   Display the help text for this command and exit.

EXAMPLES

Disconnect from the managed system mySys and remove it from the HMC:

rmsysconn -o remove -m mySys

Reset the connection to the managed system service processor with IP address **9.3.152.145**:

rmsysconn -o reset --ip 9.3.152.145

Allow the IP address **10.0.0.127** to be automatically rediscovered when using DHCP:

rmsysconn -o rediscover --ip 10.0.0.127

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

mksysconn, **lssyscfg**, **lssysconn**

NAME

rmsysplan - remove system plan

SYNOPSIS

rmsysplan -f *file-name* [**--help**]

DESCRIPTION

rmsysplan removes a system plan file from the system plan file directory on the Hardware Management Console (HMC).

OPTIONS

-f   Specifies the name of the file that will be removed. Only files in the system plan file directory on the HMC will be removed.

--help   Display the help text for this command and exit.

EXAMPLES

Remove the system plan file **sysplan.sysplan**:

rmsysplan -f sysplan.sysplan

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

deploysysplan, cpsysplan, lssysplan, mksysplan

NAME
        rmviosbk - remove VIOS backup

SYNOPSIS
        rmviosbk -t {**viosioconfig** | **vios** | **ssp**} **-m** *managed-system*
        {**-p** *VIOS-name* | **--id** *VIOS-ID* | **--uuid** *VIOS-UUID*}
        -f *file* [**--help**]

DESCRIPTION
        rmviosbk removes Virtual I/O Server (VIOS) backup files from the Hardware Management Console
        (HMC).

OPTIONS
        -t   The type of VIOS backup files to remove. Valid values are **viosioconfig** for VIOS I/O configura-
                 tion backup files, **vios** for full VIOS backup files, and **ssp** for Shared Storage Pool configuration
                 backup files.

        -m   The name of the managed system which has the VIOS for which to remove the backup files. The
                 name may either be the user-defined name for the managed system, or be in the form *tttt-*
                 mmm*sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number
                 of the managed system. The *tttt-mmm**sssssss form must be used if there are multiple managed
                 systems with the same user-defined name.

        -p   The name of the VIOS for which to remove the backup files.

                 You can either use this option to specify the name of the VIOS, the **--id** option to specify the ID of
                 the VIOS, or the **--uuid** option to specify the UUID of the VIOS. The **-p**, **--id**, and **--uuid** options
                 are mutually exclusive.

        --id   The ID of the VIOS for which to remove the backup files.

                 You can either use this option to specify the ID of the VIOS, the **-p** option to specify the name of
                 the VIOS, or the **--uuid** option to specify the UUID of the VIOS. The **--id**, **-p**, and **--uuid** options
                 are mutually exclusive.

        --uuid The UUID of the VIOS for which to remove the backup files.

                 You can either use this option to specify the UUID of the VIOS, the **-p** option to specify the name
                 of the VIOS, or the **--id** option to specify the ID of the VIOS. The **--uuid**, **-p**, and **--id** options are
                 mutually exclusive.

        -f   The name of one or more VIOS backup files to remove. Multiple file names must be comma sepa-
                 rated.

        --help Display the help text for this command and exit.

EXAMPLES
        Remove a full VIOS backup file for **vios1**:

        rmviosbk -t vios -m sys1 -p vios1 -f vios1_full_backup

        Remove Shared Storage Pool configuration backup files for the VIOS with ID **1**:

        rmviosbk -t ssp -m sys1 --id 1 -f vios1_ssp1_backup,vios1_ssp2_backup

ENVIRONMENT
        None

BUGS
        None

AUTHOR
>   IBM Austin

SEE ALSO
>   **chviosbk**, **cpviosbk**, **lsviosbk**, **mkviosbk**, **rstviosbk**

NAME
> rmviosimg - remove VIOS installation image

SYNOPSIS
> **rmviosimg -n** *image-names* [**--help**]

DESCRIPTION
> **rmviosimg** removes Virtual I/O Server (VIOS) installation images from the Hardware Management Console (HMC).

OPTIONS
> **-f**   The name of one or more VIOS installation images to remove. Multiple file names must be comma separated.
>
> **--help** Display the help text for this command and exit.

EXAMPLES
> Remove VIOS installation images from the HMC:
>
> **rmviosimg -n vios3.1,vios3.1flash**

ENVIRONMENT
> None

BUGS
> None

AUTHOR
> IBM Austin

SEE ALSO
> **chviosimg**, **cpviosimg**, **installios**, **lsviosimg**

NAME

    rmviosupd - remove VIOS update image

SYNOPSIS

    rmviosupd -n *image-names* [**--help**]

DESCRIPTION

    rmviosupd removes Virtual I/O Server (VIOS) update images from the Hardware Management Console (HMC).

OPTIONS

    -n   The name of one or more VIOS update images to remove. Multiple names must be comma separated.

    --help Display the help text for this command and exit.

EXAMPLES

    Remove VIOS update images from the HMC:

    rmviosupd -n vios3.1.2.10,vios3.1.2.11

ENVIRONMENT

    None

BUGS

    None

AUTHOR

    IBM Austin

SEE ALSO

    chviosupd, **cpviosupd**, **lsviosupd**, **updvios**

NAME
      rmvsn - remove a virtual serial number

SYNOPSIS
      rmvsn -m *managed-system* **-s** *virtual-serial-number* [**--help**]

DESCRIPTION
      rmvsn removes a virtual serial number from the *managed-system*.

      Only a virtual serial number that is not assigned to any partition can be removed. Once a virtual serial number is removed, the only way to get it back is by obtaining and entering a virtual serial number Capacity on Demand activation code.

OPTIONS
      -m   The name of the managed system from which to remove the virtual serial number. The name may either be the user-defined name for the managed system, or be in the form *tttt*-*mmm**sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt*-*mmm**sssssss form must be used if there are multiple managed systems with the same user-defined name.

      -s   The virtual serial number to remove.

      --help Display the help text for this command and exit.

EXAMPLES
      Remove the virtual serial number **1234567**:

      rmvsn -m sys1 -s 1234567

ENVIRONMENT
      None

BUGS
      None

AUTHOR
      IBM Austin

SEE ALSO
      lsvsn, **xfervsn**

NAME

rmvterm - close a virtual terminal session

SYNOPSIS

rmvterm -m *managed-system*
 {**-p** *partition-name* | **--id** *partition-ID*} [**--help**]

DESCRIPTION

rmvterm forces the closure of a virtual terminal session for an AIX, Linux, or virtual I/O server partition.

To close the virtual terminal session normally, enter the ˜. character sequence in the terminal window.

OPTIONS

-m   The name of the managed system which has the partition for which to close the virtual terminal session. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*ssssssss*, where *tttt* is the machine type, *mmm* is the model, and *ssssssss* is the serial number of the managed system. The *tttt-mmm*ssssssss* form must be used if there are multiple managed systems with the same user-defined name.

-p   The name of the partition for which to close the virtual terminal session.

You must either use this option to specify the name of the partition, or use the **--id** option to specify the partition's ID. The **-p** and the **--id** options are mutually exclusive.

--id   The ID of the partition for which to close the virtual terminal session.

You must either use this option to specify the ID of the partition, or use the **-p** option to specify the partition's name. The **--id** and the **-p** options are mutually exclusive.

--help   Display the help text for this command and exit.

EXAMPLES

Close a virtual terminal session for partition **p1**:

rmvterm -m mySystem -p p1

Close a virtual terminal session for the partition with an ID of **1**:

rmvterm -m 9406-570*12345678 --id 1

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

mkvterm

NAME

rnvi - HMC restricted-nvi text editor

SYNOPSIS

rnvi -f *file* [**--help**]

DESCRIPTION

rnvi enables users to edit a text file in a restricted mode. The **rnvi** command invokes the **nvi** command in a **chroot** environment. The **rnvi** command must be issued from the user's home directory and only one file may be specified on the command line. The user may edit a file in a subdirectory located in their home directory by specifying the relative path name. When this command is issued for the first time, a temporary directory, called **.rnvi_tmp**, is created in the user's home directory to store the editor's temporary files. Files are not recoverable from a crashed editing session.

Note: when the editor starts, the message "stderr: No such file or directory" may be displayed. This message can be safely ignored.

OPTIONS

-f   The name of the text file to edit. The file must be located within the user's home directory.

--help   Display the help text for this command and exit.

EXAMPLES

Edit the file named **example.txt** in the user's home directory:

rnvi -f example.txt

Edit the file named **example.txt** in the subdirectory called **myfiles** in the user's home directory:

rnvi -f myfiles/example.txt

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

nvi, **mkdir**, **rm**

NAME
        rrstartlpar - perform a partition remote restart operation

SYNOPSIS
        To perform a partition remote restart operation:
        rrstartlpar -o {**restart** | **validate** | **cancel** | **cleanup** | **recover**}
                -m *managed-system* [**-t** *target-managed-system*]
                [**--ip** *IP-address* [**-u** *user-ID*]]
                {**-p** *partition-name* | **--id** *partition-ID*}
                [**--redundantvios** {**0** | **1** | **2**}] [**--mpio** {**1** | **2**}]
                [**--vlanbridge** {**1** | **2**}]
                [**--redundantsriovadapters** {**1** | **2**}]
                [**--redundantvnicbkdev** {**1** | **2**}] [**--migsriov** {**1** | **2**}]
                [**--sriovlogportcfg** {**1** | **2**}] [**--vniccfg** {**1** | **2**}]
                [**--viosfcportlabel** {**1** | **2**}]
                [**--viosstoragelabel** {**1** | **2**}] [**--viosvniclabel** {**1** | **2**}]
                [**--pmem** {**0** | **1**}]
                [**--retaindev**] [**--usecurrdata**]
                [**--noconnection**] [**--test**] [**--skippoweron**]
                [{**-f** *input-data-file* | **-i** "*input-data*"}]
                [**-w** *wait-time*] [**-d** *detail-level*] [**--force**]
                [**-v**] [**--nodetails**]
                [**--help**]

        To set management console attributes related to partition remote restart operations:
        rrstartlpar -o set -r mc
                {**-f** *input-data-file* | **-i** "*input-data*"}
                [**--help**]

DESCRIPTION
        rrstartlpar performs partition remote restart operations.

        Remote restart operations can be performed for AIX, Linux, or IBM i partitions only.

        A partition can be remotely restarted only when the source managed system is in the Power Off In Progress,
        Power Off, Error, Error - Dump in progress, Initializing, or No Connection state. The destination managed
        system must be in the Operating state.

OPTIONS
        -o   The operation to perform. Valid values are **restart** to validate then remotely restart the partition if
                validation succeeds, **validate** to validate the operation to remotely restart the partition, **cancel** to
                stop the remote restart of the partition, **cleanup** to clean up after the successful remote restart of
                the partition, **recover** to recover from the failed remote restart of the partition, and **set** to set
                attributes related to partition remote restart operations.

                After the successful remote restart of a partition, you should perform a clean up operation on the
                source managed system once the source managed system is in Operating or Standby state.

        -m   The name of the source managed system for the partition remote restart operation. The name may
                either be the user-defined name for the managed system, or be in the form *tttt-mmm**sssssss, where
                tttt is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed sys-
                tem. The *tttt-mmm**sssssss form must be used if there are multiple managed systems with the
                same user-defined name.

        -t   The name of the target, or destination, managed system for the partition remote restart operation.
                The name may either be the user-defined name for the managed system, or be in the form *tttt-*
                mmm*sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number

of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

This option is required for all operations except a clean up operation.

--ip   If the destination managed system is not managed by the same management console that is managing the source managed system, use this option to specify the IP address or host name of the management console that is managing the destination managed system.

SSH must be enabled on both management consoles. Also, you must run the **mkauthkeys** command once to set up SSH key authentication.

This option is valid only for partitions that support simplified remote restart operations. This option is required when remotely restarting partitions, validating partition remote restart operations, or recovering from a failed partition remote restart if the destination managed system is not managed by the same management console that is managing the source managed system. This option is not valid when performing any other operation.

-u   If the destination managed system is not managed by the same management console that is managing the source managed system, use this option to specify the user ID to use on the management console that is managing the destination managed system. If you do not specify the user ID, then the user ID of the user that issues this command will be used.

-p   The name of the partition for which to perform the remote restart operation.

You must either use this option to specify the name of the partition, or use the **--id** option to specify the partition's ID. This option must be used when performing a cancel or recover operation.

The **-p** and the **--id** options are mutually exclusive.

--id   The ID of the partition for which to perform the remote restart operation.

You must either use this option to specify the ID of the partition, or use the **-p** option to specify the partition's name. The **-p** option must be used when performing a cancel or recover operation.

The **--id** and the **-p** options are mutually exclusive.

--redundantvios
When validating or performing the remote restart of a partition using a reserved storage device or a partition that uses shared memory, use this option to specify whether the partition is to be configured to use redundant VIOS partitions on the destination managed system for accessing the reserved storage device or the paging device assigned to the partition.

