

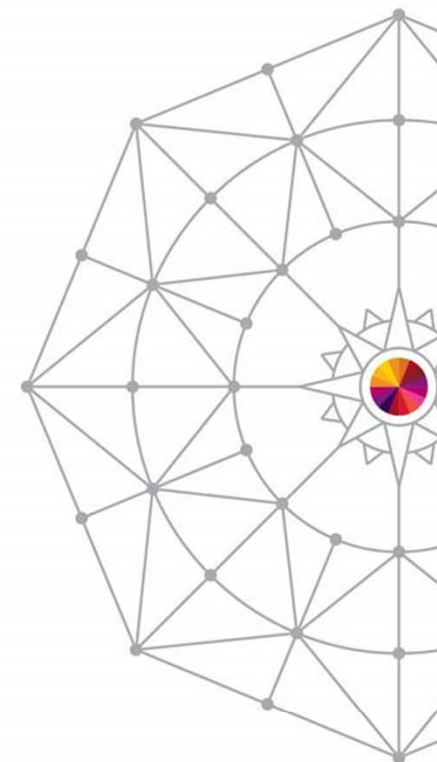
# Session 15548

## OMEGAMON XE for Storage V520 Features

*Speakers:*

*Vickie Dault, IBM Corp*

*Deb Reynolds, IBM Corp*



*Tuesday August 5, 2014*

*4:15 – 5:15*

#SHAREorg



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# Agenda

- V530 Announcement
  - Features
    - New product dynamic Workspace Links
    - Up to 15% Reduction in CPU for Space and Cache
    - Dataset Attributes Database Extraction DAGX
- V520 Examples
  - CA1
  - Record Level Sharing
    - Application Summary
    - Record level Sharing
    - Storclas
  - z/OS Copy Services
    - XRC
    - PPRC
    - FlashCopy
  - Miscellaneous APARS/PTFS

## V5.3.0 Announcement

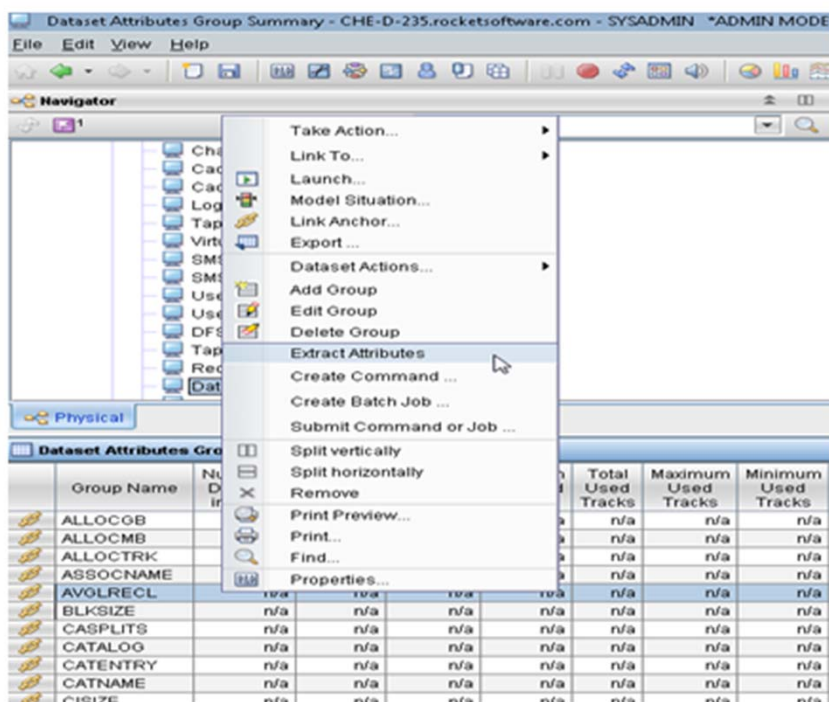
- OMEGAMON Performance Management Suite  
Announcement Letter 214-272
  - OMEGAMON XE for z/OS
  - OMEGAMON XE for CICS
  - OMEGAMON XE for Messaging V7.3
  - OMEGAMON Dashboard Edition
  - OMEGAMON XE for Storage on z/OS V5.3
    - Enhanced e3270ui
      - Nearterm History

## V5.3.0 Announcement

- OMEGAMON Performance Management Suite  
Announcement Letter 214-272
  - OMEGAMON XE for z/OS
  - OMEGAMON XE for CICS
  - OMEGAMON XE for Messaging V7.3
  - OMEGAMON Dashboard Edition
  - OMEGAMON XE for Storage on z/OS V5.3
    - Significant performance Improvements Up to 15%
      - Cache
      - Volume Space Collection
    - Dataset Attributes Database Extraction DAGX
    - Additional Dynamic Workspace Links
      - IBM Tivoli Advanced Audit for DFSMSHsm
      - IBM Tivoli Advanced reporter for DFSMSHsm
      - IBM Tivoli Advanced Catalog management
      - IBM Tivoli Advanced Backup and Recovery Manager
      - IBM Tivoli Advanced Allocation Manager
      - IBM Tivoli Tape Optimizer
      - IBM Tivoli Automated Tape Allocation Manager

