Washington Systems Center - Storage

Accelerate with IBM Storage: Copy Services Manager 6.2.9 – What's New!

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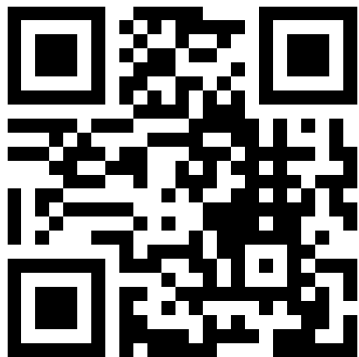
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Accelerate with IBM Storage Survey

Please take a moment to share your feedback with our team!

You can access this 5 question survey via Menti.com with code 78 81 27 or

Direct link https://www.menti.com/mkg7a2x6q8

Or

QR Code

Session objectives

- Quick Product overview

- What's New in 6.2.9

IBM Copy Services Manager

Simplify Your Replication

Easy to install.   Easy to Setup.   Easy to Manage.

Provides Automation for Advanced Copy Services

Single Point of Control Across Environment

Designed to Scale For Thousands of Relationships

RPO Monitoring and Historical Reporting

One Step Recovery

Simplifies the recovery process in multi-site replication, protecting customer data while keeping costs down

Provides support for both distributed and mainframe data
Supports DS8880 and Spectrum storage systems

Installable across all major platforms:
Windows, Linux, AIX, z/OS, Linux for z Systems
And now pre-installed on the DS8000 HMC

Disaster Recovery and High Availability

Manages z Systems HyperSwap and supports Power HA HyperSwap to create highly available solutions in Metro Mirror and Metro Global Mirror Environments

Practice As You Would Recover with CSM Practice Volumes

Issue the 'Flash' command to back up your remote site and automatically restart replication so that you can practice while maintaining DR capabilities

Protect Your Data

Warning Prompts
User Roles
Site Awareness
Dynamic Images
Event and Threshold Alerts

IBM

What's New in IBM Copy Services Manager V6.2.9

Provide Warning on Metro Mirror relationships when only a single logical path is established

Enhance failure message if user password expires on connected DS8000

Added command to discover existing DS8000 FlashCopy relationships

Include all necessary files when creating a backup of the Copy Services Manager server

Support disabling Metro Mirror mode on sessions that should only run Global Copy

Support allowing a session to display Normal status when in Global Copy mode

Externalize REST API

Support –synchronous option on CLI runtask command

Support Stop on Drained command

Support SVC/FlashSystem consistency protection feature

Officially support FlashSystem 9200 systems

Provide Warning on Metro Mirror relationships when only a single logical path is established

- [RFE 112047](#) – Customer request to provide warning when Metro Mirror relationships only have a single logical path established

- CSM will only establish a single logical path if no paths have been established prior to the Start and no port pairing defined in the CSV file. Multiple logical paths are needed for redundancy in enterprise environments

- CSM will now periodically check to see if only a single logical path exists for relationships running in Metro Mirror mode

- New **IWNR2767W** status message will appear on the session and in the console, and the session status will go to Warning, if only a single path is found.

- Customer can manually establish a second path, or modify the port pairing CSV and reissue the start the session to clear the warning

- If customer chooses to ignore the recommendation and wishes to use a single logical path, they can disable the feature by adding the following property to the CSM server properties

  `com.ibm.csm.server.disablePathWarning=true`

Enhance failure message if user password expires on connected DS8000

- [RFE 128226](#) – Customer request to provide a better message when a connection to a DS8000 system is failing due to an expired password

- Message IWNH1650E today provides a set of possible reason codes but today reason code 3 handles all cases where the user id and password failed to authenticate to the storage system