Valid values are **0** if the partition is to be configured to not use redundant VIOS partitions, **1** if the partition is to be configured to use redundant VIOS partitions, or **2** if the partition is to be configured to use redundant VIOS partitions if possible. If this option is not specified, then the partition will be configured to use the same VIOS redundancy configuration on the destination managed system that the partition is currently using on the source managed system.

This option is only valid when performing a validate or remote restart operation.

--mpio   When validating or remotely restarting a partition, use this option to specify whether the management console is required to maintain an equivalent multipath I/O (MPIO) configuration of each of the partition's virtual SCSI and virtual fibre channel adapters on the destination managed system. Valid values are **1** if the management console is required to maintain an equivalent MPIO configuration, or **2** if the management console is not required to maintain an equivalent MPIO configuration, but should do so if possible. If this option is not specified, then this option defaults to the value **1**.

If this option has a value of **1** and the management console cannot guarantee that an equivalent MPIO configuration of all of the partition's virtual SCSI and virtual fibre channel adapters can be maintained on the destination managed system, then an error will occur and the operation will fail.

This option is only valid when performing a validate or remote restart operation.

--vlanbridge
When validating or remotely restarting a partition, use this option to specify whether each of the partition's virtual ethernet adapters are required to be configured so that they are bridged on the same VLAN to an external network on the destination managed system. Valid values are **1** if virtual ethernet adapters are required to be bridged, or **2** if virtual ethernet adapters are not required to be bridged, but should be bridged if possible. If this option is not specified, then this option defaults to the value **1**.

If this option has a value of **1** and the management console cannot guarantee that the partition's virtual ethernet adapters can be bridged, then an error will occur and the operation will fail.

This option is only valid when performing a validate or remote restart operation.

--redundantsriovadapters
When validating or remotely restarting a partition, use this option to specify whether the management console is required to maintain the SR-IOV adapter redundancy of each of the partition's migratable SR-IOV logical ports and virtual NIC backing devices on the destination managed system. Valid values are **1** if the management console is required to maintain the SR-IOV adapter redundancy, or **2** if the management console is not required to maintain the SR-IOV adapter redundancy, but should do so if possible. If this option is not specified, then this option defaults to the value **2**.

If this option has a value of **1**, the management console must be able to maintain the SR-IOV adapter redundancy of all of the partition's migratable SR-IOV logical ports and virtual NIC backing devices on the destination managed system. For example, if two migratable SR-IOV logical ports or two virtual NIC backing devices are on the same SR-IOV adapter on the source managed system, they must be configured on the same SR-IOV adapter on the destination managed system. If two migratable SR-IOV logical ports or two virtual NIC backing devices are on different SR-IOV adapters on the source managed system, they must be configured on different SR-IOV adapters on the destination managed system. If the management console is not able to do this for all of a partition's migratable SR-IOV logical ports and virtual NIC backing devices, an error will occur and the operation will fail.

This option is only valid when performing a validate or remote restart operation.

--redundantvnicbkdev
When validating or remotely restarting a partition, use this option to specify whether the management console is required to maintain the backing device redundancy of each of the partition's virtual NICs on the destination managed system. Valid values are **1** if the management console is required to maintain the virtual NIC backing device redundancy, or **2** if the management console is not required to maintain the virtual NIC backing device redundancy, but should do so if possible. If this option is not specified, then this option defaults to the value **1**.

If this option has a value of **1**, the management console must be able to map every virtual NIC backing device to a virtual NIC backing device on the destination managed system. In addition, the management console must be able to maintain the VIOS redundancy the backing devices for a virtual NIC provide. For example, if two backing devices for a virtual NIC are hosted by two different VIOSs on the source managed system, then the backing devices for that virtual NIC must be hosted by two different VIOSs on the destination managed system. If the management console is not able to do this for all of the partition's virtual NICs, an error will occur and the operation will

fail.

This option is only valid when performing a validate or remote restart operation.

--migsriov

When validating or remotely restarting a partition, use this option to specify whether the management console is required to recreate each of the partition's migratable SR-IOV logical ports on the destination managed system. Valid values are **1** if the management console is required to recreate the migratable SR-IOV logical ports, or **2** if the management console is not required to recreate the migratable SR-IOV logical ports, but should do so if possible. If this option is not specified, then this option defaults to the value **1**.

If this option has a value of **1** and the management console cannot guarantee that all of the partition's migratable SR-IOV logical ports can be recreated on the destination managed system, then an error will occur and the operation will fail.

This option is only valid when performing a validate or remote restart operation.

--sriovlogportcfg

When validating or remotely restarting a partition, use this option to specify whether the management console is required to maintain the configuration of each of the partition's migratable SR-IOV logical ports on the destination managed system. Valid values are **1** if the management console is required to maintain the migratable SR-IOV logical port configuration, or **2** if the management console is not required to maintain the migratable SR-IOV logical port configuration, but should do so if possible. If this option is not specified, then this option defaults to the value **1**.

Specifying a value of **2** for this option will allow the validation or remote restart operation to succeed even if the management console is not able to maintain each migratable SR-IOV logical port's port VLAN ID, allowed VLAN IDs, allowed MAC addresses or capacity configuration on the destination managed system.

This option is only valid when performing a validate or remote restart operation.

--vniccfg

When validating or remotely restarting a partition, use this option to specify whether the management console is required to maintain the configuration of each of the partition's virtual NICs on the destination managed system. Valid values are **1** if the management console is required to maintain the virtual NIC configuration, or **2** if the management console is not required to maintain the virtual NIC configuration, but should do so if possible. If this option is not specified, then this option defaults to the value **1**.

Specifying a value of **2** for this option will allow the validation or remote restart operation to succeed even if the management console is not able to maintain each virtual NIC's allowed VLAN IDs and maximum capacity configuration on the destination managed system.

This option is only valid when performing a validate or remote restart operation.

--viosfcportlabel

When validating or remotely restarting a partition, use this option to specify whether VIOS Fibre Channel (FC) port labels are to be used when determining mappings of virtual FC adapters when specific virtual FC adapter mappings are not specified. Valid values are **1** if VIOS FC port labels are required to be used, or **2** if VIOS FC port labels are to be used if possible. If this option is not specified, it defaults to the value of the VIOS FC port label override option for the managed system (see the **labelvios** and **lslabelvios** commands).

If VIOS FC port labels are required to be used and the management console cannot find a destination VIOS to host each partition's virtual FC adapter which has an FC port label that matches the

FC port label on the source VIOS hosting the adapter, an error will occur and the operation will fail.

This option is only valid when performing a validate or remote restart operation.

--viosstoragelabel
When validating or remotely restarting a partition, use this option to specify whether VIOS virtual Fibre Channel (FC) and virtual SCSI group labels are to be used when determining mappings of virtual FC and virtual SCSI adapters when specific virtual FC or virtual SCSI adapter mappings are not specified. Valid values are **1** if VIOS virtual FC and virtual SCSI group labels are required to be used, or **2** if VIOS virtual FC and virtual SCSI group labels are to be used if possible. If this option is not specified, it defaults to the value of the VIOS storage group label override option for the managed system (see the **labelvios** and **lslabelvios** commands).

If VIOS storage group labels are required to be used and the management console cannot find a destination VIOS to host each partition's virtual FC or virtual SCSI adapter which has a label that matches a label of the source VIOS hosting the adapter, an error will occur and the operation will fail.

This option is only valid when performing a validate or remote restart operation.

--viosvniclabel
When validating or remotely restarting a partition, use this option to specify whether VIOS virtual NIC group labels are to be used when determining mappings of virtual NICs when specific virtual NIC mappings are not specified. Valid values are **1** if VIOS virtual NIC group labels are required to be used, or **2** if VIOS virtual NIC group labels are to be used if possible. If this option is not specified, it defaults to the value of the VIOS virtual NIC group label override option for the managed system (see the **labelvios** and **lslabelvios** commands).

If VIOS virtual NIC group labels are required to be used and the management console cannot find a destination VIOS to host each partition's virtual NIC which has a label that matches a label of the source VIOS hosting the virtual NIC, an error will occur and the operation will fail.

This option is only valid when performing a validate or remote restart operation.

--pmem
When validating or remotely restarting a partition, use this option to specify whether the partition's persistent memory volumes are to be configured on the destination managed system.

Valid values are **0** if the persistent memory volumes are not to be configured, or **1** if the persistent memory volumes are to be configured. If this option is not specified, it defaults to **1**.

This option is only valid when performing a validate or remote restart operation.

--retaindev
When performing a clean up operation after a successful remote restart of a partition using a reserved storage device, specify this option to prevent the reserved storage device assigned to the partition from being removed from the reserved storage device pool on the source managed system.

This option is only valid when performing a clean up operation.

--usecurrdata
Specify this option to allow a partition to be remotely restarted when the partition configuration data saved in the remote restart data for the partition does not match the current configuration of the partition. The partition will be remotely restarted with the saved configuration data.

This option must be used to remotely restart a partition when the remote restart state of the partition is Local Storage Update Failed, Forced Source Side Restart, or Stale Data.

This option is only valid when performing a remote restart operation.

--noconnection

Specify this option to allow a partition to be remotely restarted when the source managed system is in the No Connection state.

This option is only valid when performing a validate or simplified remote restart operation.

--test   Specify this option to allow a shutdown partition to be remotely restarted when the source managed system is in the Operating or Standby state. This function is provided for testing purposes.

This option is only valid when performing a simplified remote restart operation.

--skippoweron

Specify this option to prevent a partition from being started during the remote restart operation.

The partition will be completely configured on the destination managed system during the remote restart operation. After the remote restart operation completes, the partition will be in the Not Activated state and will have to be manually started. To start the partition, either a current configuration activation or a profile activation can be performed.

This option is only valid when performing a simplified remote restart operation.

-f   The name of the file containing the input data for this command. The input data consists of attribute name/value pairs, which are in comma separated value (CSV) format.

The format of the input data is as follows:

attribute-name=value,attribute-name=value,...

Note that certain attributes accept a comma separated list of values, as follows:

"*attribute-name=value,value,*...**",**...

When a list of values is specified, the attribute name/value pair must be enclosed in double quotes. Depending on the shell being used, nested double quote characters may need to be preceded by an escape character, which is usually a '\' character.

Attributes that can be specified when validating or remotely restarting a partition:
  virtual_fc_mappings
      Comma separated list of virtual fibre channel adapter
      mappings, with each mapping having the following
      format:

      virtual-slot-number/vios-lpar-name/vios-lpar-ID/
      [*vios-virtual-slot-number*]/[*vios-fc-port-name*]

      All four '/' characters must be present. Optional
      values may be omitted. Optional values are
      vios-lpar-name or *vios-lpar-ID* (one of those
      values is required, but not both), *vios-virtual-slot-
      number*, and *vios-fc-port-name*.

      For example:

4//1/14/fcs0 specifies a mapping of the virtual fibre channel client adapter with slot number **4** to the virtual fibre channel server adapter with slot number **14** in the VIOS partition with ID **1** on the destination managed system. In addition, the mapping specifies to use physical fibre channel port **fcs0**.

virtual_scsi_mappings
Comma separated list of virtual SCSI adapter mappings, with each mapping having the following format:

virtual-slot-number/*vios-lpar-name*/*vios-lpar-ID*/
[*vios-virtual-slot-number*]

All 3 '/' characters must be present. Optional values may be omitted. Optional values are *vios-lpar-name* or *vios-lpar-ID* (one of those values is required, but not both), and *vios-virtual-slot-number*.

For example:
12/vios1//16 specifies a mapping of the virtual SCSI client adapter with slot number **12** to the virtual SCSI server adapter with slot number **16** in the VIOS partition **vios1** on the destination managed system.

vnic_mappings
Comma separated list of virtual NIC mappings, with each mapping having the following format:

virtual-slot-number/**ded**/[*vios-lpar-name*]/
[*vios-lpar-ID*]/[*sriov-adapter-ID*]/
[*sriov-physical-port-ID*]/[*capacity*][/
[*source-sriov-adapter-ID*]/
[*source-sriov-physical-port-ID*][/
[*max-capacity*]]]

The first 6 '/' characters must be present. The next 2 '/' characters are optional, but both must be present if *source-sriov-adapter-ID*, *source-sriov-physical-port-ID*, or *max-capacity* is specified. The last '/' character is optional, but must be present if *max-capacity* is specified.

Optional values may be omitted. Optional values are *vios-lpar-name* or *vios-lpar-ID* (one of those values is required, but not both), *sriov-adapter-ID* and *sriov-physical-port-ID* (if one of those values is specified they both must be specified), *capacity*, and *max-capacity*. In addition, if the virtual NIC has only one backing device, *source-sriov-adapter-ID* and *source-sriov-physical-port-ID* are also optional.

