

1. Save/Collect Information on current setup:

```
[root@1300038.mgmt001st001 ~]# lshsm
```

```
Node Name   HSM Filesystem  FS State Mgrtd Size Pmgrtd Size Mgrtd Files Pmgrtd Files Unused Inodes Free Size
mgmt001st001 /ibm/TSM_HSM_DEMO active 0K      10.3G    0      4      11.75M  187.91G
mgmt001st001 /ibm/test      active 409600K 0K      4      0      1996810 98.66G
EFSSG1000I The command completed successfully.
```

```
[root@1300038.mgmt001st001 ~]# lshsmstatus
```

```
Global Status
Node      Daemons Recall  Migrate  Failover Filesystem(s)
         (Rec-#) (Migr-#)   (Owned)
=====
mgmt001st001 active active(00) active(00) active test,TSM_HSM_DEMO
=====
mgmt002st001 active active(00) active(00) active

Filesystem  Running  Mount
Device  Status Recall Migrate Point  Status
=====
TSM_HSM_DEMO active  0  0  /ibm/TSM_HSM_DEMO OK
=====
test active  0  0  /ibm/test OK
EFSSG1000I The command completed successfully.
```

```
[root@1300038.mgmt001st001 ~]# lstsmnode
```

```
Node name  TSM target node name TSM server name TSM server address TSM node name
mgmt001st001 SWV7000U1      TSM_SYDNEY  10.2.10.66  SWV7000U1_N1
mgmt002st001 SWV7000U1      TSM_SYDNEY  10.2.10.66  SWV7000U1_N2
EFSSG1000I The command completed successfully.
```

```
[root@1300038.mgmt001st001 ~]# net registry enumerate HKLM/software/ibm/sonas/hsm/managedFS
```

```
Valuename = 5298666858919100417
Type      = REG_SZ
Value     = "TSM_HSM_DEMO"

Valuename = 5307559157950447616
Type      = REG_SZ
Value     = "test"
```

```
[root@1300038.mgmt001st001 ~]# df
```

```
Filesystem      1K-blocks  Used Available Use% Mounted on
/dev/sda2      19220528 10478192 7765988 58% /
tmpfs          37054776   0 37054776 0% /dev/shm
/dev/sda7      107661280 1370212 100822144 2% /ftdc
/dev/sda1       9614116 153324 8972420 2% /persist
/dev/sda5      107653248 43747924 58436800 43% /var
/dev/sda6       9614116 164900 8960844 2% /var/ctdb/persistent
/dev/TSM_HSM_DEMO 209715200 12680448 197034752 7% /ibm/TSM_HSM_DEMO
/dev/fs0       524288000 487936 523800064 1% /ibm/fs0
/dev/test      115343360 11889920 103453440 11% /ibm/test
/dev/SCSA_Gold 10485760 612608 9873152 6% /ibm/SCSA_Gold
```

2. Start Cleanup Process:

Technotes (troubleshooting)

How to remove HSM management from a file system?

Number: S1004267 **Visibility:** Internal Use (Intranet) **Published:** October 30, 2014

Segment: Network Attached Storage (NAS) **Product:** Scale Out Network Attached Storage **Component:** 1.3

Author: Ana Gabriela Iturbe Desentis **Task:** Troubleshoot **Topic:** Documentation

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Segment: Network Attached Storage (NAS) **Product:** Scale Out Network Attached Storage **Component:** 1.3

Author: Ana Gabriela Iturbe Desentis **Task:** Troubleshoot **Topic:** Problem Resolution

Platform(s): Linux Version(s): 1.3; 1.3.2; 1.3.2.1; 1.4

Historical path:

URL:

Problem(Abstract)

Scale Out **Net**work Attached Storage does not provide a command to remove a HSM managed file system.

Symptom

The CLI command '*rmfs*' returns an error when trying to remove a HSM managed file system.

Cause

Environment

There is no documented CLI command to remove HSM managed file systems.

Information Center - first Statement:

http://publib.boulder.ibm.com/infocenter/sonasic/sonas1ic/topic/com.ibm.sonas.doc/adm_tsm_for_hsm_limitations.html

- This is a requirement for all software versions.

Diagnosing the problem

SONAS/IFS command '*lshsmstatus*' will show which file system(s) are HSM managed, but this should be known information for the customer.

The customer needs to specify clearly which file system(s) need to be removed

Resolving the problem

NOTE: This procedure should not be mailed to customer. To be performed by IBM

service representative ONLY!

Root user access to the system is required to follow the procedure. Follow the procedure in sequence and stop if you encounter any errors. Do not proceed without fixing the error first.

Removing the HSM management from a file system will **recall all migrated files**, thus there must be enough space in the file system to successfully finish this step, else the command will fail.

How to remove space management (HSM) from a file system

Preparation:

- Log on to the active management node as root.

- Make sure the node is the active management node - run:

lsnode

```
[root@1300038.mgmt001st001 ~]# lsnode
```

Hostname	IP	Description	Role	Product version
<i>Connection status GPFS status CTDB status Last updated</i>				
mgmt001st001	192.168.8.2	active management node		
management,interface,storage	1.4.3.0-17	OK	active	active
11/14/14 8:50 PM				
mgmt002st001	192.168.8.3	passive management node		
management,interface,storage	1.4.3.0-17	OK	active	active
11/14/14 8:50 PM				

EFSSG1000I The command completed successfully.

- Ensure that no HSM migration jobs are running on the HSM managed file system(s) that need to be removed:

```
lsjobstatus --all
```

No running Jobs

- Stop the HSM policies running against the HSM managed file systems that need to be removed by using the command:

stoppolicy

```
[root@1300038.mgmt001st001 ~]# lspolicy -D TSM_HSM_DEMO
```

RULE 'default' SET POOL 'system'

EFSSG1000I The command completed successfully.

```
[root@1300038.mgmt001st001 ~]# lspolicy -D test
```

RULE 'default' SET POOL 'system'

EFSSG1000I The command completed successfully.

- Change or remove the policies that are scheduled against the file system and contain HSM rules, meaning remove the HSM related rule(s).

chpolicy, rmpolicytask

Nothing required as they are set for default and none are running.

- Verify and if needed change the policy rule set applied against the file by removing HSM related rule(s).

chpolicy, setpolicy

None required to change/set.

In the example below we have two file system: /ibm/gpfs1 and /ibm/gpfs2 and we remove HSM for /ibm/gpfs1:

A) Reconciling the files and removing space management

The official Tivoli procedure is documented here and requires root access:
http://publib.boulder.ibm.com/infocenter/tsminfo/v6/topic/com.ibm.itsm.hsmul.doc/t_hsm_remove_via_cmd.html

NOTE: You need to have enough space in the file system because executing 'dsmmigfs remove' will recall all migrated files into the file system or the command will fail in case there is not enough space available in the file system

[root@1300038.mgmt001st001 ~]# lshsm

Node Name	HSM Filesystem	FS State	Mgrtd Size	Pmgrtd Size	Mgrtd Files	Pmgrtd Files
mgmt001st001	/ibm/TSM_HSM_DEMO	active	0K	10.3G	0	4
	11.75M		187.91G			
mgmt001st001	/ibm/test	active	409600K	0K	4	0
	98.66G					1996813

EFSSG1000I The command completed successfully.

[root@1300038.mgmt001st001 ~]# dsmreconcile -Detail -Recursive /ibm/TSM_HSM_DEMO

IBM Tivoli Storage Manager

Command Line Space Management Client Interface

Client Version 6, Release 3, Level 1.2

Client date/time: 2014-11-14 21:41:55

(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.

ANS1107E Invalid option/value: '-Recursive'

[root@1300038.mgmt001st001 ~]# dsmreconcile -Detail

/ibm/TSM_HSM_DEMO

IBM Tivoli Storage Manager

Command Line Space Management Client Interface

Client Version 6, Release 3, Level 1.2

Client date/time: 2014-11-14 21:42:04

(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.

Reconciling '/ibm/TSM_HSM_DEMO' file system:

Querying the TSM server for a list of migrated files...

Received 4 entries

Expiring migrated files on the server...

0 files exceeded the 0 day expiration period; removed from server

0 files newly marked for expiration

0 files previously marked for expiration

ANS9250I File system '/ibm/TSM_HSM_DEMO' reconciliation completed.

[root@1300038.mgmt001st001 ~]# dsmreconcile -Detail /ibm/test

IBM Tivoli Storage Manager

Command Line Space Management Client Interface

Client Version 6, Release 3, Level 1.2

Client date/time: 2014-11-14 21:42:15

(χ) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.

(χ)

Reconciling '/ibm/test' file system:

Querying the TSM server for a list of migrated files...

Received 4 entries

Expiring migrated files on the server...

0 files exceeded the 0 day expiration period; removed from server

0 files newly marked for expiration

0 files previously marked for expiration

ANS9250I File system '/ibm/test' reconciliation completed.

[root@hathi.mgmt001st001]# ssh int001st001 dsmmigfs remove /ibm/gpfs1

IBM Tivoli Storage Manager

Command Line Space Management Client Interface

Client Version 6, Release 2, Level 2.5

Client date/time: 03-11-2011 17:39:48

(c) Copyright by IBM Corporation and other(s) 1990, 2011. All Rights Reserved.

Recalling all migrated files..... this may take a while.

Reconciling '/ibm/gpfs1' file system:

```

Querying the TSM server for a list of migrated files...
  Received 10 entries
Expiring migrated files on the server...
  10 files exceeded the 0 day expiration period; removed from server
  0 files newly marked for expiration
  0 files previously marked for expiration
ANS9250I File system '/ibm/gpfs1' reconciliation completed.
Removing HSM support from /ibm/gpfs1 ...
ANS9077I dsmmigfs: removed space management from file system /ibm/gpfs1.

```

[root@1300038.mgmt001st001 ~]# dsmmigfs remove /ibm/test

```

IBM Tivoli Storage Manager
Command Line Space Management Client Interface
  Client Version 6, Release 3, Level 1.2
  Client date/time: 2014-11-14 21:43:01
(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.
  Recalling all migrated files..... this may take a while.
Reconciling '/ibm/test' file system:
  Querying the TSM server for a list of migrated files...
    Received 4 entries
  Expiring migrated files on the server...
    4 files exceeded the 0 day expiration period; removed from server
    0 files newly marked for expiration
    0 files previously marked for expiration
ANS9250I File system '/ibm/test' reconciliation completed.
Removing HSM support from /ibm/test ...
ANS9077I dsmmigfs: removed space management from file system /ibm/test.

