



Washington Systems Center - Storage

**Accelerate with IBM Storage:
Copy Services Manager Update /
Safeguarded Copy Demo**



Randy Blea, Copy Services Manager Architect, Craig Gordon, WSC

Accelerate with IBM Storage Webinars

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Washington Systems Center – Storage experts cover a variety of technical topics.

Audience: Clients who have or are considering acquiring IBM Storage solutions. Business Partners and IBMers are also welcome.

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2018 Webinars:

January 9 – DS8880 Easy Tier
 January 17 – Start 2018 Fast! What's New for Spectrum Scale V5 and ESS
 February 8 - VersaStack - Solutions For Fast Deployments
 February 16 - TS7700 R4.1 Phase 2 GUI with Live Demo
 February 22 - DS8880 Transparent Cloud Tiering Live Demo
 March 7 - Spectrum Storage Management, Control, Insights, Foundation
 March 15 - IBM FlashSystem A9000/R and SVC Configuration Best Practices
 March 27 - IBM FlashSystem A9000/R Technical Update
 April 12 - Introducing Spectrum NAS - The Newest Member in the Spectrum Storage Family
 April 26 - TS7700 Grid Configuration Changes -- Joins, Merges and Removals
 May 8 - DS8880 Technical Update
 June 7 – Economic Value of Response Time
 June 21 – Deep Dive into Spectrum Scale AFM
 June 28 - Open System Tape, What's New
 July 19 - Copy Services Manager Version 6.2.2 Technical Update
 August 2 - Back to Basics - TS7700 Concepts and Operations
 August 7 - IBM/Broadcom: Why NVMe-Over Fiber should be on your radar!
 August 30 - Transforming Traditional IT to a Multi-Cloud strategy leveraging IBM Storage

September 13 - DS8880 Technical Update
 September 20 - IBM/Broadcom SAN Extension
 September 27 – Introduction to Open Systems Tape 101
 October 2 - Copy Services Manager / Safeguarded Copy Update
 October 11 – Storage Insights & Storage Insights PRO Use Cases at the WSC
 October 18 – TS7700 usability enhancements in release 4.1.2
 December 6 - IBM Cloud Private: Containers, Private and Public Clouds with the VersaStack Solution
 December 13 - **Copy Services Manager Update and DS8880 Safeguarded Copy Demo – Register Here:**
<https://ibm.webex.com/ibm/onstage/g.php?MTID=ed2a74714db5806b55ebfe157792a4ac4>
 December 18 - **IBM FlashSystem A9000/R Technical Update – Register Here:**
<https://ibm.webex.com/ibm/onstage/g.php?MTID=e6bf565080003a582b51d7840a335ab73>



Agenda

- Copy Services Manager 6.2.4 Update – Randy Blea
- DS8880 Safeguarded Copy Backup Demo – Craig Gordon



Copy Services Manager 6.2.4 Update

CSM Request to show more sessions on Session Overview

- CSM Session Overview panel previously only showed a subset of sessions
- Some customers manages a lot of sessions in CSM
- Based on customer requests, the session overview table will now fit to the window of the browser, using all the available space and displaying more sessions

IBM Copy Services Manager Overview Sessions Storage Paths Console Settings csmadmin IBM

Sessions

1 severe
0 warning
0 normal

Create Session... Session Actions: Filter...

Name	Group Name	Status	State	Type	Active H...	Active Site	Recover...	Progress	HyperSwap	Hardware
8kMM	hyperswapdemo	Inactive	Defined	MM	H1	New	No	N/A		
MGM		Inactive	Defined	MGM	H1	Site 1	No	N/A	No	
CSM_XIV2		Inactive	Defined	MM	H1	Site 1	No	N/A		
CSM_XIV1		Inactive	Defined	MM	H1	Site 1	No	N/A		
MGMP		Inactive	Defined	MGMP	H1	Site 1	No	N/A		
FS9100-FC	FS9100	Inactive	Defined	FC	H1	Site 1	No	N/A		
MM-GM		Inactive	Defined	MT-MM-GM	H1	Site 1	No	N/A		
SGC1	SGC_demo	Inactive	Defined	Backup	H1	Site 1	No	N/A		
FS9100-MM		Inactive	Defined	MM	H1	Site 1	No	N/A		
SVCF		Inactive	Defined	FC	H1	Site 1	No	N/A		
GM		Inactive	Defined	GM	H1	Site 1	No	N/A		
FS9100-GMCV		Inactive	Defined	GMCV	H1	Site 1	No	N/A		
A9000-Snap		Inactive	Defined	Snap	H1	Site 1	No	N/A		