For example:
5/ded/vios1//1/2/4.5/1/0 specifies a mapping of the backing device on physical port **0** of SR-IOV adapter

    1 for the virtual NIC in slot number **5** to a
virtual NIC on the destination managed system with a
backing device hosted by VIOS partition **vios1**. In
addition, the mapping specifies to use physical port
2 of SR-IOV adapter **1** and a logical port capacity
of **4.5**% for the backing device.

sriov_logical_port_mappings
    Comma separated list of migratable SR-IOV logical port
mappings, with each mapping having the following
format:

    sriov-logical-port-ID/[*sriov-adapter-ID*]/
[*sriov-physical-port-ID*]/[*capacity*]/[*max-capacity*]

    Optional values may be omitted. Optional values are
sriov-adapter-ID and *sriov-physical-port-ID* (if one
of those values is specified they both must be
specified), *capacity*, and *max-capacity*.

    For example:
27004001/1/2/10/20 specifies a mapping of the SR-IOV
logical port with ID **27004001** to physical port **2**
of SR-IOV adapter **1** on the destination managed system.
In addition, the mapping specifies to configure a
logical port capacity of **10**% and a maximum capacity
of **20**%.

vswitch_mappings
    Comma separated list of virtual switch mappings, with
each mapping having the following format:

    vlan-ID/*source-vswitch-name*/*dest-vswitch-name*

    For example:
10/srcSwitch/dstSwitch specifies a mapping of VLAN
ID **10** on virtual switch **srcSwitch** to the virtual
switch **dstSwitch** on the destination managed system.

pmem_volumes
    Comma separated list of the names of the persistent
memory volumes to create on the destination managed
system. The format is:

    source-pmem-volume-name/*dest-pmem-volume-name*

    For example:
vol0/vol3 specifies to create **vol3** on the
destination managed system for **vol0** on the source
managed system.

shared_proc_pool_name | **shared_proc_pool_id**
desired_procs
    If you want to start the partition with a different
number of dedicated processors or virtual processors
on the destination managed system than what the
partition was assigned on the source managed system,
specify the new number or specify **min**. If you

specify **min**, the partition will be started with the
minimum number of dedicated processors or virtual
processors the partition was assigned on the source
managed system.

desired_proc_units

If you want to start the partition with a different
number of shared processing units on the destination
managed system than what the partition was assigned on
the source managed system, specify the new number with
up to 2 decimal places or specify **min**. If you specify
min, the partition will be started with the minimum
number of shared processing units the partition was
assigned on the source managed system.

desired_mem

If you want to start the partition with a different
amount of memory on the destination managed system
than what the partition was assigned on the source
managed system, specify the new number in megabytes or
or specify **min**. If you specify **min**, the partition
will be started with the minimum amount of memory the
partition was assigned on the source managed system.

Attributes that can be specified for a set operation:

auto_cleanup_enabled

Automatic clean up of remotely restarted partitions
can be performed on the source managed system once the
source managed system is in Operating state and all of
the VIOS partitions that were hosting client virtual
SCSI and virtual fibre channel adapters for the
remotely restarted partitions are running with RMC
connections to the HMC.
Valid values are:
0 - this HMC is not to perform automatic clean up
1 - this HMC is to perform automatic clean up
    (default)

Input data for this command can be specified with this option or the **-i** option. The **-f** and the **-i**
options are mutually exclusive.

Input data can be specified when remotely restarting partitions, validating partition remote restart
operations, or performing a set operation. This option is not valid when performing any other
operation.

-i   This option allows you to enter input data on the command line, instead of using a file. Data
entered on the command line must follow the same format as data in a file, and must be enclosed
in double quotes.

Input data for this command can be specified with this option or the **-f** option. The **-i** and the **-f**
options are mutually exclusive.

Input data can be specified when remotely restarting partitions, validating partition remote restart
operations, or performing a set operation. This option is not valid when performing any other
operation.

-r   The type of resource for which to set attributes related to partition remote restart operations. Valid
values are **mc** for management console.

-w   The maximum time, in minutes, to wait for operating system commands issued by the manage-ment console to the partition being remotely restarted to complete. If an operating system com-mand does not complete within the time specified, the partition remote restart operation will be stopped.

     wait-time must be a whole number. If *wait-time* is 0, the partition remote restart operation will not be timed out.

     If this option is not specified, a default value of 3 minutes is used.

     This option is only valid when performing a validate or remote restart operation.

-d   The level of detail requested from operating system commands issued by the management console to all partitions participating in the remote restart operation. Valid values are **1** (lowest) through **5** (highest).

     If this option is not specified, a default value of 1 is used.

     This option is only valid when performing a validate or remote restart operation.

--force When performing a clean up or recover operation, specify this option to force the operation to pro-ceed when errors are encountered.

     When performing a simplified remote restart operation for a suspended partition, you must specify this option. A suspended partition will be restarted (resumed) on the destination managed system therefore it will not remain suspended.

-v   Specify this option to enable verbose mode for the partition remote restart operation. When ver-bose mode is enabled, detail messages and warning messages are displayed for a successful parti-tion remote restart operation. Detail messages and warning messages are displayed for partition remote restart operation that fails, regardless of whether this option is specified.

     When the **--nodetails** option is also specified, no detail messages are displayed.

--nodetails
     Specify this option to suppress the display of all detail messages.

--help Display the help text for this command and exit.

EXIT STATUS
   This command has the following return codes:

0   Success

93   This value is returned when remote restart validation was successful, with the exception of virtual fibre channel adapter and storage validation which could not be performed because the partition was active on the source system.

   Any other value means the command failed.

EXAMPLES
   Validate the operation to remotely restart partition **mylpar** from managed system **system1** on managed sys-tem **system2**:

   rrstartlpar -o validate -m system1 -t system2 -p mylpar

   Remotely restart the partition with ID **5** from managed system **system1** on managed system **system2**:

   rrstartlpar -o restart -m system1 -t system2 --id 5

Remotely restart the partition **lp1** from managed system **system1** on managed system **system2**:

rrstartlpar -o restart -m system1 -t system2 -p lp1
 -i ""virtual_fc_mappings=4/vios1//14/fcs0,5/vios2//14/fcs1""

Remotely restart the partition **lp1** with its minimum memory from managed system **system1** on managed system **system2**:

rrstartlpar -o restart -m system1 -t system2 -p lp1
 -i "desired_mem=min"

Remotely restart the partition **lp1** from managed system **system1** on managed system **system2** when **system1** is in No Connection state:

rrstartlpar -o restart -m system1 -t system2 -p lp1 --noconnection

Test the remote restart of shutdown partition **aixlpar** from managed system **system1** on managed system **system2**:

rrstartlpar -o restart -m system1 -t system2 -p aixlpar --test
 -i ""vnic_mappings=5/ded/vios1//1/2/10/1/0/100,
 5/ded/vios2//2/2/10/2/0/100""

Remotely restart the partition **p1** from managed system **system1** on managed system **system2** but do not actually start the partition on **system2**:

rrstartlpar -o restart -m system1 -t system2 -p p1 --skippoweron
 -i ""vswitch_mappings=10/srcSw1/dstSw1,20/srcSw2/dstSw2""

Clean up on the source managed system after the successful remote restart of the partition with ID **5**:

rrstartlpar -o cleanup -m system1 --id 5

Stop the remote restart of partition **mylpar**:

rrstartlpar -o cancel -m system1 -t system2 -p mylpar

Recover the failed remote restart of partition **mylpar**:

rrstartlpar -o recover -m system1 -t system2 -p mylpar

Remotely restart the partition **aix1** from managed system **system1** to managed system **system2**, when **system2** is managed by the HMC with the host name **hmc2**:

mkauthkeys --ip hmc2 -u hmc2user

rrstartlpar -o restart -m system1 -t system2 -p aix1 --ip hmc2
 -u hmc2user

Disable automatic clean up for this HMC:

rrstartlpar -o set -r mc -i "auto_cleanup_enabled=0"

ENVIRONMENT

   None

BUGS

   None

AUTHOR

   IBM Austin

SEE ALSO

   labelvios, **lslabelvios**, **lsrrstartlpar, lssyscfg**, **mkauthkeys**

NAME
    rstconsdata - restore console data

SYNOPSIS
    rstconsdata -r {**usb** | **ftp** | **sftp** | **nfs**}
     [**-h** *host-name*] [**-u** *user-ID*] [**--passwd** *password*] [**-k** *SSH-private-key*]
     [**-l** *mount-location*] [**-o** "*mount-command-options*"]
     [**-d** *remote-directory*] [**-f** *file*] [**--help**]

DESCRIPTION
    rstconsdata restores critical Hardware Management Console (HMC) data that was created using the back up critical HMC data task.

OPTIONS
    -r   The media or remote location that contains the backup data to be restored. Valid values are **usb** for a USB flash memory device, **ftp** for a remote FTP site, **sftp** for a remote secure FTP (SFTP) site, or **nfs** for an NFS file system.

    -h   The host name or IP address of the remote server.

              This option is required when restoring data from a remote FTP site, SFTP site, or NFS file system. Otherwise, this option is not valid.

    -u   The user ID to use to log in to the remote FTP or SFTP site.

              This option is required when restoring data from a remote FTP or SFTP site. Otherwise, this option is not valid.

    --passwd
              The password to use to log in to the remote FTP or SFTP site.

              If this option is omitted and the data is being restored from a remote FTP site, you will be prompted to enter the password. If both this option and the **-k** option are omitted and the data is being restored from a remote SFTP site, you will be prompted to enter the password. The **--passwd** and **-k** options are mutually exclusive.

              This option is only valid when restoring data from a remote FTP or SFTP site.

    -k   The name of the file that contains the SSH private key. If the file name is not fully qualified, the file must exist in the user's home directory on the HMC.

              Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen** command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so when you run the command on the HMC, you must specify both the directory and the file name for the private key. If you generate a key with a passphrase, you will be prompted to enter the passphrase when you run any HMC command that uses the key.

              If both this option and the **--passwd** option are omitted and the data is being restored from a remote SFTP site, you will be prompted to enter the password. The **-k** and **--passwd** options are mutually exclusive.

              This option is only valid when restoring the data from a remote SFTP site.

    -l   The mount location defined on the NFS server that contains the backup data to be restored.

              This option is required when restoring data from an NFS file system. Otherwise, this option is not valid.

    -o   Options to be passed to the **mount** command used to mount the NFS file system that contains the backup data to be restored. The options must be enclosed in double quotes.

The HMC supports NFS versions 3 and 4, and this command uses version 3 by default. To use version 4, include the option **vers=4**.

This option is only valid when restoring data from an NFS file system.

-d   The name of the directory on the remote server that contains the backup data to be restored. If this option is not specified when restoring data from a remote FTP or SFTP site, it will default to the user's home directory. If this option is not specified when restoring data from an NFS file system, it will default to the *mount-location* on the NFS server.

This option is only valid when restoring data from a remote FTP site, SFTP site, or NFS file system.

-f   The name of the backup data file to restore.

This option is only valid when restoring data from a remote FTP site, SFTP site, or NFS file system.

--help   Display the help text for this command and exit.

EXAMPLES
Restore critical HMC data from a USB flash memory device:

rstconsdata -r usb

Restore critical HMC data from a remote FTP site:

rstconsdata -r ftp -h ftpserver -u ftpuser --passwd ftppassword

Restore critical HMC data from a remote SFTP site using SSH keys for authentication:

rstconsdata -r sftp -h sftpserver -u sftpuser -k /home/user/keys/id_rsa

Restore critical HMC data from an NFS file system using NFS version 4:

rstconsdata -r nfs -h 9.3.145.52 -l /home/hmc/backups -o "vers=4"

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
bkconsdata

NAME
rsthwres - restore hardware resources

SYNOPSIS
To restore memory or processing resources:

rsthwres -r {**mem** | **proc**} **-m** *managed-system*
        [{**-p** *partition-name* | **--id** *partition-ID*}]

To restore physical I/O slots:

rsthwres -r io -m *managed-system*
        [{**-p** *partition-name* | **--id** *partition-ID*}]
        [**-l** *slot-DRC-index*]

To restore Single Root I/O Virtualization (SR-IOV) resources:

rsthwres -r sriov -m *managed-system*
        [{**-p** *partition-name* | **--id** *partition-ID*}]
        [**-l** *adapter-ID*] [**--logport** *logical-port-ID*]

DESCRIPTION
rsthwres restores the hardware resource configuration of partitions in the *managed-system*. This operation may need to be performed after a dynamic logical partitioning (DLPAR) operation fails.

OPTIONS
-r   The type of hardware resources to restore. Valid values are **mem** for memory, **proc** for processing resources, **io** for physical I/O slots, and **sriov** for Single Root I/O Virtualization (SR-IOV) resources.

-m   The name of the managed system which has the partitions for which to restore the hardware resources. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

-p   The name of the partition for which to restore the hardware resources.

To restore hardware resources for a single partition, you must either use this option to specify the name of the partition, or use the **--id** option to specify the partition's ID. Otherwise, hardware resources for all partitions in the *managed-system* will be restored.

The **-p** and the **--id** options are mutually exclusive.

--id   The ID of the partition for which to restore the hardware resources.