```

[root@1300038.mgmt001st001 ~]# lshsm

Node Name	HSM Filesystem	FS State	Mgrtd Size	Pmgrtd Size	Mgrtd Files	Pmgrtd Files
mgmt001st001	/ibm/TSM_HSM_DEMO	active	0K	10.3G	0	4
			11.75M	187.91G		

EFSSG1000I The command completed successfully.

[root@1300038.mgmt001st001 ~]# lshsmstatus

```

Global Status
Node      Daemons Recall  Migrate  Failover  Filesystem(s)
          (Rec-#) (Migr-#) (Owned)
=====
mgmt001st001 active active(00) active(00) active TSM_HSM_DEMO

```

```

=====
mgmt002st001 active active(00) active(00) active
  Filesystem      Running      Mount
Device  Status Recall Migrate Point   Status
=====
=====
TSM_HSM_DEMO active  0  0  /ibm/TSM_HSM_DEMO OK
EFSSG1000I The command completed successfully.

```

```

[root@1300038.mgmt001st001 ~]# net registry enumerate
HKLM/software/ibm/sonas/hsm/managedFS

```

```

Valuename = 5298666858919100417
Type      = REG_SZ
Value     = "TSM_HSM_DEMO"

```

```

Valuename = 5307559157950447616
Type      = REG_SZ
Value     = "test"

```

```

[root@1300038.mgmt001st001 ~]# dsmmigfs remove
/ibm/TSM_HSM_DEMO

```

```

IBM Tivoli Storage Manager
Command Line Space Management Client Interface
  Client Version 6, Release 3, Level 1.2
  Client date/time: 2014-11-14 21:46:15
(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.
ANS9079W dsmmigfs: no migrated files matching search criteria found.
Reconciling '/ibm/TSM_HSM_DEMO' file system:
  Querying the TSM server for a list of migrated files...
    Received 4 entries
  Expiring migrated files on the server...
    4 files exceeded the 0 day expiration period; removed from server
    0 files newly marked for expiration
    0 files previously marked for expiration
ANS9250I File system '/ibm/TSM_HSM_DEMO' reconciliation completed.
Removing HSM support from /ibm/TSM_HSM_DEMO ...
ANS9077I dsmmigfs: removed space management from file system
/ibm/TSM_HSM_DEMO.

```

```
[root@1300038.mgmt001st001 ~]# lshsm
```

EFSSG0100I There are no values to return.

```
[root@1300038.mgmt001st001 ~]# lshsmstatus
```

```
Global Status
Node      Daemons Recall   Migrate  Failover  Filesystem(s)
          (Rec-#) (Migr-#)      (Owned)
=====
mgmt001st001 active  active(00) active(00) active
=====
mgmt002st001 active  active(00) active(00) active
```

```
Filesystem    Running      Mount
Device  Status Recall Migrate Point  Status
```

EFSSG1000I The command completed successfully.

```
[root@1300038.mgmt001st001 ~]# net registry enumerate
HKLM/software/ibm/sonas/hsm/managedFS
```

```
Valuename = 5298666858919100417
Type      = REG_SZ
Value     = "TSM_HSM_DEMO"
```

```
Valuename = 5307559157950447616
Type      = REG_SZ
Value     = "test"
```

B) Removing the HSM settings from the **registry** for gpfs1
i) list the **registry** settings

```
[root@hathi.mgmt001st001 ]# net registry enumerate
HKLM/software/ibm/sonas/hsm/managedFS
Valuename = 3703686292014497792
Type      = REG_SZ
Value     = "gpfs1"
Valuename = 3703688651075616768
Type      = REG_SZ
Value     = "gpfs2"
```

ii) remove the **registry** settings for gpfs1
[root@hathi.mgmt001st001] net registry deletevalue
HKLM/software/ibm/sonas/hsm/managedFS 3703686292014497792

iii) verify the **registry** entries again.
[root@hathi.mgmt001st001 ~]# **net registry enumerate**
HKLM/software/ibm/sonas/hsm/managedFS
Valuename = 3703688651075616768
Type = REG_SZ
Value = "gpfs2"

[root@1300038.mgmt001st001 ~]# net registry deletevalue
HKLM/software/ibm/sonas/hsm/managedFS 5298666858919100417

[root@1300038.mgmt001st001 ~]# net registry deletevalue
HKLM/software/ibm/sonas/hsm/managedFS 5307559157950447616

[root@1300038.mgmt001st001 ~]# lshsm

EFSSG0100I There are no values to return.

[root@1300038.mgmt001st001 ~]# lshsmstatus

Global Status

Node	Daemons (Rec-#)	Recall (Migr-#)	Migrate	Failover (Owned)	Filesystem(s)
------	--------------------	--------------------	---------	---------------------	---------------

```
=====  
=====  
mgmt001st001 active active(00) active(00) active  
=====  
=====  
mgmt002st001 active active(00) active(00) active
```

Filesystem	Running	Mount
------------	---------	-------

Device	Status	Recall	Migrate	Point	Status
--------	--------	--------	---------	-------	--------

EFSSG1000I The command completed successfully.

[root@1300038.mgmt001st001 ~]# mmlscallback MIGRATION

MIGRATION

```
command = /opt/IBM/sofs/tools/migration-callback  
event = lowDiskSpace,noDiskSpace  
parms = %fsName %eventName %storagePool %filesetName %reason  
-N mgmt001st001,mgmt002st001
```

[root@1300038.mgmt001st001 ~]# mmdelcallback MIGRATION

mmdelcallback: Propagating the cluster configuration data to all affected nodes. This is an asynchronous process.

[root@1300038.mgmt001st001 ~]# mmlscallback MIGRATION

mmlscallback: No callback identifiers were found.

```
[root@1300038.mgmt001st001 ~]# mmaddcallback MIGRATION
--command="/opt/IBM/sofs/tools/migration-callback"
--event="lowDiskSpace,noDiskSpace" --parms "%fsName %eventName
%storagePool %filesetName %reason"
```

mmaddcallback: Propagating the cluster configuration data to all affected nodes. This is an asynchronous process.

```
[root@1300038.mgmt001st001 ~]# mmlscallback MIGRATION
```

MIGRATION

```
command    = /opt/IBM/sofs/tools/migration-callback
event      = lowDiskSpace,noDiskSpace
parms      = %fsName %eventName %storagePool %filesetName %reason
```

```
[root@1300038.mgmt001st001 ~]# lshsmstatus
```

This cluster is not configured for HSM. Exiting.
EFSSG1000I The command completed successfully.

```
[root@1300038.mgmt001st001 ~]# lshsm
```

EFSSG0100I There are no values to return.

```
[root@1300038.mgmt001st001 ~]# mmlsnode
```

GPFS nodeset Node list

```
-----
1300038  mgmt002st001 mgmt001st001
```

```
[root@1300038.mgmt001st001 ~]# ltsmnode
```

Node name TSM target node name TSM server name TSM server address TSM node name

```
mgmt001st001 SWV7000U1 TSM_SYDNEY 10.2.10.66
SWV7000U1_N1
mgmt002st001 SWV7000U1 TSM_SYDNEY 10.2.10.66
SWV7000U1_N2
```

EFSSG1000I The command completed successfully.

Optional:

Only to be executed when NO other HSM managed file system is present (registry does not list any file system being HSM managed)

C) Reset HSM node configuration

```
[root@hathi.mgmt001st001 ]# mmlscallback MIGRATION <<<<=== to verify the
current settings (under parms '-N <node list> present)
[root@hathi.mgmt001st001 ]# mmdelcallback MIGRATION
[root@hathi.mgmt001st001 ]# /etc/cnscm/cnscm-cbinstall
[root@hathi.mgmt001st001 ]# mmlscallback MIGRATION <<<<=== to verify the
new settings (no entry under parms for '-N <node list> present)
[root@hathi.mgmt001st001 ]# onnode all cnenablehsm
```

NOTE: The script name '*cnenablehsm*' may raise your concern here, but the branding is misleading in this case and this step is required to be executed to reset the configuration and to avoid logging errors and support issues.

```
[root@1300038.mgmt001st001 ~]# onnodeall cnenablehsm
```

```
>> NODE: 192.168.8.2 <<
IBM Tivoli Storage Manager
Command Line Space Management Client Interface
  Client Version 6, Release 3, Level 1.2
  Client date/time: 2014-11-14 21:55:02
(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.
TSM The node failover option is now enabled.
```

```
>> NODE: 192.168.8.3 <<
IBM Tivoli Storage Manager
Command Line Space Management Client Interface
  Client Version 6, Release 3, Level 1.2
  Client date/time: 2014-11-14 21:55:02
(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.
TSM The node failover option is now enabled.
```

```
[root@1300038.mgmt001st001 ~]# dsmreconcile -Detail /ibm/test
IBM Tivoli Storage Manager
Command Line Space Management Client Interface
  Client Version 6, Release 3, Level 1.2
  Client date/time: 2014-11-14 21:56:06
(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.
ANS9085E dsmreconcile: file system /ibm/test is not managed by space management.
```

```
[root@1300038.mgmt001st001 ~]# dsmreconcile -Detail /ibm/TSM_HSM_DEMO
IBM Tivoli Storage Manager
Command Line Space Management Client Interface
  Client Version 6, Release 3, Level 1.2
  Client date/time: 2014-11-14 21:56:14
(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.
ANS9085E dsmreconcile: file system /ibm/TSM_HSM_DEMO is not managed by space management.
```

```
[root@1300038.mgmt001st001 ~]# net registry enumerate
HKLM/software/ibm/sonas/hsm/managedFS
```

```
[root@1300038.mgmt001st001 ~]# mmlscallback MIGRATION
MIGRATION
      command    = /opt/IBM/sofs/tools/migration-callback
      event      = lowDiskSpace,noDiskSpace
      parms      = %fsName %eventName %storagePool %filesetName %reason
```

3. Use GUI to Delete /ibm/testStart after Cleaning up Process:

Task started.