- In 6.2.9 three new reason codes have been added to provide better insight as to the reason for the disconnect. This will allow customers to self diagnose the reason for the disconnect and fixed the issue without having to contact support
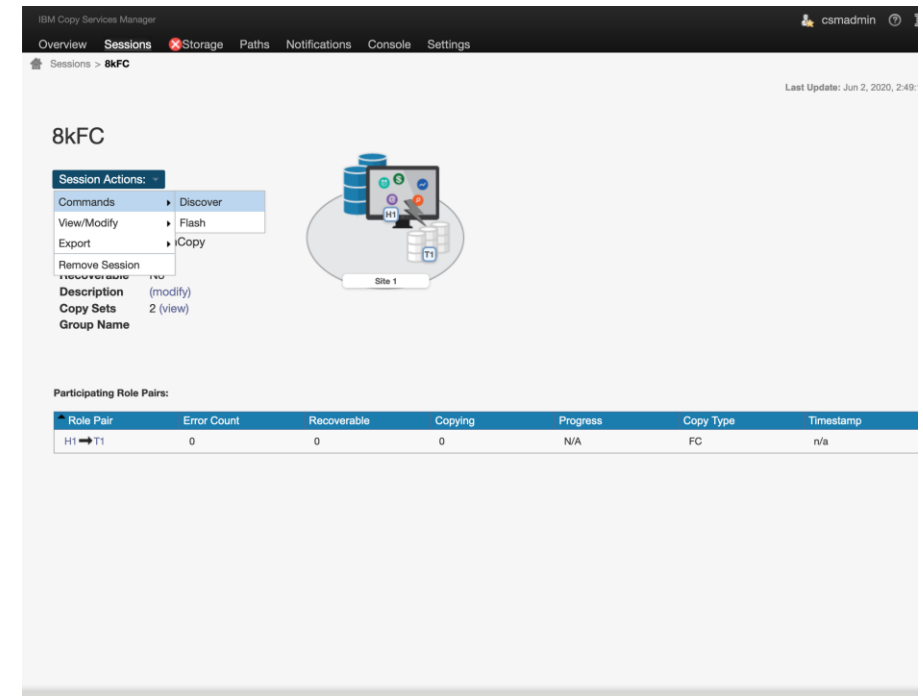
```
31 - There was an authentication failure. The username or password that was used to connect to the
cluster is invalid.
32 - There was an authentication failure. The username that was used to connect to the cluster does
not exist.
33 - There was an authentication failure. The account is locked or the password has expired and needs
to be reset.
```
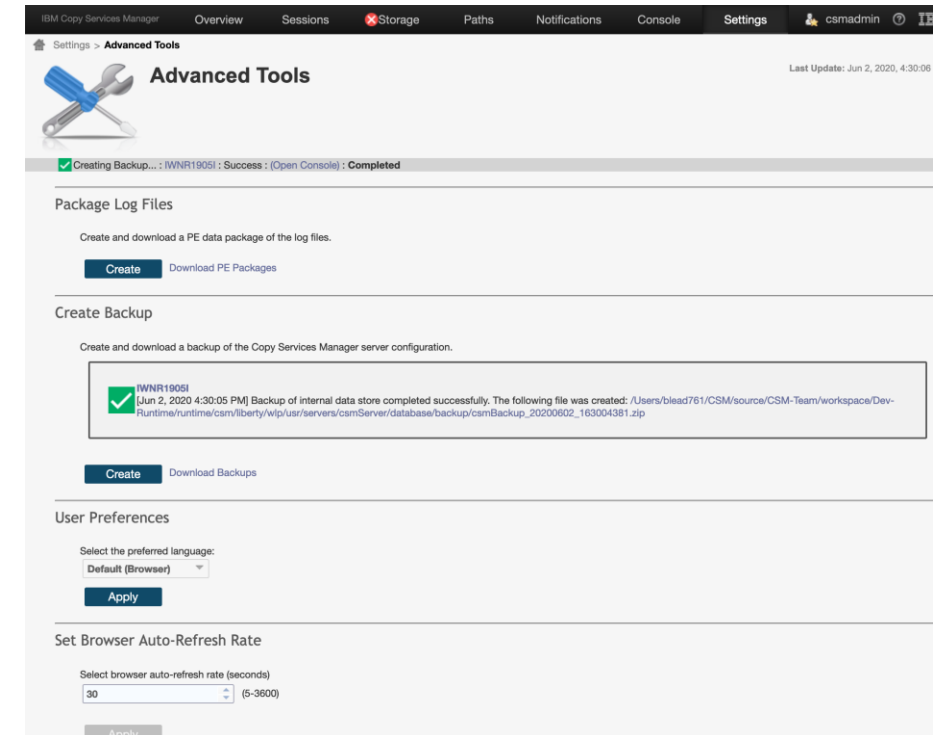
Added command to discover existing DS8000 FlashCopy Relationships