To restore hardware resources for a single partition, you must either use this option to specify the ID of the partition, or use the **-p** option to specify the partition's name. Otherwise, hardware resources for all partitions in the *managed-system* will be restored.

The **--id** and the **-p** options are mutually exclusive.

-l   When restoring physical I/O slots, specify the DRC index of the physical I/O slot to restore. If this option is omitted and a partition is specified with the **-p** or **--id** option, then all physical I/O slots assigned to the specified partition will be restored. If this option is omitted and a partition is not specified, then all physical I/O slots in the *managed-system* will be restored.

When restoring SR-IOV resources, specify the adapter ID of the SR-IOV adapter to restore. If this option is omitted, then all the SR-IOV resources for the specified partitions on the managed system will be included in the restore.

--logport

   The ID of the SR-IOV logical port to restore.

   When restoring SR-IOV resources, if this option is omitted, then all the SR-IOV logical ports for the specified SR-IOV adapters and partitions will be included in the restore.

--help   Display the help text for this command and exit.

EXAMPLES

Restore the physical I/O slots for all partitions:

rsthwres -r io -m mySystem

Restore the physical I/O slot with DRC index **21010003**:

rsthwres -r io -m 9406-570*12345678 -l 21010003

Restore memory resources for partition **p1**:

rsthwres -r mem -m 9406-570*12345678 -p p1

Restore processing resources for the partition with ID **1**:

rsthwres -r proc -m mySystem --id 1

Restore all SR-IOV resources in the managed system:

rsthwres -r sriov -m mySystem

Restore all SR-IOV resources for partition **p1**:

rsthwres -r sriov -m mySystem -p p1

Restore the SR-IOV logical port with ID **27004001** of the SR-IOV adapter with adapter ID **1**:

rsthwres -r sriov -m mySystem -l 1 --logport 27004001

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

chhwres, **lshwres**

NAME
    rstprofdata - restore profile data

SYNOPSIS
    rstprofdata -m *managed-system* **-l** *restore-type* [**-f** *file*]
     [**--forcekeystore**] [**--help**]

DESCRIPTION
    rstprofdata restores profile data for the *managed-system* from a backup file. **rstprofdata** can also be used
    to initialize the profile data for the *managed-system*.

    The **bkprofdata** command can be used to back up profile data for the *managed-system*.

OPTIONS
    -m   The name of the managed system for which to restore or initialize profile data. The name may
              either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where
              tttt is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed sys-
              tem. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the
              same user-defined name.

    -l   The type of restore to perform. Valid values are:
                  1 - full restore from the backup file
                  2 - merge the current profile data and profile
                    data from the backup file, giving priority
                    to the backup data. If the profile data
                    conflicts, the backup data is restored
                    over the current data.
                  3 - merge the current profile data and profile
                    data from the backup file, giving priority
                    to the current data. If the profile data
                    conflicts, the backup data is not restored
                    over the current data.
                  4 - initialize the profile data. All
                    partitions, partition profiles, and system
                    profiles for the managed system will be
                    deleted.

    -f   The name of the backup file that contains the profile data to be restored. If *file* is not fully quali-
              fied, *file* must exist in the
               /var/hsc/profiles/*serial-number* directory on the HMC (*serial-number* is the serial number of the
              managed system).

              To restore the profile data from removable media, the media must be present in the removable
              media device and the device must be mounted with the **mount** command before this command is
              issued. The **lsmediadev** command can be used to display all of the removable media devices on
              the HMC.

              This option is required for all restore types except **4** (initialize).

    --forcekeystore
              Specify this option to ignore errors when restoring the partition keystore data. Any errors that
              occur will be displayed as warning messages.

    --help   Display the help text for this command and exit.

EXAMPLES
    Do a full restore of the profile data from the file **myFile** on a USB flash memory device (a USB flash mem-
    ory device must already be connected to the HMC):

lsmediadev (to obtain mount points)

mount /media/sdb1

rstprofdata -m mySystem -l 1 -f /media/sdb1/myFile

Restore the profile data from the file **backup1**, and give priority to the current profile data (the file **backup1** exists in the **/var/hsc/profiles/3413444** directory on the HMC):

rstprofdata -m 9406-570*3413444 -l 3 -f backup1

Initialize the profile data:

rstprofdata -m 9406-570*3413444 -l 4

ENVIRONMENT
        None
BUGS
        None
AUTHOR
        IBM Austin
SEE ALSO
        bkprofdata, **lsmediadev**

NAME
    rstupgdata - restore upgrade data

SYNOPSIS
    rstupgdata -r {**dvd** | **usb** | **ftp** | **sftp**}
     [**-h** *host-name* **-u** *user-ID* [**--passwd** *password*] [**-k** *SSH-private-key*]]
     [**-d** *remote-directory*] [**--migrate**] [**--help**]

DESCRIPTION
    rstupgdata copies the current partition profile data, Hardware Management Console (HMC) user data, and
    HMC configuration data previously saved by the HMC Save Upgrade Data task onto the HMC hard drive.
    After running this command, the HMC must be restarted to recover the data.

    Note: Time on the HMC must be set after the data has been recovered.

    This command in conjunction with the **saveupgdata** command can be used to facilitate migration from one
    HMC to another. Both commands must be run with the **--migrate** option.

OPTIONS
    -r   If **dvd** is specified, the upgrade data will be read from DVD-RAM media.

              If **usb** is specified, the upgrade data will be read from a USB data storage device.

              If **ftp** is specified, the upgrade data will be retrieved from an FTP server.

              If **sftp** is specified, the upgrade data will be retrieved from a secure FTP (SFTP) server.

              DVD-RAM media or a USB data storage device must be present and the device must be mounted
              with the **mount** command before running this command. The **lsmediadev** command can be used
              to display the mount points for the removable media devices on the HMC.

    -h   The host name or IP address of the remote server from where the upgrade data will be retrieved.

              This option is required when the upgrade data is to be retrieved from a remote server. Otherwise,
              this option is not valid.

    -u   The user ID to use to log in to the remote server.

              This option is required when the upgrade data is to be retrieved from a remote server. Otherwise,
              this option is not valid.

    --passwd
              The password to use to log in to the remote server.

              If this option is omitted and the upgrade data is to be retrieved from a remote FTP server, you will
              be prompted to enter the password. If both this option and the **-k** option are omitted and the
              upgrade data is to be retrieved from a remote SFTP server, you will be prompted to enter the pass-
              word. The **--passwd** and **-k** options are mutually exclusive.

              This option is only valid when the upgrade data is to be retrieved from a remote server.

    -k   The name of the file that contains the SSH private key. If the file name is not fully qualified, the
              file must exist in the user's home directory on the HMC.

              Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen**
              command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so
              when you run the command on the HMC, you must specify both the directory and the file name
              for the private key. If you generate a key with a passphrase, you will be prompted to enter the
              passphrase when you run any HMC command that uses the key.

If both this option and the **--passwd** option are omitted and the upgrade data is to be retrieved from a remote SFTP server, you will be prompted to enter the password. The **-k** and **--passwd** options are mutually exclusive.

This option is only valid when the upgrade data is to be retrieved from a remote SFTP server.

-d The directory on the remote server from where the upgrade data will be retrieved.

This option is only valid when the upgrade data is to be retrieved from a remote server.

--migrate
  Specify this option to include data for migrating another HMC to this HMC.

--help Display the help text for this command and exit.

EXAMPLES
  Restore upgrade data from DVD-RAM to the HMC hard drive:

  lsmediadev (to obtain mount points)

  mount /media/cdrom

  rstupgdata -r dvd

  Restore upgrade data from a USB flash drive to the HMC hard drive:

  lsmediadev (to obtain mount points)

  mount /media/sdb1

  rstupgdata -r usb

  Restore upgrade data from a remote FTP server to the HMC hard drive (you will be prompted to enter the user's password):

  rstupgdata -r ftp -h ftpserver -u ftpuser
  -d /home/ftpuser/saveupgdata

  Restore upgrade data from a remote SFTP server to the HMC hard drive and use SSH keys for authentication:

  rstupgdata -r sftp -h 9.3.123.25 -u sftpuser
  -k /home/hmcuser/keys/id_rsa -d /home/sftpuser/saveupgdata

  Restore upgrade data used to migrate from an x86 HMC to a Power HMC:

  rstupgdata -r usb --migrate

ENVIRONMENT
  None

BUGS
  None

AUTHOR
  IBM Austin

SEE ALSO
lsmediadev, **saveupgdata**

NAME
rstviosbk - restore VIOS backup

SYNOPSIS
rstviosbk -t {**viosioconfig** | **ssp**} **-m** *managed-system*
{**-p** *VIOS-name* | **--id** *VIOS-ID* | **--uuid** *VIOS-UUID*}
-f *file* [**-r**] [**--help**]

DESCRIPTION
rstviosbk restores a Virtual I/O Server (VIOS) backup.

OPTIONS
-t　　　　The type of VIOS backup to restore. Valid values are **viosioconfig** for a VIOS I/O configuration backup, and **ssp** for a Shared Storage Pool configuration backup.

-m　　　　The name of the managed system which has the VIOS on which to restore the backup. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

-p　　　　The name of the VIOS on which to restore the backup.

　　　　You can either use this option to specify the name of the VIOS, the **--id** option to specify the ID of the VIOS, or the **--uuid** option to specify the UUID of the VIOS. The **-p**, **--id**, and **--uuid** options are mutually exclusive.

--id　　　The ID of the VIOS on which to restore the backup.

　　　　You can either use this option to specify the ID of the VIOS, the **-p** option to specify the name of the VIOS, or the **--uuid** option to specify the UUID of the VIOS. The **--id**, **-p**, and **--uuid** options are mutually exclusive.

--uuid　　The UUID of the VIOS on which to restore the backup.

　　　　You can either use this option to specify the UUID of the VIOS, the **-p** option to specify the name of the VIOS, or the **--id** option to specify the ID of the VIOS. The **--uuid**, **-p**, and **--id** options are mutually exclusive.

-f　　　　The name of the VIOS backup file to restore.

-r　　　　Specify this option to restart the VIOS if required.

　　　　A restart of the VIOS will be required if the restore of the backup fails. If this option is specifed, the HMC will restart the VIOS then try to restore the backup file again. If this option is not specified, you must restart the VIOS before attempting to restore the backup file again.

--help　　Display the help text for this command and exit.

EXAMPLES
Restore a VIOS I/O configuration backup for **vios1**:

rstviosbk -t viosioconfig -m sys1 -p vios1 -f vios1_io_backup

Restore a Shared Storage Pool configuration backup for the VIOS with ID **1** and restart the VIOS if required:

rstviosbk -t ssp -m sys1 --id 1 -f vios1_ssp1_backup -r

ENVIRONMENT
None

BUGS

      None

AUTHOR

      IBM Austin

SEE ALSO

      chviosbk, **cpviosbk**, **lsviosbk**, **mkviosbk**, **rmviosbk**

NAME
runilmtscan - run IBM License Metric Tool scan

SYNOPSIS
runilmtscan -r {**ftp** | **sftp** | **nfs** | **none**}
 [**-h** *host-name*] [**-u** *user-ID*] [**--passwd** *password*] [**-k** *SSH-private-key*]
 [**-l** *mount-location*] [**-d** *remote-directory*] [**-o "***mount-command-options***"**]
 [**--help**]

DESCRIPTION
runilmtscan runs an IBM License Metric Tool (ILMT) scan on the Hardware Management Console (HMC) virtual appliance to collect hardware and software inventory data. The scan results are then uploaded to the ILMT server.

OPTIONS
-r   The type of ILMT server where the scan results will be written. Valid values are **ftp** for a remote FTP server, **sftp** for a remote secure FTP (SFTP) server, **nfs** for an NFS file system, or **none**. The **none** option is used to remove the ILMT scan task concurrency lock allowing this command to be re-executed immediately.

-h   The host name or IP address of the remote ILMT server.

           This option is required when uploading the scan results to a remote FTP server, SFTP server, or NFS file system. Otherwise, this option is not valid.

-u   The user ID to use to log in to the remote FTP or SFTP server.

           This option is required when uploading the scan results to a remote FTP or SFTP server. Otherwise, this option is not valid.

--passwd
           The password to use to log in to the remote FTP or SFTP server.

           If this option is omitted and the scan results are being uploaded to a remote FTP server, you will be prompted to enter the password. If both this option and the **-k** option are omitted and the scan results are being uploaded to a remote SFTP server, you will be prompted to enter the password. The **--passwd** and **-k** options are mutually exclusive.

           This option is only valid when uploading the scan results to a remote FTP or SFTP server.

-k   The name of the file that contains the SSH private key. If the file name is not fully qualified, the file must exist in the user's home directory on the HMC.

           Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen** command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so when you run the command on the HMC, you must specify both the directory and the file name for the private key. If you generate a key with a passphrase, you will be prompted to enter the passphrase when you run any HMC command that uses the key.

           If both this option and the **--passwd** option are omitted and the scan results are being uploaded to a remote SFTP server, you will be prompted to enter the password. The **-k** and **--passwd** options are mutually exclusive.