11:58 PM

Running command:

rmrepltarget '/ibm/test' --force --cluster 13882354661700386609

11:58 PM

EFSSG0267I Replication target entry removed.

11:58 PM

The task is 100% complete.

11:58 PM

Task completed.

Task started.

12:00 AM

Running command:

chexport test --inactive --cluster 13882354661700386609

12:00 AM

EFSSG0037I The share test is inactivated.

12:00 AM

The task is 100% complete.

12:00 AM

Task completed.

Task started.

12:01 AM

Running command:

rmexport test --force --cluster 13882354661700386609

12:01 AM

EFSSG0021I The export test has been successfully removed.

12:01 AM

The task is 100% complete.

12:01 AM

Task completed.

Task started.

12:03 AM

Running command:

rmexport testsnapshot1 --force --cluster 13882354661700386609

12:03 AM

EFSSG0021I The export testsnapshot1 has been successfully removed.

12:03 AM

The task is 50% complete.

12:03 AM

Running command:

rmexport testsnapshot --force --cluster 13882354661700386609

12:03 AM

EFSSG0021I The export testsnapshot has been successfully removed.

12:03 AM

The task is 100% complete.

12:03 AM

Task completed.

Task started.

12:05 AM

Running command:

rmsnapshot test '@GMT-2014.11.04-04.11.56' --fileset fileset1 --force --cluster 13882354661700386609

12:05 AM

EFSSG0021I The snapshot @GMT-2014.11.04-04.11.56 has been successfully removed.

12:05 AM

The task is 100% complete.

12:05 AM

Task completed.

Task started.

12:05 AM

Running command:

rmsnapshot test '@GMT-2014.11.04-04.09.22' --fileset fileset1 --force --cluster 13882354661700386609

12:06 AM

EFSSG0021I The snapshot @GMT-2014.11.04-04.09.22 has been successfully removed.

12:06 AM

The task is 100% complete.

12:06 AM

Task completed.

Running command:

rmsnaprule hg_snap_rule_1 --keepSnapshots --force --cluster 13882354661700386609

12:07 AM

EFSSG0621I This operation might take a long time to complete.

12:07 AM

EFSSG0495I This command will proceed to remove the snapshot rule hg_snap_rule_1.

12:07 AM

EFSSG0575I All snapshots belonging to this snapshot rule will be kept and managed by the user now.

12:07 AM

EFSSG0021I The snapshot rule hg_snap_rule_1 has been successfully removed.

12:07 AM

The task is 100% complete.

12:07 AM

Task completed.

Running command:

rmsnaprule hg_snap_rule_1 --keepSnapshots --force --cluster 13882354661700386609

12:07 AM

EFSSG0621I This operation might take a long time to complete.

12:07 AM

EFSSG0495I This command will proceed to remove the snapshot rule hg_snap_rule_1.

12:07 AM

EFSSG0575I All snapshots belonging to this snapshot rule will be kept and managed by the user now.

12:07 AM

EFSSG0021I The snapshot rule hg_snap_rule_1 has been successfully removed.

12:07 AM

The task is 100% complete.

12:07 AM

Task completed.

Task started.

12:13 AM

Running command:

```
umountfs test --wait-for-complete --force --cluster 13882354661700386609
```

12:13 AM

EFSSG0289I Unmount request submitted for file system test

12:13 AM

EFSSG0039I The file system test has been successfully unmounted.

12:13 AM

The task is 33% complete.

12:13 AM

Running command:

```
rmfs test --force --cluster 13882354661700386609
```

12:13 AM

Deleting filesystem

12:14 AM

The task is 44% complete.

12:14 AM

Updating filesystem table

12:14 AM

The task is 55% complete.

12:14 AM

Deleting disks

12:14 AM

The task is 66% complete.

12:14 AM

Running command:

```
lsdisk --verbose --refresh --cluster 13882354661700386609
```

12:14 AM

The task is 100% complete.

12:14 AM

Task completed.

```
[root@1300038.mgmt001st001 ~]# df
```

Filesystem	1K-blocks	Used	Available	Use%	Mounted on
/dev/sda2	19220528	10475424	7768756	58%	/
tmpfs	37054776	0	37054776	0%	/dev/shm
/dev/sda7	107661280	1370212	100822144	2%	/ftdc
/dev/sda1	9614116	153324	8972420	2%	/persist
/dev/sda5	107653248	43769376	58415348	43%	/var
/dev/sda6	9614116	164900	8960844	2%	/var/ctdb/persistent
/dev/TSM_HSM_DEMO	209715200	11656704	198058496	6%	/ibm/TSM_HSM_DEMO
/dev/fs0	524288000	487936	523800064	1%	/ibm/fs0
/dev/SCSA_Gold	10485760	612608	9873152	6%	/ibm/SCSA_Gold

```
[root@1300038.mgmt001st001 ~]# mmlscallback MIGRATION
```

MIGRATION

command = /opt/IBM/sofs/tools/migration-callback

event = lowDiskSpace,noDiskSpace

parms = %fsName %eventName %storagePool %filesetName %reason

```
[root@1300038.mgmt001st001 ~]# lshsmstatus
```

This cluster is not configured for HSM. Exiting.

EFSSG1000I The command completed successfully.

```
[root@1300038.mgmt001st001 ~]# lshsm
```

EFSSG0100I There are no values to return.

```
[root@1300038.mgmt001st001 ~]# lstsmnode
```

```
Node name TSM target node name TSM server name TSM server address TSM node name
mgmt001st001 SWV7000U1 TSM_SYDNEY 10.2.10.66 SWV7000U1_N1
mgmt002st001 SWV7000U1 TSM_SYDNEY 10.2.10.66 SWV7000U1_N2
EFSSG1000I The command completed successfully.
```

```
[root@1300038.mgmt001st001 ~]# lsnode
```

```
Hostname IP Description Role Product version Connection status GPFS
status CTDB status Last updated
mgmt001st001 192.168.8.2 active management node management,interface,storage 1.4.3.0-17 OK
active active 11/14/14 10:15 PM
mgmt002st001 192.168.8.3 passive management node management,interface,storage 1.4.3.0-17 OK
active active 11/14/14 10:15 PM
EFSSG1000I The command completed successfully.
```

```
[root@1300038.mgmt001st001 ~]# dsmls
```

```
IBM Tivoli Storage Manager
Command Line Space Management Client Interface
Client Version 6, Release 3, Level 1.2
Client date/time: 2014-11-14 22:15:47
(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.
```

```
Actual Resident Resident File File
Size Size Blk (KB) State Name
/root:
<dir> 4096 4 - .gnupg/
<dir> 4096 4 - .ssh/
<dir> 4096 4 - keys/
122507 122507 120 r .OpenIPMI_db
39370 39370 40 r .bash_history
18 18 4 r .bash_logout
212 212 4 r .bash_profile
1749 1749 4 r .bashrc
100 100 4 r .cshrc
50 50 4 r .lessht
1024 1024 4 r .rnd
381 381 4 r .screenrc
2 2 4 r .sh_history
129 129 4 r .tcshrc
676 676 4 r .viminfo
33166 33166 36 r anaconda-ks.cfg
5347 5347 8 r asu.log
50423 50423 56 r install.log
6137 6137 8 r install.log.syslog
```

```
[root@1300038.mgmt001st001 ~]# dsmdf
```

```
IBM Tivoli Storage Manager
Command Line Space Management Client Interface
Client Version 6, Release 3, Level 1.2
Client date/time: 2014-11-14 22:15:55
(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.
```

```
HSM FS Mgrtd Pmgrtd Mgrtd Pmgrtd Unused Free
Filesystem State Size Size Files Files Inodes Size
```

4. List Registry:

```
[root@1300038.mgmt001st001 ~]# cnlsregistry
```

Error occurred while reading some registry values

----- Configurations -----

Keyname = ftp
Modtime = Thu, 01 Jan 1970 10:00:00 EST
Keyname = http
Modtime = Thu, 01 Jan 1970 10:00:00 EST
Keyname = scp
Modtime = Thu, 01 Jan 1970 10:00:00 EST
Keyname = nfs
Modtime = Thu, 01 Jan 1970 10:00:00 EST
Keyname = replication_targets
Modtime = Thu, 01 Jan 1970 10:00:00 EST
Keyname = AUTH
Modtime = Thu, 01 Jan 1970 10:00:00 EST
Keyname = wan_cache
Modtime = Thu, 01 Jan 1970 10:00:00 EST
Keyname = NDMP
Modtime = Thu, 01 Jan 1970 10:00:00 EST
Keyname = SECURITY
Modtime = Thu, 01 Jan 1970 10:00:00 EST
Keyname = mountedfs
Modtime = Thu, 01 Jan 1970 10:00:00 EST
Keyname = panache_gateway_nodes
Modtime = Thu, 01 Jan 1970 10:00:00 EST
Keyname = conn
Modtime = Thu, 01 Jan 1970 10:00:00 EST
Keyname = panache_prefetch_status
Modtime = Thu, 01 Jan 1970 10:00:00 EST
Keyname = nfs_ganesha
Modtime = Thu, 01 Jan 1970 10:00:00 EST
Keyname = NFS_GANESHA_OPTIONS
Modtime = Thu, 01 Jan 1970 10:00:00 EST
Keyname = ACL_TEMPLATES
Modtime = Thu, 01 Jan 1970 10:00:00 EST
Keyname = wan_cache_ganesha
Modtime = Thu, 01 Jan 1970 10:00:00 EST