- [RFE 139330](#) – Customer request to assimilate existing FlashCopy relationships from the DS8000

- When using Remote Pair FlashCopy a CSM session doesn't exist for the FlashCopy pairs at the remote site. Customer needed a way to switch sites and then take over the existing flashes for remote pair FlashCopy in the opposite direction.

- New 'Discover' command available on FlashCopy session type in the Defined or Target Available state, which will query the hardware and set all pairs to Target Available that are found on the hardware

- The options on the FlashCopy session on the server will be used for the next Flash command, despite what the hardware may have already used for the relationship.

- If incremental is not set on the session, the next flash will terminate and reflash the pairs anyway. If incremental is set on the session but the assimilated pairs have not been flashed yet, then the session will delete and then reestablish the pair on the first flash to set the incremental bit.

- If some of the assimilated pairs were flashed with incremental and some weren't, it may be necessary to remove the copy sets from the session to delete them from the hardware and re-add in order to set the incremental bit accordingly on the hardware

Include all necessary files when creating a backup of the Copy Services Manager server

- Today you can backup a CSM server from the Advanced Tools panel. This backup ONLY creates a zip file including the contents of the database that can be used to restore or migrate CSM to a new server such that all session and connection information is applied to the new server

- However, there are a number of other files on the server that may get modified which are not picked up in the backup when installing on another server

- In CSM 6.2.9, the backup and autobackup zip files will now contain not only the database backup but also all files that might have been modified in order to make the server migration complete. These files includes the following

    - All property files defining special properties for the server
    - The jvm.options file that defines JVM characteristics
    - Authentication related files for basic authentication and LDAP authentication
    - Certificate files for secure connections to z/OS and storage systems

- The CSM 6.2.9 installer can support a backup zip from a pre-6.2.9 release or a backup zip from a 6.2.9 or future installation. If only the database files are in the backup then only the database will be restored. If multiple files are in the backup then all files will be restored.

- The z/OS installation does not support using a backup zip today, however the zip could be manually extracted to the correct folders for an already installed z instance of CSM

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Support disabling Metro Mirror mode on sessions that should only run Global Copy

- [RFE 142392](#) – Customer requested a session that would only support Global Copy as accidentally starting in Metro Mirror mode could cause application impact

- Instead of a new session type the 6.2.9 release provides a way to disable all Metro Mirror starts for the Metro Mirror Failover/Failback session type

- In the Server Properties add the following property
  `csm.disable.mm.mode.`*`sessionname`*`=true`
  where session_*name* is the name of the session where all spaces are replaced with "_"

     Example:
     `csm.disable.mm.mode.My_MM.=true`
     where 'My MM' is the name of the session that I want to disable MM mode on

     Replace all spaces with "_" in session name. Property is case sensitive!!!

- When the property is set only StartGC H1->H2 or StartGC H2->H1 will show as options

- NOTE: The Suspend command while in GC mode will still drive the pairs to MM and freeze in order to guarantee consistency. Stop will suspend without MM/freeze without consistency

Support allowing a session to display Normal status when in Global Copy mode

- [RFE 142321](#) – Customer requested the ability for a Metro Mirror Failover/Failback session running in GC mode to display a normal status instead of Warning, as they consider GC mode the good state

- Customer can now add the following property, to specify a threshold for the percent complete on the H1-H2 role pair when in GC mode

  ```
  csm.percent.complete.warning.threshold=80
  ```

- If the percent complete is below the threshold the session will display Warning.