           This option is only valid when uploading the scan results to a remote SFTP server.

-l   The mount location defined on the NFS server where the scan results will be written.

           This option is required when uploading the scan results to an NFS file system. Otherwise, this option is not valid.

-d   The directory on the remote server to which to write the scan results. If this option is not specified when uploading the scan results to a remote FTP or SFTP server, the scan results will be written to the user's home directory. If this option is not specified when uploading the scan results to an NFS file system, the scan results will be written to the *mount-location* on the NFS server.

This option is only valid when uploading the scan results to a remote FTP server, SFTP server, or NFS file system.

-o   Options to be passed to the **mount** command used to mount the NFS file system where the scan results will be written. The options must be enclosed in double quotes.

The HMC supports NFS versions 3 and 4, and this command uses version 3 by default. To use version 4, include the option **vers=4**.

This option is only valid when uploading the scan results to an NFS file system.

--help   Display the help text for this command and exit.

EXAMPLES

Run an ILMT scan on a virtual HMC and upload the scan results to a remote FTP server:

runilmtscan -r ftp -h ftpilmtserver -u ftpuser --passwd ftppassword

Run an ILMT scan on a virtual HMC and upload the scan results to a remote SFTP server using SSH keys for authentication:

**runilmtscan -r sftp -h sftpilmtserver -u sftpuser
 -k /home/hmcuser/keys/id_rsa**

Run an ILMT scan on a virtual HMC and upload the scan results to an NFS file system using NFS version 4:

runilmtscan -r nfs -h 9.3.145.52 -l /home/vhmc/scans -o "vers=4"

ENVIRONMENT

None

BUGS

None

AUTHOR

IBM Austin

SEE ALSO

lsilmtscan

NAME
    saveupgdata - save upgrade data

SYNOPSIS
    saveupgdata -r {**disk** | **diskusb** | **diskftp** | **disksftp**}
    [**-h** *host-name* **-u** *user-ID* [**--passwd** *password*] [**-k** *SSH-private-key*]]
    [**-d** *remote-directory*] [**--migrate**] [**-i** *additional-data*] [**--force**]
    [**--help**]

DESCRIPTION
    saveupgdata saves the current partition profile data, Hardware Management Console (HMC) user data,
    and HMC configuration data in a portion of the HMC hard drive that the HMC upgrade process cannot
    erase. The HMC automatically recovers the data after the upgrade process completes.

    Optionally this command can also save the upgrade data to a USB data storage device or on a remote FTP
    or secure FTP (SFTP) server. The **rstupgdata** command can be used to restore the saved upgrade data
    manually after upgrading the HMC.

    This command should be run immediately prior to performing an HMC upgrade. If the HMC is restarted
    without performing an upgrade after running this command, this command must be run again.

    This command in conjunction with the **rstupgdata** command can be used to facilitate migration from one
    HMC to another. Both commands must be run with the **--migrate** option.

OPTIONS
    -r   If **disk** is specified, upgrade data will only be saved on the HMC hard drive.

              If **diskusb** is specified, in addition to storing the upgrade data on the HMC hard drive, this com-
              mand will copy the same upgrade data onto a USB data storage device. The USB device must be
              inserted into a USB port on the HMC before running this command.

              If **diskftp** is specified, in addition to storing the upgrade data on the HMC hard drive, this com-
              mand will copy the same upgrade data to an FTP server.

              If **disksftp** is specified, in addition to storing the upgrade data on the HMC hard drive, this com-
              mand will copy the same upgrade data to a secure FTP server.

    -h   The host name or IP address of the remote server where the upgrade data will be saved.

              This option is required when the upgrade data is to be saved on a remote server. Otherwise, this
              option is not valid.

    -u   The user ID to use to log in to the remote server.

              This option is required when the upgrade data is to be saved on a remote server. Otherwise, this
              option is not valid.

    --passwd
              The password to use to log in to the remote server.

              If this option is omitted and the upgrade data is to be saved on a remote FTP server, you will be
              prompted to enter the password. If both this option and the **-k** option are omitted and the upgrade
              data is to be saved on a remote SFTP server, you will be prompted to enter the password. The
              --passwd and **-k** options are mutually exclusive.

              This option is only valid when the upgrade data is to be saved on a remote server.

    -k   The name of the file that contains the SSH private key. If the file name is not fully qualified, the
              file must exist in the user's home directory on the HMC.

Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen** command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so when you run the command on the HMC, you must specify both the directory and the file name for the private key. If you generate a key with a passphrase, you will be prompted to enter the passphrase when you run any HMC command that uses the key.

If both this option and the **--passwd** option are omitted and the upgrade data is to be saved on a remote SFTP server, you will be prompted to enter the password. The **-k** and **--passwd** options are mutually exclusive.

This option is only valid when the upgrade data is to be saved on a remote SFTP server.

-d The directory on the remote server where the upgrade data is to be saved.

This option is only valid when the upgrade data is to be saved on a remote server.

--migrate
Specify this option to include data for migrating this HMC to another HMC.

-i Additional data to be included in the migration data. Valid values are **netcfg** to include network configuration data, and **perfmon** to include performance monitoring data.

--force Specify this option to force migration data to be included for an HMC managing a Power enterprise pool.

--help Display the help text for this command and exit.

EXAMPLES
Save upgrade data to the HMC hard drive:

saveupgdata -r disk

Save upgrade data to the HMC hard drive and to a USB flash drive:

saveupgdata -r diskusb

Save upgrade data to the HMC hard drive and to a remote FTP server (you will be prompted to enter the user's password):

saveupgdata -r diskftp -h ftpserver -u ftpuser
 -d /home/ftpuser/saveupgdata

Save upgrade data to the HMC hard drive and to a remote SFTP server and use SSH keys for authentication:

saveupgdata -r disksftp -h 9.3.123.25 -u sftpuser
 -k /home/hmcuser/keys/id_rsa -d /home/sftpuser/saveupgdata

Save upgrade data, including network configuration data, to be used to migrate from an x86 HMC to a Power HMC:

saveupgdata -r diskusb --migrate -i netcfg

ENVIRONMENT
None

BUGS
None

AUTHOR
        IBM Austin
SEE ALSO
        rstupgdata

NAME
>   sendfile - transfer a file from the HMC to a remote system

SYNOPSIS
>   **sendfile -f** *file* **-h** *host-name* **-u** *user-ID*
>   [**--passwd** *password*] -d *remote-directory*
>   [**-n** *remote-file-name*] [**-s**] [**-S**] [**-k** *key-file*] [**--help**]

DESCRIPTION
>   **sendfile** transfers a file from the Hardware Management Console (HMC) to a remote system using File
>   Transfer Protocol (FTP), secure FTP (SFTP), or Secure Copy Protocol (SCP).

OPTIONS
>   **-f**   The name of the file to transfer.
>
>   **-h**   The host name or IP address of the remote system to which to transfer the file.
>
>   **-u**   The user ID to use to log in to the remote system.
>
>   **--passwd**
>   The password to use to log in to the remote system. If this option is omitted, you will be prompted
>   to enter the password.
>
>   **-d**   The directory on the remote system to which to transfer the file.
>
>   **-n**   The file name to give the file on the remote system. If this option is omitted, the file is given the
>   same name that it has on the HMC.
>
>   **-s**   Use SCP to transfer the file.
>
>   **-S**   Use secure FTP to transfer the file. SSH will be used to transfer the file, therefore the remote sys-
>   tem must have SSH installed and running.
>
>   **-k**   The name of the identity key file for public key authentication. This is the key file generated by
>   the **ssh-keygen** command. If the matching public key file resides on the remote system and the
>   passphrase is empty, you will not be required to enter a password with this command.
>
>   This option is only valid when using SCP or secure FTP to transfer the file.
>
>   **--help**   Display the help text for this command and exit.

EXAMPLES
>   Transfer a file using normal FTP. The file will be written to **/home/myid/myfile** on the remote system:
>
>   **sendfile -f /home/joe/myfile -h myhost@company.com -d /home/myid**
>   **-u myid**
>
>   Transfer a file using secure FTP. The file will be written to **/tmp/xfile** on the remote system:
>
>   **sendfile -f /home/joe/myfile -h myhost@company.com -d /tmp -n xfile**
>   **-u myid -S**
>
>   Generate a public key on the HMC then copy to the remote system for sendfile to use public key authentica-
>   tion with SCP:
>
>   **ssh-keygen -t rsa -f mykey**
>
>   **scp mykey me@myhost:/home/me/.ssh/authorized_keys2**
>
>   **sendfile -f /home/me/myfile -h myhost@company.com -d /tmp -s -k mykey**

ENVIRONMENT
        None
BUGS
        None
AUTHOR
        IBM Austin

NAME
    sendnotif - send notification

SYNOPSIS
    sendnotif [**-a** *email-addresses*] **-s** *subject* **-b** *body* [**--help**]

DESCRIPTION
    sendnotif sends a custom email notification.

    An SMTP server must be configured for event notification email before running this command.

OPTIONS
    -a   One or more email addresses to which to send the notification. Multiple email addresses must be
              comma separated.

              If this option is omitted, the notification will be sent to all of the email addresses configured for
              event notification.

    -s   The email subject.

    -b   The email body.

    --help   Display the help text for this command and exit.

EXAMPLES
    Send a notification to a list of emails:

    **sendnotif -a name1@company.com,name2@company.com -s Server issue
     -b Server sys1 is back up and operational.**

ENVIRONMENT
    None

BUGS
    None

AUTHOR
    IBM Austin

SEE ALSO
    chsacfg, **lssacfg**

NAME
      startdump - start dump

SYNOPSIS
      startdump -m *managed-system* **-t** {**sp** | **sys** | **resource**} [**-s** {**p** | **s**}]
       [**-r** *resource-selector*] [**--help**]

DESCRIPTION
      startdump initiates a dump on the *managed-system*.

      The **lsdump** command can be used to determine when the dump has completed and is available. The **get-dump** command can then be used to offload the dump from the *managed-system* to the Hardware Management Console (HMC).

OPTIONS
      -m   The name of the managed system on which to initiate the dump. The name may either be the user-defined name for the managed system, or be in the form *tttt*-*mmm**sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt*-*mmm**sssssss form must be used if there are multiple managed systems with the same user-defined name.

      -t   The dump to initiate. Valid values are **sp** for a service processor dump, **sys** for a system dump, or **resource** for a resource dump.

              When a system dump is started, the *managed-system* will be halted. When the dump has completed, the *managed-system* will be restarted. Service processor dumps and resource dumps do not cause any disruption to the managed system.

      -s   When initiating a service processor dump, use this option to specify the service processor on which to initiate the dump. Valid values are **p** for the primary service processor and **s** for the secondary service processor. If this option is not specified, the service processor dump will be initiated on the primary service processor.

      -r   When initiating a resource dump, use this option to specify the resource selector that you have obtained from your hardware service representative. If this option is not specified, no filter is applied to the resource dump. An unfiltered resource dump can take an extended period of time to complete and may prevent other dumps from processing.

              This option is only valid when initiating a resource dump.

      --help Display the help text for this command and exit.

EXAMPLES
      Initiate a system dump on the managed system **9406-570*12345678** (confirmation will be required):

      startdump -m 9406-570*12345678 -t sys

      Initiate a dump of the primary service processor on the managed system **sys1**:

      startdump -m sys1 -t sp -s p

ENVIRONMENT
      None

BUGS
      None

AUTHOR
      IBM Austin

SEE ALSO
     getdump, **lsdump**

NAME

      termtask - terminate a task

SYNOPSIS

      termtask -r {**webui** | **ssh**} **-s** *session* **-t** *task* [**--help**]

DESCRIPTION

      termtask terminates a user's task that is running on the Hardware Management Console (HMC).

      The **lslogon** command can be used to list information about the users logged onto the HMC and the tasks they are running.

OPTIONS

      -r   The type of task to terminate. Valid values are **webui** for a Web user interface task, or **ssh** for an SSH task.

      -s   When terminating a Web user interface task, use this option to specify the session ID of the user that is running the task to terminate.

                  When terminating an SSH task, use this option to specify the TTY ID of the user that is running the task to terminate.

      -t   When terminating a Web user interface task, use this option to specify the task ID of the task to terminate.

                  When terminating an SSH task, use this option to specify the process ID (PID) of the task to terminate.

                  You can specify **all** with this option to terminate all tasks that the user associated with the *session* is running, and then log off the user.

      --help   Display the help text for this command and exit.