Valuename = vsftpd
Value = "# no anon access
anonymous_enable=NO
put locks onto the files currently transferred
lock_upload_files=YES
enable write access
write_enable=YES
prevent changing access rights \u00E2\u0080\u0093 ACLs get screwed otherwise
chmod_enable=NO
enable that user is able to see the root of gpfs
chroot_local_user=YES
allow local user access
local_enable=YES
listen=YES
pam_service_name=vsftpd
set the ftp root directory users can see when they connect to the FTP
local_root=/var/opt/IBM/sofs/ftproot
log_ftp_protocol=NO
avoid flooding of traffic data to syslog
write it to log file "vsftpd_log_file" instead
syslog_enable=NO


```
xferlog_enable=YES
xferlog_std_format=NO
# use explicit log file def for higher safety
vsftpd_log_file=/var/log/cnlog/vsftp/vsftpd.log
#show user/groupnames instead of only numeric IDs
text_userdb_names=YES
# Make sure PORT transfer connections originate from port 20 (ftp-data).
connect_from_port_20=YES
# Use local timezone
use_localtime=YES
# Allow unlimited number of connections from a single IP address
max_per_ip=0
"
```

```
-----
Valuename = PERFC_CONFIGURED
Value     = "yes"
-----
```

```
Valuename = scpglobal
Value     = "allowscp
allowsftp
chrootpath=/var/opt/IBM/sofs/scproot
logfacility=LOG_USER
user=scpuser:033:00011:/home/scpuser
"
```

```
-----
Valuename = WCACHE_EXPORTS_CONFIGURED
Value     = "no"
-----
```

```
Valuename = NIS_CONFIGURED
Value     = "no"
-----
```

```
Valuename = LAUTH_CONFIGURED
Value     = "no"
-----
```

```
Valuename = CLUSTER_CONFIGURED
Value     = "yes"
-----
```

```
Valuename = CTDB_MANAGES_NSCD
Value     = "no"
-----
```

```
Valuename = PANACHE_CONFIGURED
Value     = "yes"
-----
```

```
Valuename = CTDB_MANAGES_YPBIND
Value     = "no"
-----
```

```
Valuename = CTDB_MANAGES_LASERVER
Value     = "no"
-----
```

```
Valuename = NIS_YPCONF
Value     = "# Licensed Materials - Property of IBM
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#
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#
```

```
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# /etc/yp.conf - yplib configuration file
# Valid entries are
#
# domain NISDOMAIN server HOSTNAME
#     Use server HOSTNAME for the domain NISDOMAIN.
#
# domain NISDOMAIN broadcast
#     Use broadcast on the local net for domain NISDOMAIN
#
# domain NISDOMAIN slp
#     Query local SLP server for ypservr supporting NISDOMAIN
#
# ypservr HOSTNAME
#     Use server HOSTNAME for the local domain. The
#     IP-address of server must be listed in /etc/hosts.
#
# broadcast
#     If no server for the default domain is specified or
#     none of them is reachable, try a broadcast call to
#     find a server.
#
"
```

```
Valuename = CTDB_MANAGES_HSM
Value     = "yes"
```

```
Valuename = CTDB_MANAGES_PERFC
Value     = "yes"
```

```
Valuename = CTDB_MANAGES_WINBIND
Value     = "yes"
```

```
Valuename = CIFS_CONFIGURED
Value     = "yes"
```

```
Valuename = NFS_CONFIGURED
Value     = "yes"
```

```
Valuename = FTP_CONFIGURED
Value     = "yes"
```

```
Valuename = HTTP_CONFIGURED
Value     = "yes"
```

```
Valuename = SCP_CONFIGURED
Value     = "yes"
```

```
Valuename = CTDB_MANAGES_VSFTPD
Value     = "yes"
```

```
Valuename = CTDB_MANAGES_HTTPD
Value     = "yes"
```

```
Valuename = CTDB_MANAGES_NFS
Value     = "yes"
```

Valuename = CTDB_MANAGES_SAMBA
Value = "yes"

Valuename = CTDB_MANAGES_SCP
Value = "yes"

Valuename = AUTH_TYPE
Value = "ad"

Valuename = SFU_CONFIGURED
Value = "yes"

Valuename = IDMAPPING_METHOD
Value = "sfu"

Valuename = crontab
Value = ""

----- NFS exports -----
----- FTP exports -----
----- HTTP exports -----
----- SCP exports -----
----- Authentication Configs -----

Keyname = PAM_CONFIGS
Modtime = Thu, 01 Jan 1970 10:00:00 EST
Keyname = NSSWITCH_CONF
Modtime = Thu, 01 Jan 1970 10:00:00 EST

Valuename = KRB_MODE
Value = "off"

Valuename = LDAP_CONF
Value = "# Licensed Materials - Property of IBM
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LDAP Defaults
Sample LDAP Client file ldap.conf

See ldap.conf(5) for details
This file should be world readable but not world writable.
LDAP Server
Your LDAP server. Must be resolvable without using LDAP.
Multiple hosts may be specified, each separated by a
space.
#URI ldap://ldap.example.com ldap://ldap-master.example.com:666
URI ldap://127.0.0.1/
Base DN
BASE dc=example,dc=com
URI switch timeouts for initial connections only
Specifies the timeout (in seconds) after which the poll(2)/select(2) following a connect(2) returns in
case of no activity.
NETWORK_TIMEOUT 10

```
# Timeout for any operation during an existing connection
# Specifies a timeout (in seconds) after which calls to synchronous LDAP APIs will abort if no
response is received.
# Also used for any ldap_result(3) calls where a NULL timeout parameter is supplied.
TIMEOUT 30
#TLS_CACERTDIR /etc/openldap/cacerts
#TLS_CACERT /etc/cacerts/cacert.pem
"
```

```
-----
Valuename = NSLCD_CONF
Value    = "# Licensed Materials - Property of IBM
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#
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#
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# This is the configuration file for the LDAP nameservice
# switch library nslcd daemon. It configures the mapping
# between NSS names (see /etc/nsswitch.conf) and LDAP
# information in the directory.
# See the manual page nslcd.conf(5) for more information.
# The uri pointing to the LDAP server to use for name lookups.
# Multiple entries may be specified. The address that is used
# here should be resolvable without using LDAP (obviously).
#uri ldap://127.0.0.1/
#uri ldaps://127.0.0.1/
# The LDAP version to use (defaults to 3
# if supported by client library)
#ldap_version 3
# The distinguished name of the search base.
# base dc=example,dc=com
# The distinguished name to bind to the server with.
# Optional: default is to bind anonymously.
#binddn cn=proxyuser,dc=example,dc=com
# The credentials to bind with.
# Optional: default is no credentials.
# Note that if you set a bindpw you should check the permissions of this file.
#bindpw secret
# Bind/connect timelimit.
#bind_timelimit 30
# Search timelimit.
#timelimit 30
# Idle timelimit. nslcd will close connections if the
# server has not been contacted for the number of seconds.
#idle_timelimit 3600
# Use StartTLS without verifying the server certificate.
#ssl start_tls
# CA certificates for server certificate verification
#tls_cacertdir /etc/ssl/certs
#tls_cacertfile /etc/ssl/ca.cert
#filter passwd (objectClass=User)
#filter group (objectClass=Group)
uid nslcd
gid ldap
```

```
# This comment prevents repeated auto-migration of settings.
uri ldap://127.0.0.1/
base dc=example,dc=com
ssl no
tls_cacertdir /etc/openldap/cacerts
"
```

```
-----
Valuename = PAM_LDAP_CONF
Value = "# Licensed Materials - Property of IBM
#
# "Restricted Materials of IBM"
#
# 5639-SN1
#
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# @(#) $Id: ldap.conf,v 1.38 2006/05/15 08:13:31 lukeh Exp $
#
# This is the configuration file for the LDAP nameservice
# switch library and the LDAP PAM module.
#
# The man page for this file is pam_ldap(5)
#
# PADL Software
# http://www.padl.com
#
# Your LDAP server. Must be resolvable without using LDAP.
# Multiple hosts may be specified, each separated by a
# space. How long nss_ldap takes to failover depends on
# whether your LDAP client library supports configurable
# network or connect timeouts (see bind_timelimit).
#host 127.0.0.1
# The distinguished name of the search base.
base dc=example,dc=com
# Another way to specify your LDAP server is to provide an
# uri with the server name. This allows to use
# Unix Domain Sockets to connect to a local LDAP Server.
#uri ldap://127.0.0.1/
#uri ldaps://127.0.0.1/
# The LDAP version to use (defaults to 3
# if supported by client library)
#ldap_version 3
# The distinguished name to bind to the server with.
# Optional: default is to bind anonymously.
#binddn cn=proxyuser,dc=example,dc=com
# The credentials to bind with.
# Optional: default is no credential.
#bindpw secret
# Search timelimit
#timelimit 30
# Bind/connect timelimit
#bind_timelimit 30
# Reconnect policy: hard (default) will retry connecting to
# the software with exponential backoff, soft will fail
# immediately.
#bind_policy hard
```

```

# Idle timelimit; client will close connections
# (nss_ldap only) if the server has not been contacted
# for the number of seconds specified below.
#idle_timelimit 3600
# Filter to AND with uid=%s
#pam_filter objectclass=account
# Specify a minimum or maximum UID number allowed
#pam_min_uid 0
#pam_max_uid 0
# OpenLDAP SSL mechanism
# start_tls mechanism uses the normal LDAP port, LDAPS typically 636
#ssl start_tls
#ssl on
# CA certificates for server certificate verification
# At least one of these are required if tls_checkpeer is yes
#tls_cacertfile /etc/ssl/ca.cert
#tls_cacertdir /etc/ssl/certs
# SASL mechanism for PAM authentication - use is experimental
# at present and does not support password policy control
#pam_sasl_mech DIGEST-MD5
uri ldap://127.0.0.1/
ssl no
pam_password md5
"

```

```

-----
Valuename = LOGIN_DEFS
Value = "# *REQUIRED*"
# Directory where mailboxes reside, _or_ name of file, relative to the
# home directory. If you _do_ define both, MAIL_DIR takes precedence.
# QMAIL_DIR is for Qmail
#
#QMAIL_DIR Maildir
MAIL_DIR /var/spool/mail
#MAIL_FILE .mail
# Password aging controls:
#
# PASS_MAX_DAYS Maximum number of days a password may be used.
# PASS_MIN_DAYS Minimum number of days allowed between password changes.
# PASS_MIN_LEN Minimum acceptable password length.
# PASS_WARN_AGE Number of days warning given before a password expires.
#
PASS_MAX_DAYS 999
PASS_MIN_DAYS 0
PASS_MIN_LEN 8
PASS_WARN_AGE 7
#
# Min/max values for automatic uid selection in useradd
#
UID_MIN 500
UID_MAX 60000
#
# Min/max values for automatic gid selection in groupadd
#
GID_MIN 500
GID_MAX 60000
#
# If defined, this command is run when removing a user.
# It should remove any at/cron/print jobs etc. owned by