Last Update: Dec 10, 2018 11:44:46 AM

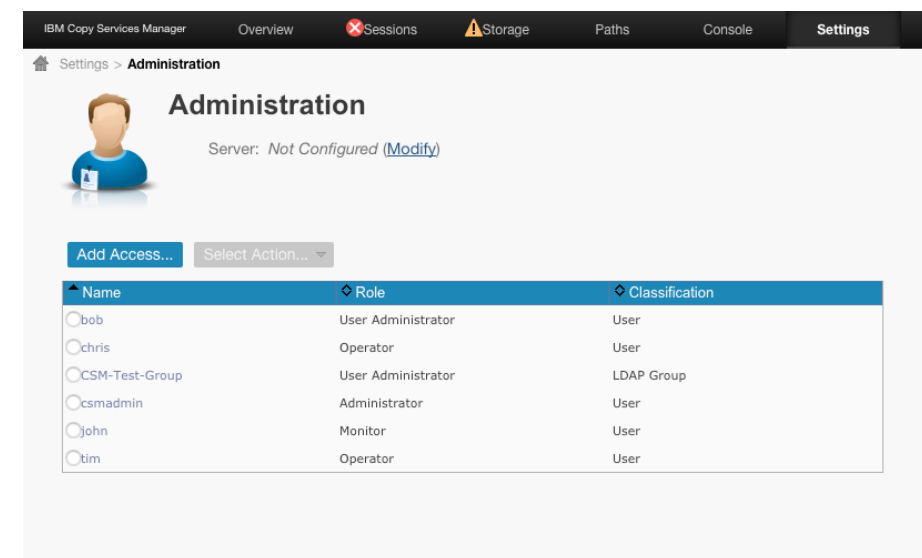
CSM Performance Improvements in non Incremental FlashCopy sessions

- When a FlashCopy session does not have the Incremental option checked, the relationships must be removed from the hardware before the new flash copy can be established
- CSM will automatically terminate the pairs and then reflash them so that the customer can simply issue another Flash command
- CSM threads multiple commands to the hardware in order to manage multiple LSSs for DS8000 simultaneously
- Previously it was within the individual threads that the terminate was issued prior to doing the new flash if incremental was not set, however, different LSSs may take longer to issue the terminate than others. This leads to some LSSs starting the Flash step and putting the pairs in a long busy state before other LSSs were complete with the terminate
- In 6.2.4, the terminate is separated out from the flash so that long busy for consistency is not started until all the pairs have completed the terminate



New CSM User Administrator Role

- In 6.2.4, CSM has added a new user role to the set of user roles defined for the server
- The User Administrator role have the ability to modify all user permissions for the server, but cannot manage CSM sessions
- A User Administrator cannot change their own permissions
- A User Administrator can be used to provide tighter security for the CSM server
 - An external group could be set as User Administrators to prevent the main group from having too much authority with the Administrator
 - When combined with the Session Operator role, customers can configure the server so that no user has the all powerful Administrator authority unless granted the authority temporarily. Thus ensuring a process is in place to prevent unauthorized actions.