EXAMPLES

      Terminate all of the HMC Web user interface tasks that the user associated with session **4** is running, and log off the user:

      termtask -r webui -s 4 -t all

      Terminate the task with process ID **11644** that the user remotely logged into the HMC via the SSH session **pts/5** is running:

      termtask -r ssh -s pts/5 -t 11644

ENVIRONMENT

      None

BUGS

      None

AUTHOR

      IBM Austin

SEE ALSO

      lslogon

NAME
      updhmc - update the Hardware Management Console

SYNOPSIS
      updhmc -t {**disk** | **dvd** | **ftp** | **sftp** | **nfs** | **usb** | **ibmwebsite**}
       [**-h** *host-name*] [**-u** *user-ID*] [**--passwd** *password*] [**-k** *SSH-private-key*]
       [**-l** *mount-location*] [**-o** *mount-command-options*]
       [**-f** *file*] [**--ptf** *PTF-number*] [**-r**] [**-c**] [**-n** *device-name*] [**--help**]

DESCRIPTION
      updhmc updates the Hardware Management Console (HMC) by installing a corrective service package.

OPTIONS
      -t   The type of location which contains the corrective service ISO image. Valid values are **disk** for
                the HMC hard disk, **dvd** for a DVD drive, **ftp** for an FTP site, **sftp** for a secure FTP (SFTP) site,
                nfs for an NFS file system, **usb** for a USB data storage device, or **ibmwebsite** for the IBM Fix
                Central website.

                To install a corrective service package located on a USB data storage device, the device must be
                connected to the HMC and must be mounted with the **mount** command before this command is
                issued. The **lsmediadev** command can be used to display the mount point for the USB device.

                To install a corrective service package located on a virtual media device, specify **usb** with this
                option for the Power HMC CR2, otherwise specify **dvd** with this option.

      -h   The host name or IP address of the remote server where the corrective service ISO image is
                located.

                This option is required when the ISO image is located on a remote FTP, SFTP, or NFS server.
                Otherwise, this option is not valid.

      -u   The user ID to use to log in to the remote FTP or SFTP server.

                This option is required when the ISO image is located on a remote FTP or SFTP server. Other-
                wise, this option is not valid.

      --passwd
                The password to use to log in to the remote FTP or SFTP server.

                If this option is omitted and the corrective service ISO image is located on a remote FTP server,
                you will be prompted to enter the password. If both this option and the **-k** option are omitted and
                the corrective service ISO image is located on a remote SFTP server, you will be prompted to
                enter the password. The **--passwd** and **-k** options are mutually exclusive.

                This option is only valid when the ISO image is located on a remote FTP or SFTP server.

      -k   The name of the file that contains the SSH private key. If the file name is not fully qualified, the
                file must exist in the user's home directory on the HMC.

                Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen**
                command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so
                when you run the command on the HMC, you must specify both the directory and the file name
                for the private key. If you generate a key with a passphrase, you will be prompted to enter the
                passphrase when you run any HMC command that uses the key.

                If both this option and the **--passwd** option are omitted and the corrective service ISO image is
                located on a remote SFTP server, you will be prompted to enter the password. The **-k** and
                --passwd options are mutually exclusive.

This option is only valid when the ISO image is located on a remote SFTP server.

-l   The mount location defined on the NFS server where the corrective service ISO image is located.

This option is required when the ISO image is located on a remote NFS server. Otherwise, this option is not valid.

-o   The options to be passed to the **mount** command used to mount the NFS file system where the corrective service ISO image is located.

This command uses NFS version 4 by default.

This option is only valid when the ISO image is located on a remote NFS server.

-f   The name of the corrective service ISO image file.

This option is required when the ISO image is located on the HMC hard disk, a remote FTP, SFTP, or NFS server, or on a USB data storage device. Otherwise, this option is not valid.

--ptf   The number of the PTF to install.

This option is required when the ISO image is located on the IBM Fix Central website. Otherwise, this option is not valid.

-r   Specify this option to restart the HMC after applying the corrective service package.

-c   Specify this option to remove the corrective service ISO image file from the HMC hard disk after applying the corrective service package.

This option is only valid when the ISO image is located on the HMC hard disk.

-n   The name of the virtual media device where the corrective service ISO image is located. The **lsmediadev** command can be used to display the device name of a virtual media device.

This option is only valid when **-t dvd** or **-t usb** is specified and the corrective service package is located on a virtual media device.

--help   Display the help text for this command and exit.

EXIT STATUS
This command has the following return codes:

0   Success

1   Command failed

2   An HMC restart is required but the **-r** option was not specified

4   An additional ISO image or media is required

EXAMPLES
Install the corrective service package located on a DVD in the local DVD drive then reboot the HMC:

updhmc -t dvd -r

Install the corrective service package located on virtual media on any HMC except the Power HMC CR2:

lsmediadev (to obtain the virtual media device name)

updhmc -t dvd -n /dev/sr1

Install the corrective service package located on virtual media on the Power HMC CR2:

lsmediadev (to obtain the virtual media device name)

updhmc -t usb -n /dev/sdb

Install a corrective service package located on an FTP server (you will be prompted to enter the user's password):

updhmc -t ftp -h ftpServer -u user1 -f /tmp/Update1.iso

Install a corrective service package located on an SFTP server and use SSH keys for authentication:

updhmc -t sftp -h sftpServer -u user1 -k /home/hmcuser/keys/id_rsa
 -f /tmp/Update1.iso

Install a corrective service package located in an NFS file system:

updhmc -t nfs -h 9.3.121.61 -l /hmc/images -f 830/update.iso

Install a corrective service package located on a USB data storage device (the USB device must already be connected to the HMC):

lsmediadev (to obtain mount points)

mount /media/sdb1

updhmc -t usb -f /media/sdb1/update2.iso

Install PTF **MF70120** from the IBM Fix Central website:

updhmc -t ibmwebsite --ptf MF70120

ENVIRONMENT
None

BUGS
None

AUTHOR
IBM Austin

SEE ALSO
lsmediadev, **lsupdhmc**

NAME

        updlic - update Licensed Internal Code (LIC)

SYNOPSIS

        To update OpenPower managed systems:

            updlic -m *managed-system* **-t** {**bmc** | **pnor** | **bmcpnor**}

                -r {**ibmwebsite** | **ftp** | **sftp** | **dvd** | **disk** | **mountpoint** |
                  usb}

                -l *filename* [**-h** *host-name*] [**-u** *user-ID*]

                [**--passwd** *password*] [**-d** *directory*] [**-v**]

        To retrieve, install, and activate LIC updates:

            updlic -o a -m *managed-system* [**-t** {**sys** | **io** | **all**}]

                -r {**ibmwebsite** | **ftp** | **sftp** | **dvd** | **disk** | **mountpoint** |
                  usb}

                -l {**latest** | **latestconcurrent** | *sss* | *release_level*}

                [**-h** *host-name*] [**-u** *user-ID*]

                [**--passwd** *password*] [**-d** *directory*]

                [**--nopreaccept**] [**-q**] [**-v**]

        To retrieve and install, but not activate LIC updates:

            updlic -o i -m *managed-system* [**-t** {**sys** | **io** | **all**}]

                -r {**ibmwebsite** | **ftp** | **sftp** | **dvd** | **disk** | **mountpoint** |
                  usb}

                -l {**latest** | **latestconcurrent** | *sss* | *release_level*}

                [**-h** *host-name*] [**-u** *user-ID*]

                [**--passwd** *password*] [**-d** *directory*] [**-q**] [**-v**]

        To remove the most recently installed LIC updates and activate the previously accepted level:

            updlic -o r -m *managed-system* [**-t sys**] [**-q**] [**-v**]

        To change a managed system's LIC update control to Hardware Management Console (HMC):

            updlic -o h -m *managed-system* [**-v**]

        To change a managed system's LIC update control to Operating System:

            updlic -o o -m *managed-system* [**-v**]

        To disruptively activate LIC updates:

            updlic -o d -m *managed-system* [**-t sys**] [**-q**] [**-v**]

        To accept currently activated LIC updates:

            updlic -o c -m *managed-system* [**-t sys**] [**-v**]

        To reject installed LIC updates:

            updlic -o j -m *managed-system* [**-t sys**] [**-v**]

        To upgrade Licensed Internal Code to a new release:

            updlic -o u -m *managed-system* [**-t sys**]

                -r {**ibmwebsite** | **ftp** | **sftp** | **dvd** | **disk** | **mountpoint** |
                  usb}

                [**-l** {**latest** | *release_level*}]

                [**-h** *host-name*] [**-u** *user-ID*]

                [**--passwd** *password*] [**-d** *directory*]

                [**-q**] [**-v**]

To check system readiness:
  updlic -o k -m *managed-system* [**-v**]

To synchronize LIC:
  updlic -o s -m *managed-system* [**-t sys**] [**-v**]

To reboot the secondary service processor:
  updlic -o b -m *managed-system* [**-v**]

To perform hypervisor and partition firmware activation:
  updlic -o v -m *managed-system* [**-v**]

To activate Single Root I/O Virtualization (SR-IOV) adapter firmware updates:
  updlic -o f -m *managed-system* **-t sriov**
    --subtype {**adapterdriver** | **adapterdriver,adapter**}
    -s *SRIOV-adapter-ID* [**-v**]

To purge firmware update files from the HMC hard disk repository:
  updlic -o p --ecnumber *EC-number*

DESCRIPTION
  updlic updates Licensed Internal Code (LIC) on the *managed-system*.

OPTIONS
  -o   The operation to perform. Valid values are **a**, **i**, **r**, **h**, **o**, **d**, **c**, **j**, **u**, **k**, **s**, **b**, **v**, **f** and **p**.

      Use the **a** operation to retrieve, install, and activate LIC updates. Previously activated updates will
      be automatically accepted unless the **--nopreaccept** option is specified.

      Use the **i** operation to retrieve and install, but not activate, LIC updates.

      Use the **r** operation to remove the most recently installed LIC updates and activate the previously
      accepted level. This option is not valid for an Enterprise BMC-based managed system.

      Use the **h** operation to change LIC update control to HMC. This option is not valid for an Enter-
      prise BMC-based managed system or an OpenPower managed system.

      Use the **o** operation to change LIC update control to Operating System. This option is not valid
      for an Enterprise BMC-based managed system or an OpenPower managed system.

      Use the **d** operation to disruptively activate LIC updates.

      Use the **c** operation to accept currently activated LIC updates (copy T to P). This option is not
      valid for an Enterprise BMC-based managed system.

      Use the **j** operation to reject installed LIC updates (copy P to T). This option is not valid for an
      Enterprise BMC-based managed system.

      Use the **u** operation to upgrade Licensed Internal Code to a new release.

      Use the **k** operation to check system readiness for LIC operations.

      Use the **s** operation to synchronize LIC on redundant components. LIC will be synchronized from
      the primary Service Processor to the secondary Service Processor.

      Use the **b** operation to reboot the secondary service processor. This option is not valid for an

OpenPower managed system.

Use the **v** operation to perform hypervisor and partition firmware activation. Managed system LIC is not activated by this option. This option is not valid for an OpenPower managed system.

Use the **f** operation to activate the firmware updates for an SR-IOV adapter. The SR-IOV adapter must be configured in shared mode. The updates that are activated are the updates that were installed with managed system LIC updates.

Use the **p** operation to purge firmware update files from the HMC hard disk repository.

-m   The name of the managed system on which to update LIC. The name may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the same user-defined name.

-t   The type of LIC updates for which to perform the operation. Valid values are **sys** for managed system LIC updates only, **io** for I/O LIC updates only, **all** for managed system and I/O LIC updates, **sriov** for SR-IOV adapter updates, **bmc** for Baseboard Management Controller (BMC) firmware updates only, **pnor** for PNOR firmware updates only, or **bmcpnor** for both BMC and PNOR firmware updates.

The **bmc**, **pnor**, and **bmcpnor** values are valid for OpenPower managed systems only. No other values are valid for OpenPower managed systems.

This option is required for OpenPower managed systems. If this option is omitted for other types of managed systems, it will default to **sys**.

--subtype
       The type of SR-IOV adapter updates to activate. Valid values are **adapterdriver** for adapter driver firmware updates only, or **adapterdriver,adapter** for adapter driver firmware updates and adapter firmware updates.

-s   The adapter ID of the SR-IOV adapter to update.

One or more SR-IOV adapter IDs can be specified. Multiple adapter IDs must be comma separated. The adapters are updated sequentially.

A temporary I/O outage occurs for several minutes for each SR-IOV adapter while it is updated. No progress messages are displayed while an adapter is updated, but a message is displayed when the update of each adapter completes if **-v** is specified.

-l   The LIC level. The only valid value for OpenPower managed systems is *filename*. Valid values for other types of managed systems are **latest**, **latestconcurrent**, *sss*, or *release_level*.

This option is required for OpenPower managed systems. For other types of managed systems this option is required for **a** and **i** operations, and it is optional for **u** operations; if omitted it will default to **latest**. This option is not valid otherwise.

Specify the name of the update file for OpenPower managed system updates. When updating both BMC and PNOR firmware at the same time, specify the name of the BMC update file, followed by a comma, followed by the name of the PNOR update file.

Specify **latest** for the latest LIC updates, even if disruptive.

Specify **latestconcurrent** for the latest concurrent LIC updates.

Specify *sss* for a specific level of managed system LIC updates, even if disruptive. *sss* is the three character identifier of the specific level.