```

```
# the user to be removed (passed as the first argument).
#
#USERDEL_CMD /usr/sbin/userdel_local
#
# If useradd should create home directories for users by default
# On RH systems, we do. This option is overridden with the -m flag on
# useradd command line.
#
CREATE_HOME yes
# The permission mask is initialized to this value. If not specified,
# the permission mask will be initialized to 022.
UMASK 077
# This enables userdel to remove user groups if no members exist.
#
USERGROUPS_ENAB yes
# Use MD5 or DES to encrypt password? Red Hat use MD5 by default.
MD5_CRYPT_ENAB yes
ENCRYPT_METHOD MD5
"
```

```
-----
Valuename = KRB5_CONF
Value = "[libdefaults]
default_realm = syd.demo.ibm
dns_lookup_realm = true
dns_lookup_kdc = true
ticket_lifetime = 24h
forwardable = yes
[realms]
syd.demo.ibm = {
    kdc = SYD-DEMO-DC2.syd.demo.ibm
}
```

```
-----
Valuename = SFU_DOMAINS
Value = "syd-demo"
```

```
-----
Valuename = AUTH_CONFIG_ID
Value = "14"
```

```
-----
Valuename = SYSTEM-AUTH
Value = "#%PAM-1.0M-1.0
# This file is auto-generated.
# User changes will be destroyed the next time authconfig is run.
auth required pam_env.so
auth required pam_tally2.so deny=0 unlock_time=3600
auth sufficient pam_unix.so try_first_pass
auth requisite pam_succeed_if.so uid >= 500 quiet
auth required pam_deny.so
account required pam_tally2.so
account required pam_unix.so broken_shadow
account sufficient pam_localuser.so
account sufficient pam_succeed_if.so uid < 500 quiet
account required pam_permit.so
password requisite pam_cracklib.so try_first_pass retry=3 minlen=6 dcredit=0 lcredit=0
credit=0 ucredit=0 maxrepeat=0 difok=0
password required pam_pwhistory.so enforce_for_root remember=3 use_authtok
password sufficient pam_unix.so md5 shadow try_first_pass use_authtok
password required pam_deny.so
session optional pam_keyinit.so revoke
```

```
session required pam_limits.so
session [success=1 default=ignore] pam_succeed_if.so service in crond quiet use_uid
session required pam_unix.so
"
```

Valuename = SSHD_DATA

Value = "# Licensed Materials - Property of IBM

#

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#

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##PAM-1.0

auth required pam_sepermit.so

auth include password-auth

account required pam_nologin.so

account include password-auth

password include password-auth

pam_selinux.so close should be the first session rule

session required pam_selinux.so close

session required pam_loginuid.so

pam_selinux.so open should only be followed by sessions to be executed in the user context

session required pam_selinux.so open env_params

session optional pam_keyinit.so force revoke

session include password-auth

"

Valuename = HTTPD

Value = "# Licensed Materials - Property of IBM

#

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##PAM-1.0

auth include password-auth

account include password-auth

password include password-auth

"

Valuename = VSFTPD

Value = "# Licensed Materials - Property of IBM

#

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#

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```
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#%PAM-1.0
session optional pam_keyinit.so force revoke
auth requisite pam_listfile.so item=user sense=deny file=/etc/vsftpd/ftpusers onerr=succeed
auth requisite pam_listfile.so item=group sense=deny file=/etc/vsftpd/ftpgroups onerr=succeed
#auth required pam_shells.so
auth include password-auth
account include password-auth
session required pam_loginuid.so
session include password-auth
"
```

Valuename = PASSWORD-AUTH

Value = "# Licensed Materials - Property of IBM

#

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#

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#%PAM-1.0

This file is auto-generated.

User changes will be destroyed the next time authconfig is run.

auth required pam_env.so

auth [default=ignore success=1] pam_succeed_if.so service in httpd:vsftpd:sshd_data quiet

auth sufficient pam_unix.so try_first_pass

auth requisite pam_succeed_if.so uid >= 1024 quiet

auth sufficient pam_winbind.so try_first_pass

auth required pam_deny.so

account [default=ignore success=1] pam_succeed_if.so service in httpd:vsftpd:sshd_data quiet

account required pam_unix.so broken_shadow

account sufficient pam_localuser.so

account sufficient pam_succeed_if.so uid < 1024 quiet

account [default=bad success=ok user_unknown=ignore] pam_winbind.so

account required pam_permit.so

password requisite pam_cracklib.so try_first_pass retry=3 type=

password sufficient pam_unix.so md5 shadow try_first_pass use_authtok

password sufficient pam_winbind.so use_authtok

password required pam_deny.so

session optional pam_keyinit.so revoke

session required pam_limits.so

session [success=1 default=ignore] pam_succeed_if.so service in crond quiet use_uid

session required pam_unix.so

"

Valuename = NETGROUP

Value = "nisplus"

Valuename = PASSWD

Value = "files winbind"

Valuename = GROUP

Value = "files winbind"

Valuename = SHADOW

Value = "files "
----- HSM managed FS -----
----- TSM specific testflags -----

5. Add new /ibm/hgtest File System:

Task started.

12:21 AM

Running command:

lsdisk --verbose --refresh --cluster 13882354661700386609

12:21 AM

The task is 14% complete.

12:21 AM

Running command:

mkdisk hgtest 17179869184 2 -N 2 --iogroup 0 --pool system --usagetype dataAndMetadata --cluster 13882354661700386609

12:21 AM

Creating Storage System volumes

12:21 AM

The task is 17% complete.

12:21 AM

Scanning for new devices

12:21 AM

The task is 21% complete.

12:21 AM

Creating NSDs

12:21 AM

The task is 25% complete.

12:21 AM

Adding to database

12:21 AM

Successfully created disks:

12:21 AM

IFS1415964066749

IFS1415964066564

12:21 AM

The task is 28% complete.

12:21 AM

Running command:

mkdisk hgtest 18253611008 2 -N 4 --iogroup 0 --pool system --usagetype dataAndMetadata --cluster 13882354661700386609

12:21 AM

Creating Storage System volumes

12:21 AM

The task is 32% complete.

12:21 AM

Scanning for new devices

12:21 AM

The task is 35% complete.

12:21 AM

Creating NSDs

12:21 AM

The task is 39% complete.

12:21 AM

Adding to database

12:21 AM

Successfully created disks:

12:21 AM
IFS1415964083316
IFS1415964083679
IFS1415964083862
IFS1415964083498
12:21 AM
The task is 42% complete.
12:21 AM
Running command:
mkfs hgtest '/ibm/hgtest' -b 256K -F
IFS1415964083498,IFS1415964083862,IFS1415964066749,IFS1415964083679,IFS1415964083316,IFS1415964066564 -j cluster -N 100 --noverify -R none --logplacement striped --quota filesystem
--cluster 13882354661700386609
12:21 AM
Creating filesystem
12:22 AM
The following disks of hgtest will be formatted on node mgmt001st001:
12:22 AM
IFS1415964083498: size 17825792 KB
12:22 AM
IFS1415964083862: size 17825792 KB
12:22 AM
IFS1415964066749: size 16777216 KB
12:22 AM
IFS1415964083679: size 17825792 KB
12:22 AM
IFS1415964083316: size 17825792 KB
12:22 AM
IFS1415964066564: size 16777216 KB
12:22 AM
Formatting file system ...
12:22 AM
Disks up to size 275 GB can be added to storage pool 'system'.
12:22 AM
Creating Inode File
12:22 AM
Creating Allocation Maps
12:22 AM
Creating Log Files
12:22 AM
Clearing Inode Allocation Map
12:22 AM
Clearing Block Allocation Map
12:22 AM
Formatting Allocation Map for storage pool 'system'
12:22 AM
Completed creation of file system /dev/hgtest.
12:22 AM
The task is 45% complete.
12:22 AM
Setting filesystem options
12:22 AM
The task is 47% complete.
12:22 AM
Setting filesystem options
12:22 AM
The task is 50% complete.
12:22 AM

```

Setting filesystem options
12:22 AM
The task is 52% complete.
12:22 AM
Refreshing configuration database
12:22 AM
The task is 54% complete.
12:22 AM
Mounting filesystem
12:22 AM
EFSSG1026I Mount request submitted for file system hgtest
12:22 AM
EFSSG0038I The file system hgtest has been successfully mounted.
12:22 AM
The task is 57% complete.
12:22 AM
Running command:
chowner 'root:root' '/ibm/hgtest' --cluster 13882354661700386609
12:22 AM
The task is 71% complete.
12:22 AM
Running command:
lsdisk --verbose --refresh --cluster 13882354661700386609
12:22 AM
The task is 85% complete.
12:22 AM
Running command:
lspool --refresh --device hgtest --cluster 13882354661700386609
12:22 AM
The task is 100% complete.
12:22 AM
Task completed.

```

6. Populate with some files/directories:

```

[root@1300038.mgmt001st001 hgtest]# ls -lR .
total 800
drwx----- 3 root root 8192 Nov 14 22:25 a
drwx----- 3 root root 8192 Nov 14 22:25 b
drwx----- 3 root root 8192 Nov 14 22:25 c
drwx----- 3 root root 8192 Nov 14 22:25 d
----- 1 root root 640 Nov 14 22:22 fileset.quota
----- 1 root root 640 Nov 14 22:22 group.quota
----- 1 root root 640 Nov 14 22:22 user.quota
./a:
total 8
drwx----- 2 root root 8192 Nov 14 22:26 aa
./a/aa:
total 2252800
-rw----- 1 root root 104857600 Nov 14 22:26 large2.dd
-rw----- 1 root root 1048576000 Nov 14 22:26 large3.dd
-rw----- 1 root root 1048576000 Nov 14 22:26 large4.dd
-rw----- 1 root root 104857600 Nov 14 22:26 large.dd
./b:
total 8
drwx----- 2 root root 8192 Nov 14 22:25 bb
./b/bb:
total 0

```

```
./c:
total 8
drwx----- 2 root root 8192 Nov 14 22:27 cc
./c/cc:
total 2177280
-rw----- 1 root root 104857600 Nov 14 22:26 large2.dd
-rw----- 1 root root 1048576000 Nov 14 22:26 large3.dd
-rw----- 1 root root 1048576000 Nov 14 22:26 large4.dd
-rw----- 1 root root 104857600 Nov 14 22:26 large.dd
./d:
total 8
drwx----- 2 root root 8192 Nov 14 22:25 dd
./d/dd:
total 0
[root@1300038.mgmt001st001 hgtest]#
```

7. Perform a Backup of File system using GUI:

```
ask started.
12:27 AM
Running command:
startbackup hgtest --sync --cluster 13882354661700386609
12:27 AM
EFSSG0543I A backup of file system hgtest started with JobID 45,379.
12:27 AM
The task is 100% complete.
12:27 AM
Task completed.
```

```
[root@1300038.mgmt001st001 hgtest]# lsjobstatus
```

```
File system Job Job id Status Start time End time/Progress RC Message
hgtest backup(S) 45379 running 11/14/14 10:27:56 PM EST scanning Errors=0
EFSSG1000I The command completed successfully.
```

```
Primary node: mgmt001st001
Job ID : 45379
PID:2179880
Primary backup node: mgmt001st001
Helper backup nodes: -
Synchronisation with TSM server requested by user.
2014-11-14 22:28:03+11:00 Starting backup.
*** FILE INCLUDE/EXCLUDE ***
Mode Function Pattern (match from top down) Source File
-----
No exclude filespace statements defined.
Excl Directory /.../.TsmCacheDir TSM
Excl Directory /.../.SpaceMan Operating System
Excl Directory /.../.sonas/ SONAS default
Excl Directory /.../.async_repl/ SONAS default
Excl Directory /.../.ctdb/ SONAS default
Excl Directory /.../.SpaceMan/ SONAS default
Excl Directory /.../.snapshots/ SONAS default
Exclude HSM /etc/adsm/SpaceMan/config/.../* Operating System
Exclude HSM /.../.SpaceMan/.../* Operating System
Exclude Restore /.../.SpaceMan/.../* Operating System
Exclude Archive /.../.SpaceMan/.../* Operating System
Include All /.../.mmbackupShadow* SONAS default
Exclude All /.../user.quota SONAS default
```

Exclude All /.../group.quota SONAS default
Exclude All /.../fileset.quota SONAS default
Exclude All /.../.mmbbackup* SONAS default
Exclude All /.../mmbbackup.audit* SONAS default
Exclude All /.../mmbbackupSubdirChg* SONAS default
Exclude All /.../list.mmbbackup* SONAS default
Exclude All /.../list.mmbbackup* SONAS default
Exclude All /.../.execScript.* SONAS default
Exclude All /.../mmbbackupCfg/* SONAS default
Exclude All /.../.sonas/* SONAS default
Exclude All /.../.async_repl/* SONAS default
Exclude All /.../.ctdb/* SONAS default
Exclude All /.../SpaceMan/* SONAS default
Exclude All /.../snapshots/* SONAS default
No DFS include/exclude statements defined.

Backup of /ibm/hgtest begins at Fri Nov 14 22:28:07 EST 2014.

Fri Nov 14 22:28:18 2014 Could not restore previous shadow file from TSM server TSM_SYDNEY
Fri Nov 14 22:28:18 2014 Querying files currently backed up in TSM server:TSM_SYDNEY.
Fri Nov 14 22:28:22 2014 Query of TSM server TSM_SYDNEY returned 12
Fri Nov 14 22:28:22 2014 No inventory found in TSM server TSM_SYDNEY
Fri Nov 14 22:28:22 2014 Created empty shadow for first backup to TSM server: TSM_SYDNEY
Fri Nov 14 22:28:22 2014 Generating policy rules file: /var/mmfs/mmbbackup/.mmbbackupRules.hgtest
Fri Nov 14 22:28:25 2014 Completed policy rule generation. 7 Exclude Dir directives, 15 Exclude File directives, 1 Include directives, 0 Warnings.
Fri Nov 14 22:28:25 2014 Scanning file system hgtest
Fri Nov 14 22:28:28 2014 Determining file system changes for hgtest [TSM_SYDNEY].
Fri Nov 14 22:28:29 2014 changed=16, expired=0, unsupported=0 for server [TSM_SYDNEY]
Fri Nov 14 22:28:29 2014 Finished calculating lists [16 changed, 0 expired] for server TSM_SYDNEY.
Fri Nov 14 22:28:29 2014 Sending files to the TSM server [16 changed, 0 expired].
Fri Nov 14 22:28:37 2014 Backing up files: 0 backed up, 0 expired, 0 failed.
Fri Nov 14 22:28:50 2014 Backing up files: 0 backed up, 0 expired, 0 failed.
Fri Nov 14 22:29:00 2014 Backing up files: 0 backed up, 0 expired, 0 failed.
Fri Nov 14 22:29:06 2014 Backing up files: 0 backed up, 0 expired, 0 failed.
Fri Nov 14 22:29:17 2014 Backing up files: 0 backed up, 0 expired, 0 failed.
Fri Nov 14 22:29:25 2014 Backing up files: 0 backed up, 0 expired, 0 failed.
Fri Nov 14 22:29:27 2014 Completed policy backup run with 0 policy errors, 0 files failed, 0 severe errors, returning rc=0.

Fri Nov 14 22:29:27 2014 Policy for backup returned 0 Highest TSM error 0

TSM Summary Information:

Total number of objects inspected: 22

Total number of objects backed up: 22

Total number of objects updated: 0

Total number of objects rebound: 0

Total number of objects deleted: 0

Total number of objects expired: 0

Total number of objects failed: 0

Fri Nov 14 22:29:27 2014 Analyzing audit log file /ibm/hgtest/mmbbackup.audit.hgtest.TSM_SYDNEY

Fri Nov 14 22:29:32 2014 Backing up files...

Fri Nov 14 22:29:33 2014 Done working with files for TSM Server: TSM_SYDNEY.

Fri Nov 14 22:29:33 2014 Completed successfully. exit 0

Backup of /ibm/hgtest completed successfully at Fri Nov 14 22:29:34 EST 2014.

2014-11-14 22:29:34+11:00 INFO: backup successful (rc=0).

End of log - backup job ended

Displaying errors for file system hgtest from 12:27 AM.

Primary node: mgmt001st001
Job ID : 45379
2014-11-14 22:28:14 ANS1084E No files have previously been backed up for
'/ibm/hgtest/.mmbackupShadow.1.TSM_SYDNEY'
or the specified file space is invalid for the current operating system.
2014-11-14 11:28:21 ANS1084E No files have previously been backed up for '/ibm/hgtest/*'
or the specified file space is invalid for the current operating system.

End of error - backup job ended

**[root@1300038.mgmt001st001 hgtest]# net registry enumerate
HKLM/software/ibm/sonas/hsm/managedFS**

[root@1300038.mgmt001st001 hgtest]# lshsmstatus
This cluster is not configured for HSM. Exiting.
EFSSG1000I The command completed successfully.

[root@1300038.mgmt001st001 hgtest]# lshsm
EFSSG0100I There are no values to return.

[root@1300038.mgmt001st001 hgtest]# cfghsmnodes TSM_SYDNEY mgmt001st001,mgmt002st001
EFSSG0380I Step enable hsm for HSM configuration is not necessary.
EFSSG0327I No HSM managed file systems found for which a take over must be triggered.
EFSSG0381I Step to disable hsm is not necessary for the HSM configuration.
EFSSG0384C Step to remove the HSM callback has completed on node mgmt001st001.
EFSSG0385I Step to add the HSM callback has completed on node mgmt001st001.
EFSSG0284I Successfully configured mgmt001st001,mgmt002st001 as HSM nodes.
EFSSG1000I The command completed successfully.

root@1300038.mgmt001st001 hgtest]# lshsm
EFSSG0100I There are no values to return.

**[root@1300038.mgmt001st001 hgtest]# net registry enumerate
HKLM/software/ibm/sonas/hsm/managedFS**

[root@1300038.mgmt001st001 hgtest]# lshsmstatus

Global Status
Node Daemons Recall Migrate Failover Filesystem(s)
(Rec-#) (Migr-#) (Owned)

=====
=====

mgmt001st001	active	active(00)	active(00)	active	
--------------	--------	------------	------------	--------	--

=====
=====

mgmt002st001	active	active(00)	active(00)	active	
--------------	--------	------------	------------	--------	--

Filesystem Running Mount
Device Status Recall Migrate Point Status
EFSSG1000I The command completed successfully.

```
[root@1300038.mgmt001st001 hgtest]# cfmhsmfs hgtest TSM_SYDNEY
EFSSG1000I The command completed successfully.
```

```
[root@1300038.mgmt001st001 hgtest]# lshsmstatus
```

```
Global Status
Node      Daemons Recall  Migrate  Failover Filesystem(s)
          (Rec-#) (Migr-#) (Owned)
=====
mgmt001st001 off    active(00) active(00) active  hgtest
=====
mgmt002st001 active active(00) active(00) active
Filesystem Running Mount
Device Status Recall Migrate Point Status
=====
hgtest active 0 0 /ibm/hgtest OK
EFSSG1000I The command completed successfully.
```

```
[root@1300038.mgmt001st001 hgtest]# net registry enumerate
HKLM/software/ibm/sonas/hsm/managedFS
```

```
Valuename = 5309204517240307712
Type      = REG_SZ
Value     = "hgtest"
```

```
[root@1300038.mgmt001st001 hgtest]# lshsm
```

```
Node Name HSM Filesystem FS State Mgrtd Size Pmgrtd Size Mgrtd Files Pmgrtd Files Unused Inodes
Free Size
mgmt001st001 /ibm/hgtest active OK 0K 0K 0 0 996388 94.4G
EFSSG1000I The command completed successfully.
```

```
[root@1300038.mgmt001st001 hgtest]# dsmreconcile -Detail /ibm/hgtest
```

```
IBM Tivoli Storage Manager
Command Line Space Management Client Interface
Client Version 6, Release 3, Level 1.2
Client date/time: 2014-11-14 22:35:48
(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.
```

```
Reconciling '/ibm/hgtest' file system:
Querying the TSM server for a list of migrated files...
Received 0 entries
Expiring migrated files on the server...
0 files exceeded the 0 day expiration period; removed from server
0 files newly marked for expiration
0 files previously marked for expiration
ANS9250I File system '/ibm/hgtest' reconciliation completed.
```