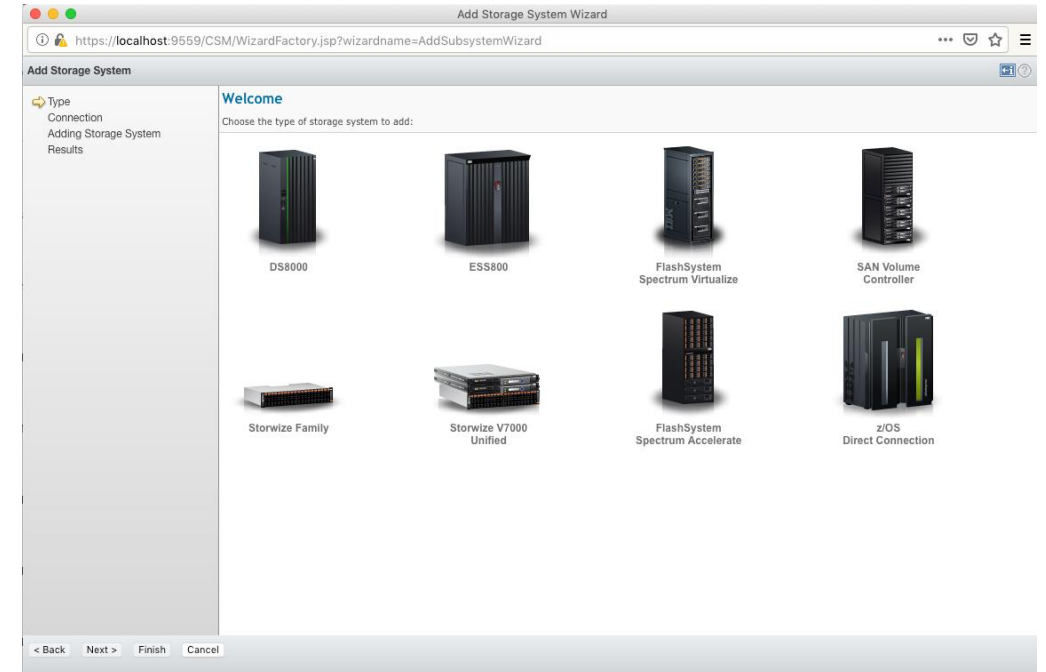


The screenshot shows the 'Administration' page in the IBM Copy Services Manager. The page title is 'Administration' and it indicates the server is 'Not Configured'. Below the title, there are buttons for 'Add Access...' and 'Select Action...'. A table lists the following users and their roles:

Name	Role	Classification
<input type="radio"/> bob	User Administrator	User
<input type="radio"/> chris	Operator	User
<input type="radio"/> CSM-Test-Group	User Administrator	LDAP Group
<input type="radio"/> csmadmin	Administrator	User
<input type="radio"/> john	Monitor	User
<input type="radio"/> tim	Operator	User

Official Support for IBM FlashSystem 9100 storage systems

- In 6.2.4, CSM has added official support for IBM FlashSystem 9100 devices
- In the Add Storage System connection wizard, select Spectrum Virtualize and then enter the credential to create a connection to the FlashSystem 9100 device
- CSM will then automatically discover all volumes on the device and label the appropriately as FlashSystem 9100 volumes
- (ex. FLASHSYSTEM-9100:CLUSTER:FS9100-1)



Support for Spectrum Accelerate (A9000) HyperSwap

- In 6.2.4, CSM has added support to enable HyperSwap on Spectrum Accelerate (A9000) Metro Mirror sessions
- Under the properties of a Metro Mirror Failover/Failback session with Spectrum Accelerate volumes attached, the customer can select the “Manage H1-H2 with HyperSwap” option
- When HyperSwap is enabled, I/O will automatically swap to the remote site in the event of a primary I/O error, or when explicitly issued by command (aka planned and unplanned swap support)
- Swap by command is as easy as issuing the “HyperSwap” command
- NOTE: To enable HyperSwap both primary and secondary volumes must have the same name

IBM Copy Services Manager Overview Sessions Storage Paths Console Settings csmadmin

Sessions > A9000_HS Last Update: Dec 10, 2018 1:42:41 PM

A9000_HS

Session Actions:

Status Normal
 State Prepared
 Session Type Metro Mirror Failover/Failback
 Active Host H1
 Recoverable Yes
 HyperSwap Yes
 Description (modify)
 Copy Sets 1 (view)
 Group Name

H1 Pool CSM_Test
 H1 Consistency Group A9000_HS
 H2 Pool CSM_Test
 H2 Consistency Group A9000_HS

Participating Role Pairs:

Role Pair	Error Count	Recoverable	Copying	Progress	Copy Type	Timestamp
H1 → H2	0	1	1	100%	HS	n/a