Specify *release_level* for a specific release and level of managed system LIC updates, even if disruptive. *release_level* is the release name followed by an underscore character followed by the three character identifier of the specific level.

-r   The repository from which to retrieve the LIC updates. Valid values are **ibmwebsite** for the IBM service website, **ftp** for a remote FTP site, **sftp** for a remote secure FTP (SFTP) site, **dvd** for the DVD drive on the HMC, **disk** for the internal hard disk drive on the HMC, **mountpoint** for the specified mount point on the internal hard disk drive on the HMC, or **usb** for a USB flash memory device.

This option is required for **a**, **i**, and **u** operations. This option is not valid otherwise.

-h   The host name or IP address of the remote FTP or SFTP server.

This option is required when retrieving LIC updates from a remote FTP or SFTP site. This option is not valid otherwise.

-u   The user ID to use to log in to the remote FTP or SFTP site.

This option is required when retrieving LIC updates from a remote FTP or SFTP site. This option is not valid otherwise.

--passwd

The password to use to log in to the remote FTP or SFTP site.

If this option is omitted when retrieving LIC updates from a remote FTP site, you will be prompted to enter the password. If both this option and the **-k** option are omitted when retrieving LIC updates from a remote SFTP site, you will be prompted to enter the password. The **--passwd** and **-k** options are mutually exclusive.

This option is only valid when retrieving LIC updates from a remote FTP or SFTP site.

-k   The name of the file that contains the SSH private key. If the file name is not fully qualified, the file must exist in the user's home directory on the HMC.

Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen** command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so when you run the command on the HMC, you must specify both the directory and the file name for the private key. If you generate a key with a passphrase, you will be prompted to enter the passphrase when you run any HMC command that uses the key.

If both this option and the **--passwd** option are omitted when retrieving LIC updates from a remote SFTP site, you will be prompted to enter the password. The **-k** and **--passwd** options are mutually exclusive.

This option is only valid when retrieving LIC updates from a remote SFTP site.

-d   The directory to use on the remote FTP or SFTP site, or the mount point location on the internal HMC hard disk drive. If this option is not specified for FTP or SFTP, the **/opt/sfp/data/updates** directory will be used.

This option is only valid when retrieving LIC updates from a mount point or a remote FTP or SFTP site.

-q   Use this option to query the concurrency status of the specified update. The update is not performed when this option is specified.

This option allows you to determine if the specified update is disruptive. If so, you can shut down operating systems or configure I/O devices offline prior to performing the specified update.

See the **EXIT STATUS** section for a description of the return codes returned.

--ecnumber

Specify **all** to purge all firmware update files in the HMC hard disk repository.

For BMC and PNOR firmware update files, specify the name of the file to purge in the HMC hard disk repository, **bmc** to purge all BMC firmware update files, or **pnor** to purge all PNOR firmware update files.

For all other types of firmware update files, specify the engineering change (EC) number associated with the firmware update files to purge from the HMC hard disk repository. To display the EC numbers associated with the firmware update files in the HMC hard disk repository, run the **lslic -c** command. Instead of the EC number, you can specify *pppprrr* to purge all firmware update files for the specified platform *pppp* and release *rrr*, or specify *pppprrr_lll* to purge all firmware update files for the specified platform *pppp*, release *rrr*, and level *lll*.

--nopreaccept

Specify this option if you do not want the previously activated LIC updates to be automatically accepted prior to starting the current operation. If the previously activated LIC updates were previously accepted or you are installing downlevel LIC updates, this option will have no effect.

-v   Specify this option to enable verbose mode for the operation. When verbose mode is enabled, progress messages are displayed. Note that some operations may not have any progress messages.

--help Display the help text for this command and exit.

EXIT STATUS

When the **-q** option is used with **-m**, one of the following return codes is returned:
- **0** - no updates are available
- **1** - all updates are concurrent
- **2** - managed system updates are concurrent, I/O updates are disruptive
- **3** - managed system updates are disruptive, I/O updates are concurrent
- **4** - all updates are disruptive

Any other return code value indicates that an error occurred.

When the **-q** option is not used, one of the following return codes is returned:
- **0** - success
- **8** - failed readiness check, found open serviceable events
- **9** - failed readiness check, no related serviceable events found
- **10** - no updates are available
- **12** - failure during update process
- **15** - failed entitlement check, update access key on managed system is older than release date of firmware

Any other return code value indicates that an error occurred.

EXAMPLES

To update the BMC and PNOR firmware on an OpenPower managed system:

updlic -m 8001-12C*1234567 -t bmcpnor -r mountpoint -d /tmp
-l SMT_P8_121.bin,P8_IBM_prod_20180218.pnor -v

To retrieve and install specific managed system LIC levels from a remote FTP server:

updlic -m mysystem -o i -t sys -l 022 -r ftp -h ftphost -u ftpuser
--passwd userpw -d /data/updates

To retrieve, install, and activate the latest available managed system LIC updates from a remote SFTP server using SSH keys for authentication:

updlic -m system1 -o a -t sys -l latest -r sftp -h sftpServer
-u sftpuser1 -k /home/hmcuser1/keys/id_rsa

To retrieve, install and activate specific managed system LIC levels from the IBM service website:

updlic -m mysystem -o a -t sys -l 01EH330_100 -r ibmwebsite

To remove the most recently installed managed system LIC levels and activate the previous levels:

updlic -m 9406-570*101234A -o r -t sys

To query whether the latest LIC updates from the IBM service website are concurrent or disruptive:

updlic -m 9406-570*101234A -o a -t all -l latest -r ibmwebsite -q

To change LIC update control to HMC:

updlic -m mysystem -o h

To change LIC update control to Operating System:

updlic -m mysystem -o o

To disruptively activate LIC updates:

updlic -m mysystem -o d

To accept the currently activated LIC updates:

updlic -m mysystem -o c

To reject installed LIC updates:

updlic -m mysystem -o j

To check system readiness on a managed system:

updlic -m mysystem -o k

To activate the adapter driver firmware and adapter firmware updates for the SR-IOV adapter with adapter ID **1**:

updlic -m mysystem -o f -t sriov --subtype adapterdriver,adapter -s 1

To activate only the adapter driver firmware updates for the SR-IOV adapters with adapter IDs **1** and **2**:

updlic -m mysystem -o f -t sriov --subtype adapterdriver -s 1,2

To purge all firmware update files from the HMC hard disk repository for the **01AM** platform and the **780** release:

updlic -o p --ecnumber 01AM780

ENVIRONMENT
    None

BUGS
    None

AUTHOR
    IBM Austin

SEE ALSO
    lslic

NAME

      updpmh - update a Problem Management Hardware (PMH) report

SYNOPSIS

      updpmh -p *PMH-number* **-c** *comment* [**--help**]

DESCRIPTION

      updpmh adds a comment to an IBM hardware support Problem Management Hardware (PMH) report.

OPTIONS

      -p   The PMH number of the PMH to update. Only a PMH that is associated with a serviceable event on this Hardware Management Console can be updated.

      -c   The comment to add to the PMH.

      --help   Display the help text for this command and exit.

EXAMPLES

      Add a comment to PMH **12345,111,222**:

      updpmh -p 12345,111,222 -c "Repair completed"

ENVIRONMENT

      None

BUGS

      None

AUTHOR

      IBM Austin

SEE ALSO

      lssvcevents

NAME
>   updvios - update VIOS

SYNOPSIS
>   **updvios -r** {**disk** | **nfs** | **sftp** | **usb** | **ibmwebsite**} **-m** *managed-system*
>   {**-p** *VIOS-name* | **--id** *VIOS-ID*} [**-n** *image-name*] [**-f** *files*]
>   [**-h** *host-name*] [**-u** *user-ID*] [**--passwd** *password*] [**-k** *SSH-private-key*]
>   [**-d** *directory*] [**-l** *mount-location*] [**--options** "*mount-command-options*"]
>   [**--device** *device-name*] [**--restart**] [**--save**] [**--help**]

DESCRIPTION
>   **updvios** updates a Virtual I/O Server (VIOS).

OPTIONS
>   **-r**   The repository that contains the VIOS update image. Valid values are **disk** for the Hardware Man-
>   agement Console (HMC) hard disk, **nfs** for an NFS file system, **sftp** for a secure FTP (SFTP)
>   server, **usb** for a USB data storage device, and **ibmwebsite** for the IBM Fix Central website.
>
>   **-m**   The name of the managed system which has the VIOS to update. The name may either be the
>   user-defined name for the managed system, or be in the form *tttt-mmm**sssssss, where *tttt* is the
>   machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The
>   *tttt-mmm**sssssss form must be used if there are multiple managed systems with the same user-
>   defined name.
>
>   **-p**   The name of the VIOS to update.
>
>   You must either use this option to specify the name of the VIOS or use the **--id** option to specify
>   the ID of the VIOS. The **-p** and **--id** options are mutually exclusive.
>
>   **--id**   The ID of the VIOS to update.
>
>   You must either use this option to specify the ID of the VIOS or use the **-p** option to specify the
>   name of the VIOS. The **--id** and **-p** options are mutually exclusive.
>
>   **-n**   The name of the VIOS update image.
>
>   When the VIOS update image is on the HMC hard disk or the IBM Fix Central website, this
>   option is required to specify the name of the image to use for the update.
>
>   When the VIOS update image is on a remote server or a USB data storage device and the **--save**
>   option is specified, this option is required to specify the name used to save the image to the HMC
>   hard disk.
>
>   **-f**   When the VIOS update image is on a remote server, use this option to specify the names of the
>   files in the update image if all of the files in the directory are not part of the update image. Multi-
>   ple file names must be comma separated. If this option is omitted, all files in the directory will be
>   used for the update.
>
>   If the directory contains more than one ISO file, this option must be specified with the name of
>   only one ISO file.
>
>   This option is only valid when the VIOS update image is on a remote server.
>
>   **-h**   The host name or IP address of the remote server.
>
>   **-u**   The user ID to use to log in to the remote SFTP server.
>
>   This option is required when the VIOS update image is on a remote SFTP server. Otherwise, this
>   option is not valid.

--passwd
>   The password to use to log in to the remote SFTP server.
>
>   If both this option and the **-k** option are omitted when the VIOS update image is on a remote SFTP server, you will be prompted to enter the password. The **--passwd** and **-k** options are mutually exclusive.

-k   The name of the file that contains the SSH private key. If the file name is not fully qualified, the file must exist in the user's home directory on the HMC.

>   Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen** command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so when you run the command on the HMC, you must specify both the directory and the file name for the private key. If you generate a key with a passphrase, you will be prompted to enter the passphrase when you run any HMC command that uses the key.
>
>   If both this option and the **--passwd** option are omitted when the VIOS update image is on a remote SFTP server, you will be prompted to enter the password. The **-k** and **--passwd** options are mutually exclusive.

-l   The mount location defined on the NFS server that contains the VIOS update image.

>   This option is required when the VIOS update image is in an NFS file system. Otherwise, this option is not valid.

--options
>   Options to be passed to the **mount** command used to mount the NFS file system that contains the VIOS update image. The options must be enclosed in double quotes.
>
>   The HMC supports NFS versions 3 and 4, and this command uses version 3 by default. To use version 4, include the option **vers=4**.
>
>   This option is only valid when the VIOS update image is in an NFS file system.

-d   The name of the directory on the remote server that contains the VIOS update image. If this option is not specified when the VIOS update image is on a SFTP server, the image will be obtained from the user's home directory. If this option is not specified when the VIOS update image is in an NFS file system, the image will be obtained from the *mount-location* on the NFS server.

--device
>   When the VIOS update image is on a USB data storage device, use this option to specify the name of the USB device on the HMC. The USB device must be connected to the HMC and must be mounted with the **mount** command before this command is run. The **lsmediadev** command can be used to display the device name of the USB device once it has been connected to the HMC.

--restart
>   Specify this option to restart the VIOS after installing the update if the update requires a restart.

--save   Specify this option to save the update image on the HMC hard disk.

--help   Display the help text for this command and exit.