```
[root@1300038.mgmt001st001 hgtest]# dsmmigrate /ibm/hgtest/a/aa/
```

```
IBM Tivoli Storage Manager
Command Line Space Management Client Interface
Client Version 6, Release 3, Level 1.2
Client date/time: 2014-11-14 22:36:23
(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.
```

```
ANS9516E dsmmigrate: cannot create an user event message on session 5465E93700000000. Reason:
Invalid argument
ANS1228E Sending of object '/ibm/hgtest/a/aa/large4.dd' failed
```


ANS4047E There is a read error on '/ibm/hgtest/a/aa/large4.dd'. The file is skipped.
ANS9532W dsmmigrate: cannot destroy the session 5465E93700000000. Reason: Invalid argument
ANS9532W dsmmigrate: cannot destroy the session 5465E93700000000. Reason: Invalid argument

Recreated the faulty file and backed up again – This was successful. Possibly a corrupted file was created.

Re-ran the migration and worked:

[root@1300038.mgmt001st001 hgtest]# dsmmigrate /ibm/hgtest/a/aa/IBM Tivoli Storage Manager

Command Line Space Management Client Interface
Client Version 6, Release 3, Level 1.2
Client date/time: 2014-11-14 22:41:26
(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.

ANS9951I File: /ibm/hgtest/a/aa/large.dd has already been migrated.
ANS9951I File: /ibm/hgtest/a/aa/large2.dd has already been migrated.
ANS9951I File: /ibm/hgtest/a/aa/large3.dd has already been migrated.

[root@1300038.mgmt001st001 hgtest]# dsmmigrate /ibm/hgtest/a/aa/

IBM Tivoli Storage Manager
Command Line Space Management Client Interface
Client Version 6, Release 3, Level 1.2
Client date/time: 2014-11-14 22:41:42
(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.

ANS9951I File: /ibm/hgtest/a/aa/large.dd has already been migrated.
ANS9951I File: /ibm/hgtest/a/aa/large2.dd has already been migrated.
ANS9951I File: /ibm/hgtest/a/aa/large3.dd has already been migrated.
ANS9951I File: /ibm/hgtest/a/aa/large4.dd has already been migrated.

[root@1300038.mgmt001st001 hgtest]# cfghsmfs TSM_HSM_DEMO TSM_SYDNEY

EFSSG1000I The command completed successfully.

[root@1300038.mgmt001st001 hgtest]# lshsmstatus

Global Status

Node	Daemons (Rec-#)	Recall (Migr-#)	Migrate	Failover (Owned)	Filesystem(s)
------	--------------------	--------------------	---------	---------------------	---------------

=====
=====

mgmt001st001	active	active(00)	active(00)	active	hgtest,TSM_HSM_DEMO
--------------	--------	------------	------------	--------	---------------------

=====
=====

mgmt002st001	active	active(00)	active(00)	active	
--------------	--------	------------	------------	--------	--

Filesystem	Running	Mount			
Device	Status	Recall	Migrate	Point	Status

=====
TSM_HSM_DEMO active 0 0 /ibm/TSM_HSM_DEMO OK
=====

hgtest active 0 0 /ibm/hgtest OK

EFSSG1000I The command completed successfully.

root@1300038.mgmt001st001 hgtest]# net registry enumerate

HKLM/software/ibm/sonas/hsm/managedFS

Valuename = 5309204517240307712

Type = REG_SZ
Value = "hgtest"

Valuename = 5309219331639476224
Type = REG_SZ
Value = "TSM_HSM_DEMO"

```
[root@1300038.mgmt001st001 hgtest]# dsmmigrate /ibm/TSM_HSM_DEMO/xx/test.tar
```

```
IBM Tivoli Storage Manager  
Command Line Space Management Client Interface  
Client Version 6, Release 3, Level 1.2  
Client date/time: 2014-11-14 22:50:22  
(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.
```

```
[root@1300038.mgmt001st001 hgtest]# dsmmigrate /ibm/TSM_HSM_DEMO/xx/test.tar
```

```
IBM Tivoli Storage Manager  
Command Line Space Management Client Interface  
Client Version 6, Release 3, Level 1.2  
Client date/time: 2014-11-14 22:50:30  
(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.
```

ANS9951I File: /ibm/TSM_HSM_DEMO/xx/test.tar has already been migrated.

```
[root@1300038.mgmt001st001 hgtest]# dsmrecall /ibm/TSM_HSM_DEMO/xx/test.tar
```

```
IBM Tivoli Storage Manager  
Command Line Space Management Client Interface  
Client Version 6, Release 3, Level 1.2  
Client date/time: 2014-11-14 22:50:45  
(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.
```

** Unsuccessful **

ANS4007E Error processing '/ibm/TSM_HSM_DEMO/xx/test.tar': access to the object is denied

```
[root@1300038.mgmt001st001 .SpaceMan]# cd /ibm/TSM_HSM_DEMO/.SpaceMan
```

```
[root@1300038.mgmt001st001 .SpaceMan]# ls  
miFSState hsmfsconfig.pid logdir progress.scout reserved  
fslock.pid hsmfsconfig.xml migratelock.pid reconcile.pid status
```

```
[root@1300038.mgmt001st001 .SpaceMan]# rm dmiFSState
```

```
[root@1300038.mgmt001st001 .SpaceMan]# cd /etc/adsm/SpaceMan/config/
```

```
[root@1300038.mgmt001st001 config]# ls -la
```

```
total 32  
drwxrwsr-x 2 bin bin 4096 Nov 14 22:52 .  
drwxrwsr-x 4 bin bin 4096 Nov 14 22:52 ..  
-rw-rw---- 1 bin bin 164 Nov 14 22:49 dmiFSGlobalState  
-rw-r--r-- 1 bin bin 8 Nov 14 22:49 dmiFSGlobalState.pid  
-rw-r--r-- 1 root bin 1362 Nov 14 22:49 DSMNodeSet  
-rw-r--r-- 1 bin bin 8 Nov 14 22:52 DSM.pid  
-rw-r--r-- 1 root bin 4 Nov 14 22:49 DSMSDRVersion  
-rw-r--r-- 1 bin bin 2 Nov 14 22:52 instance  
-rw----- 1 root bin 0 Nov 15 2012 msgqueue.0  
-rw----- 1 root bin 0 Nov 15 2012 msgqueue.1  
-rw----- 1 root bin 0 Nov 15 2012 msgqueue.2  
-rw----- 1 root bin 0 Nov 15 2012 msgqueue.3
```

```
[root@1300038.mgmt001st001 config]# rm dmiFSGlobalState*
```

```
[root@1300038.mgmt001st001 config]# dsmreconcile -Detail /ibm/hgtest
```

IBM Tivoli Storage Manager

Command Line Space Management Client Interface

Client Version 6, Release 3, Level 1.2

Client date/time: 2014-11-14 22:53:33

(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.

Reconciling '/ibm/hgtest' file system:

Querying the TSM server for a list of migrated files...

Received 4 entries

Expiring migrated files on the server...

0 files exceeded the 0 day expiration period; removed from server

0 files newly marked for expiration

0 files previously marked for expiration

ANS9250I File system '/ibm/hgtest' reconciliation completed.

```
[root@1300038.mgmt001st001 config]# ls -ltr
```

total 24

-rw----- 1 root bin 0 Nov 15 2012 msgqueue.3

-rw----- 1 root bin 0 Nov 15 2012 msgqueue.2

-rw----- 1 root bin 0 Nov 15 2012 msgqueue.1

-rw----- 1 root bin 0 Nov 15 2012 msgqueue.0

-rw-r--r-- 1 root bin 1362 Nov 14 22:49 DSMNodeSet

-rw-r--r-- 1 root bin 4 Nov 14 22:49 DSMSDRVersion

-rw-r--r-- 1 bin bin 2 Nov 14 22:53 instance

-rw-r--r-- 1 bin bin 8 Nov 14 22:53 DSM.pid

-rw-r--r-- 1 bin bin 8 Nov 14 22:53 dmiFSGlobalState.pid

-rw-rw---- 1 bin bin 164 Nov 14 22:53 dmiFSGlobalState

```
[root@1300038.mgmt001st001 config]# dsmreconcile -Detail /ibm/TSM_HSM_DEMO
```

IBM Tivoli Storage Manager

Command Line Space Management Client Interface

Client Version 6, Release 3, Level 1.2

Client date/time: 2014-11-14 22:53:47

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Reconciling '/ibm/TSM_HSM_DEMO' file system:

Querying the TSM server for a list of migrated files...

Received 1 entries

Expiring migrated files on the server...

0 files exceeded the 0 day expiration period; removed from server

0 files newly marked for expiration

0 files previously marked for expiration

ANS9250I File system '/ibm/TSM_HSM_DEMO' reconciliation completed.

```
[root@1300038.mgmt001st001 .SpaceMan]# dsmrecall /ibm/TSM_HSM_DEMO/xx/test.tar
```

IBM Tivoli Storage Manager

Command Line Space Management Client Interface

Client Version 6, Release 3, Level 1.2

Client date/time: 2014-11-14 22:54:43

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```
[root@1300038.mgmt001st001 .SpaceMan]# dsmrecall /ibm/TSM_HSM_DEMO/xx/test.tar
```

IBM Tivoli Storage Manager

Command Line Space Management Client Interface

Client Version 6, Release 3, Level 1.2

Client date/time: 2014-11-14 22:54:56
(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.
ANS9101E No migrated files matching '/ibm/TSM_HSM_DEMO/xx/test.tar' were found.