- If the percent complete is above the threshold the session will display Normal.

- If the value is <=0 then the feature is disabled and the session will show Warning in GC mode

- When the property is specified and the session is below the threshold the session will also display the IWNR2768W status message

  IWNR2768W [May 21, 2020 3:43:49 PM] Session MM and role pair H1-H2 is at or below the warning threshold of x percent complete.

- Feature only works on MM Failover/Failback sessions that were started in GC mode

Externalize REST API

- [RFE 139014](#) – Customers have requested the ability to manage CSM actions through RESTapi calls

- A RESTful (Representational State Transfer) API is a platform independent means by which to initiate create, read, update, and delete operations to the Copy Services Manager server. These operations are initiated with the HTTP commands: POST, GET, PUT, and DELETE.

- CSM has had a RESTapi but it was not externalized and only used internally by IBM products

- In CSM 6.2.9, the KnowledgeCenter for CSM will formally provide documentation for the CSM RESTapi in the form of Swagger interactive documentation

- By using the RESTful API for CSM, customers can automate actions to CSM sessions or scheduled tasks integrated in RESTful actions to other products/systems in the environment

IBM Copy Services Manager - Server 6.2.x

REST API documentation for IBM Copy Services Manager

The RESTful (Representational State Transfer) API is a platform independent means by which to initiate create, read, update, and delete operations to the Copy Services Manager server. These operations are initiated with the HTTP commands: POST, GET, PUT, and DELETE.

The RESTful API is intended for programmatically managing a replication environment managed by Copy Services Manager. You can use the RESTful API with a CURL command or through standard Web browsers.

Copy Services Manager has externalized a majority of the APIs necessary to programmatically manage actions on the server through a RESTful interface. If there are any actions missing, please open a Request For Enhancement (RFE) so that the missing APIs can be addressed. Open an RFE on CSM

URL Structure

The URL structure for an operation is *https://ip_address:port_number/service/...* where ip_address is the IP address of the Copy Services Manager server, port_number is the 3-4 digit port number for the server, and service is defined by the type of request service which can be found in the RESTful API command documentation.
NOTE: The port may be optiona for HMC installations.

Security

Copy Services Manager supports both `Basic Authentication` as well as `access token` authentication. To use the REST API, you must either use `Basic Authentication` or generate an `access token` with `username` and `password`.

HardwareService	>
SessionService	⌄

GET	/sessions	↵
GET	/sessions/scheduledtasks	
POST	/sessions/scheduledtasks/{taskid}	
DELETE	/sessions/{name}	
GET	/sessions/{name}	
POST	/sessions/{name}	
PUT	/sessions/{name}	
GET	/sessions/{name}/availablecommands	
GET	/sessions/{name}/backups/{role}/{backupid}	
POST	/sessions/{name}/backups/{role}/{backupid}	

Support –synchronous option on CLI runtask command

- Today the csmcli provides the ability to manually run a CSM Scheduled Task using the runtask command

- This allows customers to script via batch or other means a call to a scheduled tasks that runs one or more commands to a session or multiple sessions, thus adding additional automation to their environment

- Prior to 6.2.9 however, the runtask command simply kicked off the task which ran in the background, as the list of actions in the task could take a long time. But by running the task in the background it made it difficult to script subsequent actions after the call to runtask if the task had to complete before the subsequent actions could be called

- In the 6.2.9 release runtask now has a –synchronous parm that can be specified on the call.