EXAMPLES
Update VIOS **vios1** using a VIOS update image from the HMC hard disk and restart the VIOS after the update if required:

updvios -m sys1 -p vios1 -r disk -n VIOS_FP_3.1.3.14 --restart

Update VIOS **vios1** using a VIOS update image from a remote SFTP server, and use SSH keys for authentication:

        updvios -m sys1 -p vios1 -r sftp -h sftpserver -u sftpuser
        -k /home/hmcuser/keys/id_rsa -d vios/update/VIOS_FP_3.1.3.14
        -f H24094002.iso

Update the VIOS with ID **1** using a VIOS update image from a remote SFTP server (you will be prompted for the password). Restart the VIOS after the update if required and save the image on the HMC hard disk:

        updvios -m 9080-HEX*1234567 --id 1 -r sftp -n VIOS_FP_3.1.2.10
        -h sftpserver -u sftpuser -d vios/update/VIOS_FP_3.1.2.10 --restart
        --save

Update the VIOS **vios1** using a VIOS update image from an NFS file system, and use NFS version 4. Restart the VIOS after the update if required:

        updvios -m sys1 -p vios1 -r nfs -h 9.3.145.52 -l /images
        --options "vers=4" -d vios/update/VIOS_FP_3.1.3.14 --restart
        -f U872970.bff,U877527.bff,U877574.bff,U879820.bff,U883888.bff

Update the VIOS with ID **1** using a VIOS update image from a USB data storage device (the USB data storage device must already be connected to the HMC):

        lsmediadev (to obtain mount point/device name)

        mount /dev/sdb1

        updvios -m sys1 --id 1 -r usb --device /dev/sdb1

Update VIOS **vios1** using a VIOS update image from the IBM Fix Central website. Restart the VIOS after the update if required and save the update image to the HMC hard disk:

        updvios -m sys1 -p vios1 -r ibmwebsite -n VIOS_FP_3.1.3.14
        --restart --save

ENVIRONMENT
        None

BUGS
        None

AUTHOR
        IBM Austin

SEE ALSO
        chviosupd, **cpviosupd**, **lsmediadev**, **lsviosupd**, **rmviosupd**

NAME
       upgvios - upgrade VIOS

SYNOPSIS
       upgvios -r {**disk** | **nfs** | **sftp** | **usb**} **-m** *managed-system*
        {**-p** *VIOS-name* | **--id** *VIOS-ID*} **--disk** *disk-names*
        [**-n** *image-name*] [**-f** *files*]
        [**-h** *host-name*] [**-u** *user-ID*] [**--passwd** *password*] [**-k** *SSH-private-key*]
        [**-d** *directory*] [**-l** *mount-location*] [**--options "***mount-command-options***"**]
        [**--device** *device-name*] [**--save**] [**--help**]

DESCRIPTION
       upgvios upgrades a Virtual I/O Server (VIOS).

       The VIOS will be restarted during the upgrade.

OPTIONS
       -r   The repository that contains the VIOS installation image. Valid values are **disk** for the Hardware
                 Management Console (HMC) hard disk, **nfs** for an NFS file system, **sftp** for a secure FTP (SFTP)
                 server, and **usb** for a USB data storage device.

       -m   The name of the managed system which has the VIOS to upgrade. The name may either be the
                 user-defined name for the managed system, or be in the form *tttt*-*mmm***sssssss*, where *tttt* is the
                 machine type, *mmm* is the model, and *sssssss* is the serial number of the managed system. The
                 tttt-*mmm***sssssss* form must be used if there are multiple managed systems with the same user-
                 defined name.

       -p   The name of the VIOS to upgrade.

                 You must either use this option to specify the name of the VIOS or use the **--id** option to specify
                 the ID of the VIOS. The **-p** and **--id** options are mutually exclusive.

       --id   The ID of the VIOS to upgrade.

                 You must either use this option to specify the ID of the VIOS or use the **-p** option to specify the
                 name of the VIOS. The **--id** and **-p** options are mutually exclusive.

       --disk   The name of one or more free VIOS disks to be used for the upgrade. Multiple disk names must be
                 comma separated. The total of the specified disk sizes must be a minimum of 30 GB.

       -n   The name of the VIOS installation image.

                 When the VIOS installation image is on the HMC hard disk, this option is required to specify the
                 name of the installation image.

                 When the VIOS installation image is on a remote server or a USB data storage device and the
                 --save option is specified, this option is required to specify the name used to save the image to the
                 HMC hard disk.

       -f   When the VIOS installation image is on a remote server, use this option to specify the installation
                 image file names. 1 or 2 ISO file names must be specified. Multiple file names must be comma
                 separated.

                 This option is required and only valid when the VIOS installation image is on a remote server.

       -h   The host name or IP address of the remote server.

       -u   The user ID to use to log in to the remote SFTP server.

                 This option is required when the VIOS installation image is on a remote SFTP server. Otherwise,
                 this option is not valid.

--passwd
>   The password to use to log in to the remote SFTP server.

>   If both this option and the **-k** option are omitted when the VIOS installation image is on a remote SFTP server, you will be prompted to enter the password. The **--passwd** and **-k** options are mutually exclusive.

-k   The name of the file that contains the SSH private key. If the file name is not fully qualified, the file must exist in the user's home directory on the HMC.

>   Use the **ssh-keygen** command to generate the public and private SSH key pair. The **ssh-keygen** command is not allowed to write to the **.ssh** directory in the user's home directory on the HMC, so when you run the command on the HMC, you must specify both the directory and the file name for the private key. If you generate a key with a passphrase, you will be prompted to enter the passphrase when you run any HMC command that uses the key.

>   If both this option and the **--passwd** option are omitted when the VIOS installation image is on a remote SFTP server, you will be prompted to enter the password. The **-k** and **--passwd** options are mutually exclusive.

-l   The mount location defined on the NFS server that contains the VIOS installation image.

>   This option is required when the VIOS installation image is in an NFS file system. Otherwise, this option is not valid.

--options
>   Options to be passed to the **mount** command used to mount the NFS file system that contains the VIOS installation image. The options must be enclosed in double quotes.

>   The HMC supports NFS versions 3 and 4, and this command uses version 3 by default. To use version 4, include the option **vers=4**.

>   This option is only valid when the VIOS installation image is in an NFS file system.

-d   The name of the directory on the remote server that contains the VIOS installation image. If this option is not specified when the VIOS installation image is on a SFTP server, the image will be obtained from the user's home directory. If this option is not specified when the VIOS installation image is in an NFS file system, the image will be obtained from the *mount-location* on the NFS server.

--device
>   When the VIOS installation image is on a USB data storage device, use this option to specify the name of the USB device on the HMC. The USB device must be connected to the HMC and must be mounted with the **mount** command before this command is run. The **lsmediadev** command can be used to display the device name of the USB device once it has been connected to the HMC.

--save   Specify this option to save the VIOS installation image on the HMC hard disk.

--help   Display the help text for this command and exit.

EXAMPLES
>   Upgrade VIOS **vios1** using a VIOS installation image from the HMC hard disk:

>   **upgvios -m sys1 -p vios1 --disk hdisk6 -r disk -n VIOS_4.1.0.00**

>   Upgrade VIOS **vios1** using a VIOS installation image from a remote SFTP server, and use SSH keys for authentication:

>   **upgvios -m sys1 -p vios1 --disk hdisk2,hdisk3 -r sftp -h sftpserver**

      -u sftpuser -k /home/hmcuser/keys/id_rsa -d vios/upgrade/VIOS_3.1.4.00
      -f dvdimage.iso

Upgrade the VIOS with ID **1** using a VIOS installation image from a remote SFTP server (you will be prompted for the password). Save the image on the HMC hard disk:

      upgvios -m 9080-HEX*1234567 --id 1 --disk hdisk1 -r sftp
      -n VIOS_3.1.4.00 --save -h sftpserver -u sftpuser
      -d vios/upgrade/VIOS_3.1.4.00 -f dvdimage.v1.iso,dvdimage.v2.iso

Upgrade the VIOS **vios1** using a VIOS installation image from an NFS file system, and use NFS version 4:

      updvios -m sys1 -p vios1 --disk hdisk9,hdisk10 -r nfs -h 9.3.145.52
      -l /images --options "vers=4" -d vios/upgrade/VIOS_IMAGE
      -f dvdimage.iso

Upgrade the VIOS with ID **1** using a VIOS installation image from a USB data storage device (the USB data storage device must already be connected to the HMC):

      lsmediadev (to obtain mount point/device name)

      mount /dev/sdb1

      upgvios -m sys1 --id 1 --disk hdisk1,hdisk2,hdisk3 -r usb
      --device /dev/sdb1

ENVIRONMENT
      None
BUGS
      None
AUTHOR
      IBM Austin
SEE ALSO
      chviosimg, **cpviosimg**, **installios**, **lsmediadev**, **lsviosimg**, **rmviosimg**, **updvios**

NAME
       viosvrcmd - run Virtual I/O Server command

SYNOPSIS
       viosvrcmd -m *managed-system* {**-p** *partition-name* | **--id** *partition-ID*}
        -c "*command***"** [**-t** *timeout*] [**--admin**] [**--help**]

DESCRIPTION
       viosvrcmd runs an I/O server command line interface (ioscli) command on a Virtual I/O Server (VIOS).

       The ioscli commands are passed from the Hardware Management Console (HMC) to the VIOS over an
       RMC session. RMC does not allow interactive execution of ioscli commands.

OPTIONS
       -m   The name of the managed system which has the VIOS on which to run the command. The name
               may either be the user-defined name for the managed system, or be in the form *tttt-mmm*sssssss*,
               where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number of the managed
               system. The *tttt-mmm*sssssss* form must be used if there are multiple managed systems with the
               same user-defined name.

       -p   The name of the VIOS partition on which to run the command.

               You must either use this option to specify the name of the partition, or use the **--id** option to spec-
               ify the partition's ID. The **-p** and the **--id** options are mutually exclusive.

       --id   The ID of the VIOS partition on which to run the command.

               You must either use this option to specify the ID of the partition, or use the **-p** option to specify the
               partition's name. The **--id** and the **-p** options are mutually exclusive.

       -c   The I/O server command line interface (ioscli) command to run on the VIOS. *command* must be
               enclosed in double quotes.

       -t   The maximum time, in minutes, to wait for the VIOS command to complete. The following time-
               out values are supported: 1, 3, 5, 8, 10, 20, 30, 40, 50, 60, and 120 minutes. If any other value less
               than 120 is specified, the value is rounded up to the next supported value. If a value greater than
               120 is specified, the command will fail with an error.

               If this option is not specified, the timeout value defaults to 10 minutes.

       --admin
               Specify this option to run the command as root on the VIOS. The HMC will run **oem_setup_env**
               immediately before running *command*.

               Only HMC users with the **ViosAdminOp** task in their task roles are authorized to specify the
               --admin option. Either the **mkaccfg** or the **chaccfg** command must be used to add the **ViosAd-
               minOp** task to a task role. The **ViosAdminOp** task can only be added to custom task roles that
               are based on the **hmcoperator** or **hmcsuperadmin** task role. None of the pre-defined task roles,
               including the **hmcoperator** and **hmcsuperadmin** task roles, contain the **ViosAdminOp** task.

       --help   Display the help text for this command and exit.

EXAMPLES
       Run the **ioslevel** command on VIOS **vios_lpar**:

       viosvrcmd -m mySystem -p vios_lpar -c "ioslevel"

       Run the **lsdev -virtual** command on the VIOS that has a partition ID of **4**:

       viosvrcmd -m 9406-570*A0001234 --id 4 -c "lsdev -virtual"

ENVIRONMENT
       None
BUGS
       None
AUTHOR
       IBM Austin

NAME
       xfervsn - transfer a virtual serial number

SYNOPSIS
       xfervsn -m *managed-system* **-t** *target-managed-system*
        -s *virtual-serial-number* [**--ip** *IP-address* [**-u** *user-ID*]] [**--help**]

DESCRIPTION
       xfervsn transfers a virtual serial number from *managed-system* to *target-managed-system*.

OPTIONS
       -m   The name of the source managed system from which to transfer the virtual serial number. The
              name may either be the user-defined name for the managed system, or be in the form *tttt-*
              mmm*sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number
              of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed
              systems with the same user-defined name.

       -t   The name of the target, or destination, managed system to which to transfer the virtual serial num-
              ber. The name may either be the user-defined name for the managed system, or be in the form *tttt-*
              mmm*sssssss, where *tttt* is the machine type, *mmm* is the model, and *sssssss* is the serial number
              of the managed system. The *tttt-mmm*sssssss* form must be used if there are multiple managed
              systems with the same user-defined name.

       --ip   If the destination managed system is not managed by the same management console that is manag-
              ing the source managed system, use this option to specify the IP address or host name of the man-
              agement console that is managing the destination managed system.

              SSH must be enabled on both management consoles. Also, you must run the **mkauthkeys** com-
              mand once to set up SSH key authentication.

       -u   If the destination managed system is not managed by the same management console that is manag-
              ing the source managed system, use this option to specify the user ID to use on the management
              console that is managing the destination managed system. If you do not specify the user ID, then
              the user ID of the user that issues this command will be used.

       -s   The virtual serial number to transfer. Only a virtual serial number that is not assigned to any parti-
              tion can be transferred.

       --help   Display the help text for this command and exit.

EXAMPLES
       Transfer the virtual serial number **1234567** from managed system **system1** to managed system **system2**,
       when both managed systems are managed by the same HMC:

       xfervsn -m system1 -t system2 -s 1234567

       Transfer the virtual serial number **1234567** from managed system **system1** to managed system **system2**,
       when **system2** is managed by the HMC with the host name **hmc2**:

        mkauthkeys --ip hmc2 -u hmc2user

        xfervsn -m system1 -t system2 -s 1234567 --ip hmc2 -u hmc2user

ENVIRONMENT
       None

BUGS
       None

AUTHOR
       IBM Austin

SEE ALSO
lsvsn, **mkauthkeys**, **rmvsn**