DS8880 Safeguarded Copy Backup Demo

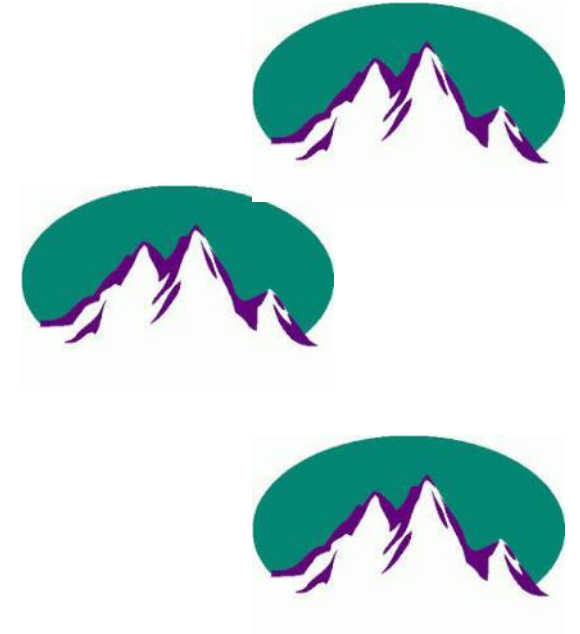
Safeguarded Copy - Background

- Organizations are becoming more concerned about the ability to recover from “data corruption” events
- These cover a wide range of possibilities from application corruption and user error through malicious destruction of data and ransomware attacks where data might be encrypted by an attacker
- Specific guidelines exist for financial services organizations in the United States documented in “Appendix J” of the FFIEC IT Examination Handbook
- Providing one / more / many versions of data at previous points in time is seen as a key technical capability to enable recovery use cases



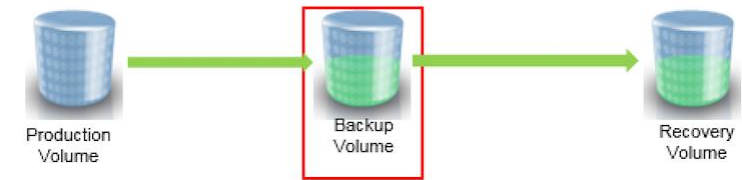
Objectives for Safeguarded Copies

- Enable the capturing of many (target 500 for initial delivery) Point in Time images of a production environment with optimized capacity usage and minimized performance impact.
- Enable a previous Point in Time to be either restored to the production volumes or made available on another set of volumes while the production environment continues to run.
- Secure the data for the Safeguarded Copies to prevent this data being compromised either accidentally or deliberately.



Safeguarded Copies and FlashCopy

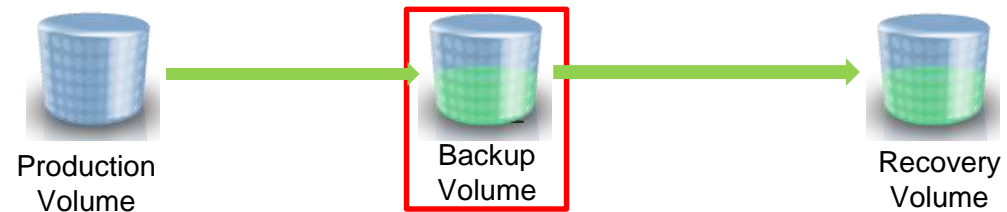
- Safeguarded Copies do not replace FlashCopy and both technologies remain relevant in Logical Corruption Protection scenarios
- FlashCopy provides an instantly accessible copy of a production volume or dataset and for multiple FlashCopies each copy is independent from the others from a data perspective
- Safeguarded Copies could be used to take many frequent copies of a production environment (e.g. hourly copies maintained for a number of days) while FlashCopy continues to be used to take a small number of less frequent copies (e.g. weekly copies maintained for 1-2 weeks)



Volume Terminology

The **Production Volume** is the source volume for a Safeguarded Copy relationship. Depending on the specific client topology this could be a Metro Mirror, Global Mirror or z/OS Global Mirror primary or secondary volume or a Simplex volume.

**Maximum Volume Size = 2 TB



The **Backup Volume** is a thin provisioned volume associated on a 1:1 basis with a Production Volume. It is not accessible to hosts and does not consume a host volume number. Updates written to the production volume cause tracks to be copied into the Backup Volume to allow Recovery to a number of specific Backup Copies which are created each time a Consistency Group is formed

**Maximum Size = 16 TB

The **Recovery Volume** is the target volume for a Safeguarded Copy Recovery which enables a prior Backup Copy to be accessed by a host attached to this volume. The Recovery Volume would typically be thin provisioned but this is not mandatory

Security

- The Backup Volume is not addressable or accessible by hosts
- The Backup Volume cannot be deleted unless all Backup Copies are removed by controlling software
- A Production Volume cannot be deleted unless the Backup Volume and all Backup Copies have been deleted
- Custom User roles for DSGUI and DSCLI
- Policy on retention for Backup Copies will be in the controlling software (GDPS or CSM) NOT in the DS8880



CSM Support for DS8000 Safeguarded Copies – Demo

- Creating sessions
- Setting properties for Safeguarded Copies
- Creating Backups
- Scheduled Backups
- Recovering from a Backup
- Cleanup Recovery volumes and backups





Questions