- The –synchronous parm tells the CLI to wait until all actions in the called task have completed before returning that the task was completed

```
csmcli> help runtask
runtask

Use the runtask command to run a specified scheduled task.

Tip: To list all of the scheduled tasks use the lstasks command.

Syntax

>>-runtask--+-------+--+---------+--+----------------------+->
            +--help-+  '- -quiet-'  '- -synchronous--+-yes-+-'
            +--h----+                                '-no--'
            '--?----'

>--+-task_id-+------------------------------------------><
   '- -----------'

Parameters

-help | -h | -?
   Lists help for the command. If you specify additional parameters and
   arguments, those parameters and arguments are ignored.

Press Enter To Continue...

-quiet
   Suppresses the confirmation prompt for this command. This flag
   answers yes to all confirmation prompts.

-synchronous  { yes | no }
   Indicates that the task will run immediately but not return control to
   the CLI until the task is complete.  Use this option when needing
   to know the results of the task in order to perform subsequent actions
   such as via a batch job.  Valid values are yes or no. The default is no.

task_id  | -
   Specifies the id for the scheduled task that will be run.


Example: Starting a scheduled task 12

The following command runs the scheduled task with a task_id of 12.

csmcli> runtask -quiet 12

The following output is returned:

Press Enter To Continue...

IWNR2208I [Aug 14, 2018 5:56:47 PM] Forcing the scheduled task Backup SGC1 to run now.
```
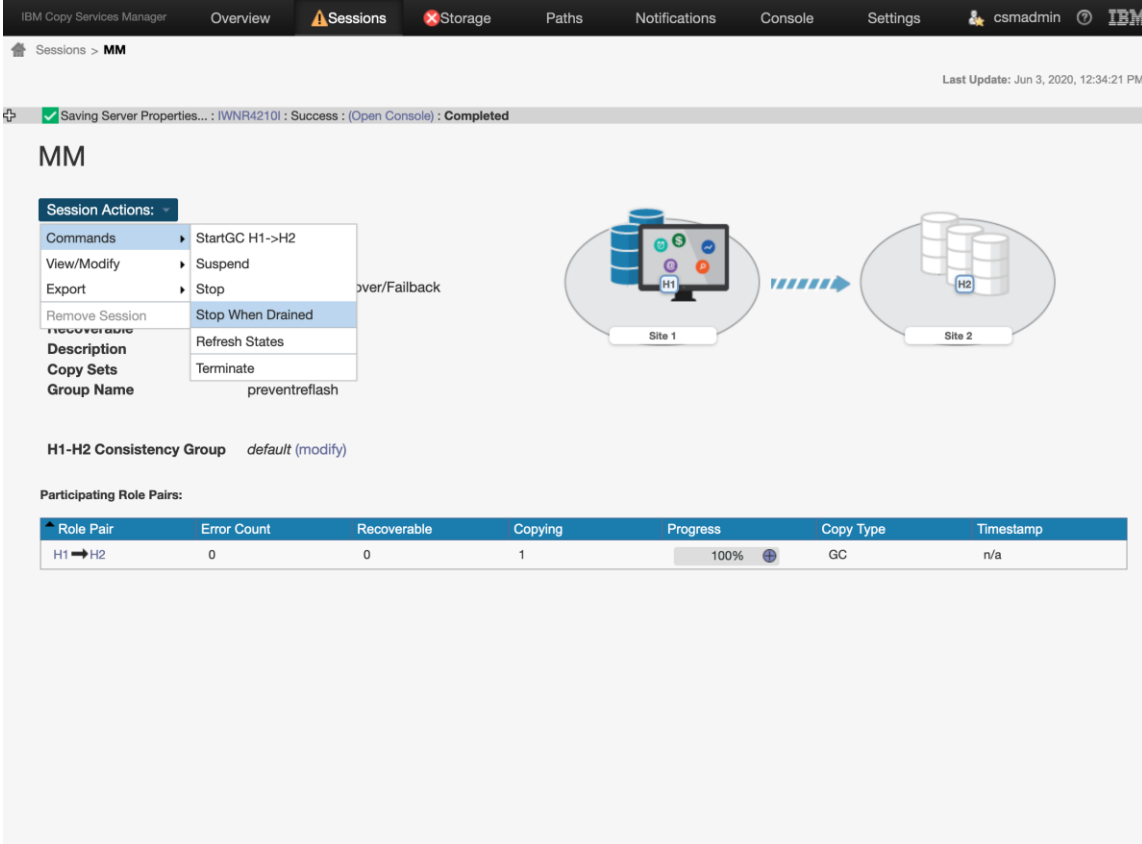
Support Stop on Drained command

- [RFE 142440](#) – Customers have requested a way to automatically stop replication for certain sessions when running in GC mode once all data has drained to the secondary

- CSM scheduled tasks have a wait for percent complete action however this is based on the percent complete from the asynchronous query to the hardware.