[root@1300038.mgmt001st001 .SpaceMan]# lshsmstatus

```
Global Status
Node      Daemons Recall  Migrate  Failover Filesystem(s)
          (Rec-#) (Migr-#) (Owned)
=====
mgmt001st001 off   active(00) active(00) active  hgtest,TSM_HSM_DEMO
=====
mgmt002st001 active active(00) active(00) active
Filesystem Running Mount
Device Status Recall Migrate Point Status
=====
TSM_HSM_DEMO active 0 0 /ibm/TSM_HSM_DEMO OK
=====
hgtest active 0 0 /ibm/hgtest OK
EFSSG1000I The command completed successfully.
```

[root@1300038.mgmt001st001 .SpaceMan]# dsmmigfs RESTART

```
IBM Tivoli Storage Manager
Command Line Space Management Client Interface
Client Version 6, Release 3, Level 1.2
Client date/time: 2014-11-14 22:58:06
(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.
TSM The node failover option is now disabled.
TSM The node failover option is now enabled.
```

[root@1300038.mgmt001st001 config]# ps -ef|grep dsmrec

```
root 2915551 1510499 0 23:23 pts/2 00:00:00 grep dsmrec
root 2961974 1 0 Nov07 ? 00:00:08 /usr/bin/dsmrecalld
root 2961986 1 0 Nov07 ? 00:00:07 /usr/bin/dsmrecalld
root 2961998 1 0 Nov07 ? 00:00:08 /usr/bin/dsmrecalld
root 3154333 1 0 Nov07 ? 00:00:08 /usr/bin/dsmrecalld
root 3162580 1 0 Nov07 ? 00:00:07 /usr/bin/dsmrecalld
root 3162610 1 0 Nov07 ? 00:00:07 /usr/bin/dsmrecalld
root 3162812 1 0 Nov07 ? 00:00:07 /usr/bin/dsmrecalld
root 3162844 1 0 Nov07 ? 00:00:07 /usr/bin/dsmrecalld
```

[root@1300038.mgmt001st001 config]# kill 2961974 2961986 2961998 3154333 3162580 3162610 3162812 3162844

[root@1300038.mgmt001st001 config]# ps -ef|grep dsmrec

```
root 2918731 1 0 23:24 ? 00:00:00 dsmrecalld
root 2918732 1 0 23:24 ? 00:00:00 dsmrecalld
root 2919665 1510499 0 23:24 pts/2 00:00:00 grep dsmrec
root 2961974 1 0 Nov07 ? 00:00:08 /usr/bin/dsmrecalld
root 2961986 1 0 Nov07 ? 00:00:07 /usr/bin/dsmrecalld
root 2961998 1 0 Nov07 ? 00:00:08 /usr/bin/dsmrecalld
root 3154333 1 0 Nov07 ? 00:00:08 /usr/bin/dsmrecalld
root 3162580 1 0 Nov07 ? 00:00:07 /usr/bin/dsmrecalld
root 3162610 1 0 Nov07 ? 00:00:07 /usr/bin/dsmrecalld
root 3162812 1 0 Nov07 ? 00:00:07 /usr/bin/dsmrecalld
root 3162844 1 0 Nov07 ? 00:00:07 /usr/bin/dsmrecalld
```

```
[root@1300038.mgmt001st001 config]# kill -9 2961974 2961986 2961998 3154333 3162580 3162610 3162812 3162844
```

```
[root@1300038.mgmt001st001 config]# ps -ef|grep dsmrec  
root 2921748 1510499 0 23:24 pts/2 00:00:00 grep dsmrec
```

```
[root@1300038.mgmt001st001 config]# ps -ef|grep dsmrec  
root 2924237 1510499 0 23:24 pts/2 00:00:00 grep dsmrec
```

```
[root@1300038.mgmt001st001 config]# lshsmstatus
```

```
Global Status  
Node      Daemons Recall  Migrate  Failover Filesystem(s)  
          (Rec-#) (Migr-#)      (Owned)  
=====
```

Node	Daemons	Recall	Migrate	Failover	Filesystem(s)
mgmt001st001	off	active(00)	active(00)	active	hgtest,TSM_HSM_DEMO

```
=====
```

Node	Daemons	Recall	Migrate	Failover	Filesystem(s)
mgmt002st001	active	active(00)	active(00)	active	

```
Filesystem  Running  Mount  
Device  Status Recall Migrate Point  Status  
=====
```

Device	Status	Recall	Migrate	Point	Status
TSM_HSM_DEMO	active	0	0	/ibm/TSM_HSM_DEMO	OK

```
=====
```

Device	Status	Recall	Migrate	Point	Status
hgtest	active	0	0	/ibm/hgtest	OK

```
EFSSG1000I The command completed successfully.
```

```
[root@1300038.mgmt001st001 config]# dsmmigfs RESTART
```

```
IBM Tivoli Storage Manager  
Command Line Space Management Client Interface  
Client Version 6, Release 3, Level 1.2  
Client date/time: 2014-11-14 23:25:01  
(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.  
TSM The node failover option is now disabled.  
TSM The node failover option is now enabled.
```

```
[root@1300038.mgmt001st001 config]# ps -ef|grep dsmrec  
root 2941732 1 0 23:25 ? 00:00:00 dsmrecalld  
root 2941783 2941732 0 23:25 ? 00:00:00 dsmrecalld  
root 2941784 2941732 0 23:25 ? 00:00:00 dsmrecalld  
root 2943728 1510499 0 23:25 pts/2 00:00:00 grep dsmrec
```

```
[root@1300038.mgmt001st001 config]# lshsmstatus
```

```
Global Status  
Node      Daemons Recall  Migrate  Failover Filesystem(s)  
          (Rec-#) (Migr-#)      (Owned)  
=====
```

Node	Daemons	Recall	Migrate	Failover	Filesystem(s)
mgmt001st001	active	active(00)	active(00)	active	hgtest,TSM_HSM_DEMO

```
=====
```

Node	Daemons	Recall	Migrate	Failover	Filesystem(s)
mgmt002st001	active	active(00)	active(00)	active	

```
Filesystem  Running  Mount  
Device  Status Recall Migrate Point  Status  
=====
```

Device	Status	Recall	Migrate	Point	Status
TSM_HSM_DEMO	active	0	0	/ibm/TSM_HSM_DEMO	OK

```
=====
```

```
hgtest active 0 0 /ibm/hgtest OK
EFSSG1000I The command completed successfully.
```

```
[root@1300038.mgmt001st001 config]# lshsmstatus
```

```
Global Status
Node      Daemons Recall  Migrate  Failover Filesystem(s)
          (Rec-#) (Migr-#) (Owned)
=====
mgmt001st001 active active(00) active(00) active hgtest,TSM_HSM_DEMO
=====
mgmt002st001 active active(00) active(00) active
Filesystem Running Mount
Device Status Recall Migrate Point Status
=====
TSM_HSM_DEMO active 0 0 /ibm/TSM_HSM_DEMO OK
=====
hgtest active 0 0 /ibm/hgtest OK
EFSSG1000I The command completed successfully.
```

```
[root@1300038.mgmt001st001 config]# ps -ef|grep dsmrec
```

```
root 2941732 1 0 23:25 ? 00:00:00 dsmrecalld
root 2941783 2941732 0 23:25 ? 00:00:00 dsmrecalld
root 2941784 2941732 0 23:25 ? 00:00:00 dsmrecalld
root 2948812 1510499 0 23:26 pts/2 00:00:00 grep dsmrec
```

```
[root@1300038.mgmt001st001 config]# dsmreconcile -Detail /ibm/TSM_HSM_DEMO
```

```
IBM Tivoli Storage Manager
Command Line Space Management Client Interface
Client Version 6, Release 3, Level 1.2
Client date/time: 2014-11-14 23:26:27
(c) Copyright by IBM Corporation and other(s) 1990, 2013. All Rights Reserved.
Reconciling '/ibm/TSM_HSM_DEMO' file system:
Querying the TSM server for a list of migrated files...
Received 1 entries
Expiring migrated files on the server...
0 files exceeded the 0 day expiration period; removed from server
0 files newly marked for expiration
0 files previously marked for expiration
ANS9250I File system '/ibm/TSM_HSM_DEMO' reconciliation completed.
```

```
[root@1300038.mgmt001st001 config]# dsmrecall /ibm/TSM_HSM_DEMO/xx/test.tar
```

```
IBM Tivoli Storage Manager
Command Line Space Management Client Interface
Client Version 6, Release 3, Level 1.2
Client date/time: 2014-11-14 23:26:44
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ANS9101E No migrated files matching '/ibm/TSM_HSM_DEMO/xx/test.tar' were found.
```

```
[root@1300038.mgmt001st001 config]# dsmrecall /ibm/hgtest/a/aa/
```

```
IBM Tivoli Storage Manager
Command Line Space Management Client Interface
Client Version 6, Release 3, Level 1.2
Client date/time: 2014-11-14 23:27:01
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```

```
[root@1300038.mgmt001st001 config]# dsmmigrate /ibm/TSM_HSM_DEMO/xx/test.tar
```

IBM Tivoli Storage Manager
Command Line Space Management Client Interface
Client Version 6, Release 3, Level 1.2
Client date/time: 2014-11-14 23:27:20
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[root@1300038.mgmt001st001 config]# dsmrecall /ibm/TSM_HSM_DEMO/xx/test.tar

IBM Tivoli Storage Manager
Command Line Space Management Client Interface
Client Version 6, Release 3, Level 1.2
Client date/time: 2014-11-14 23:27:29
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[root@1300038.mgmt001st001 config]# dsmmigrate /ibm/TSM_HSM_DEMO/xx/test.tar

IBM Tivoli Storage Manager
Command Line Space Management Client Interface
Client Version 6, Release 3, Level 1.2
Client date/time: 2014-11-14 23:27:42
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[root@1300038.mgmt001st001 config]# dsmrecall /ibm/TSM_HSM_DEMO/xx/test.tar

IBM Tivoli Storage Manager
Command Line Space Management Client Interface
Client Version 6, Release 3, Level 1.2
Client date/time: 2014-11-14 23:27:50
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[root@1300038.mgmt001st001 config]# dsmmigrate /ibm/hgtest/a/aa/

IBM Tivoli Storage Manager
Command Line Space Management Client Interface
Client Version 6, Release 3, Level 1.2
Client date/time: 2014-11-14 23:28:09
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[root@1300038.mgmt001st001 config]# dsmrecall /ibm/hgtest/a/aa/

IBM Tivoli Storage Manager
Command Line Space Management Client Interface
Client Version 6, Release 3, Level 1.2
Client date/time: 2014-11-14 23:28:17
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[root@1300038.mgmt001st001 config]# dsmmigrate /ibm/hgtest/a/aa/

IBM Tivoli Storage Manager
Command Line Space Management Client Interface
Client Version 6, Release 3, Level 1.2
Client date/time: 2014-11-14 23:29:02
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