- If the GC relationship is cascaded off another relationship, it's necessary to query the hardware to ensure that data has drained

- In 6.2.9, a Stop When Drained command has been added to the following sessions when running in GC mode. When issued the command will force a query to the hardware for all pairs and then stop replication once all pairs indicated they have no out of sync tracks

  - Metro Mirror Failover/Failback
  - Global Mirror Failover/Failback
  - Global Mirror Either Direction

Support SVC/FlashSystem consistency protection feature

- [RFE 117871](#) – Customers have requested official support for the SVC/FlashSystem consistency protection feature

- Consistency protection is a feature on SVC based systems for MM and GM relationships that uses change volumes to automatically create a consistent point at the remote site that is used in the event of a disaster during resynchronization, ensuring consistent recover at the remote site

- Prior to 6.2.9, CSM only supported change volumes for Global Mirror. Starting with 6.2.9 CSM now supports a Metro Mirror with Change volumes session type as well.

- Both the MMCV ad GMCV session types will automatically use consistency protection when restarting a session in the original direction

- For both MMCV and GMCV the session will go immediately to Prepared on a restart as the relationships can be recovered consistently

- For MMCV, the session will display status message IWNR2751W and enter a Warning state when the freeze time is greater than 0, indicating that while Prepared, the pairs are not yet full sync'd. When the warning goes away the resynchronization has completed.

Officially support FlashSystem 9200 systems

- The 6.2.9 release adds official support for the FlashSystem 9200 family

- FlashSystem 9200 systems should show as FlashSystem 9200 when connecting and discovering volumes

- Connect to a FlashSystem 9200 using the Add Storage System wizard and selecting the FlashSystem Spectrum Virtualize storage type

Meet the FlashSystem 9200 family

These systems are simply…

IBM Spectrum Virtualize

IBM Storage Insights

Fast Up to 18M IOPS and as little as 70μs latency in a single-image clustered system

Efficient configurable data reduction

Operationally resilient
2 & 3-site replication, enhanced HA, HyperSwap

Cyber resilient air-gap data copies

Flexible
SCM, IBM FlashCore, Flash

Interoperable
Virtualization & management of over 500 heterogeneous storage systems

FlashSystem 9200

FlashSystem 9200R

These systems are simple…
to configure
to monitor
to support
to secure
to connect to the cloud
to scale
to tier
to integrate
to orchestrate
to protect
to acquire
to upgrade

Reference Material

- CSM Log gathering DCF doc (coming soon) – Useful for tailoring log collection for what support needs to see

- CSM Support Portal - https://www.ibm.com/mysupport/s/topic/0TO0z000000R6LoGAK/copy-services-manager?language=en_US&productId=01t0z0000076xpUAAQ

- CSM online Support Matrix - https://www.ibm.com/support/pages/node/690685

- CSM Latest Downloads - https://www.ibm.com/support/pages/node/690791

- CSM Flashes Alerts and Bullentins - https://www-945.ibm.com/systems/support/myview/subscription/css.wss/view/S155190b5070

- Knowledge Center – http://www.ibm.com/support/knowledgecenter/SSESK4/csm_kcwelcome.html

- RFE Community - https://www.ibm.com/developerworks/rfe/execute?use_case=changeRequestLanding&BRAND_ID=352&PROD_ID=1467&x=19&y=22

- Youtube channel - https://www.youtube.com/channel/UC2KaP7qpv4Z9yJ75Yiol-pA