# V5.3.0 Announcement

- OMEGAMON Performance Management Suite  
Announcement Letter 214-272
  - OMEGAMON XE for Storage on z/OS V5.3
    - Dataset Attributes Database Extraction DAGX



- **Improve trend analysis and planning** - New Dataset Attribute Group Extraction (DAGX) allows analysis of dataset attribute groups using spreadsheet or other analytics tools outside of Tivoli Data Warehouse for Storage Administrators
- Easy to use – Pull down and panel driven
- Output can be exported to a delimited file where it can be manipulated by Excel or any other program you wish to use

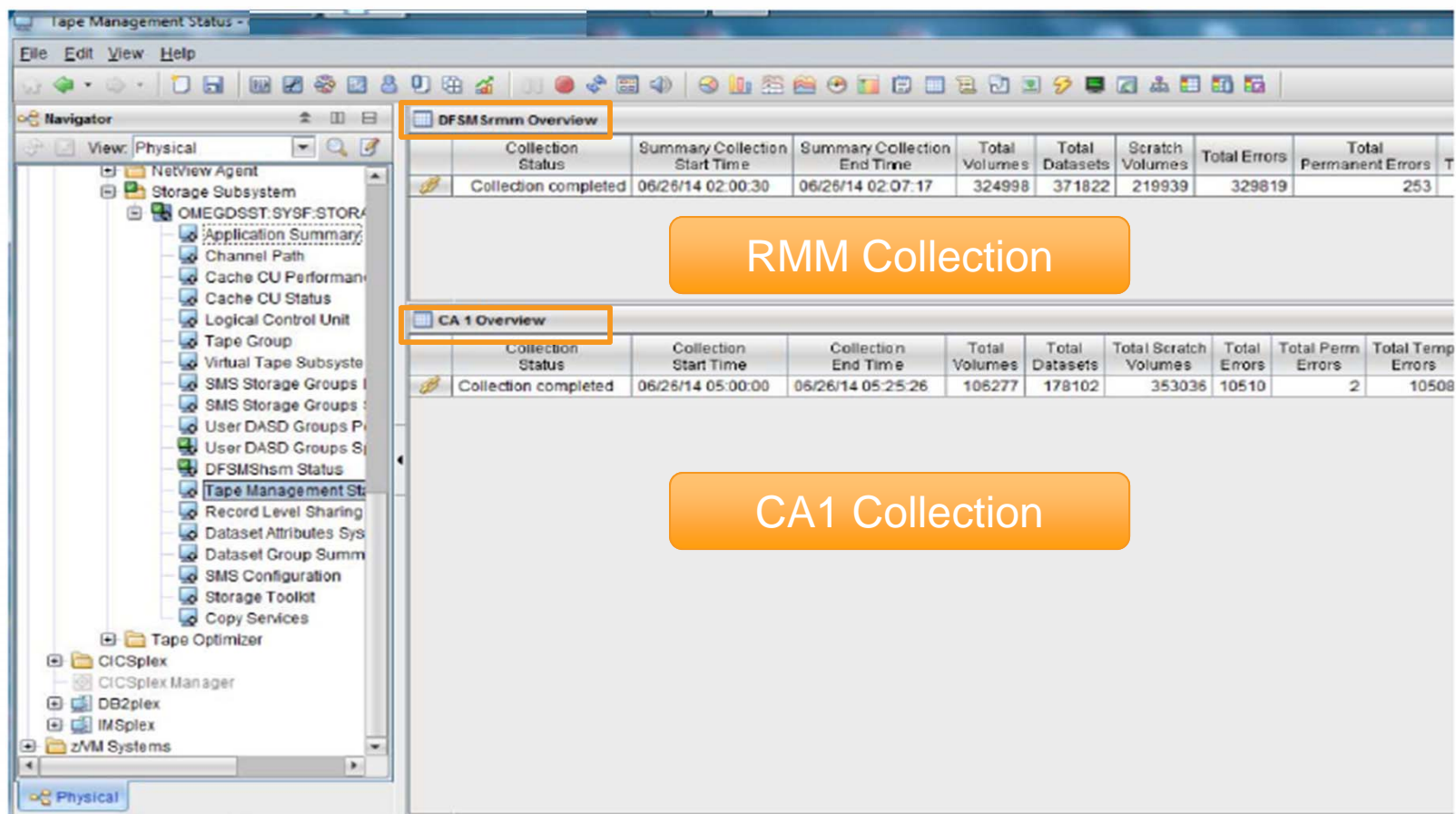
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# Agenda

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# V520 Features

## CA1



The screenshot displays the 'Tape Management Status' application window. On the left is a 'Navigator' pane with a tree view of system components. The main area shows two overview tables. The top table, 'DFSMShrm Overview', has an orange callout box labeled 'RMM Collection'. The bottom table, 'CA 1 Overview', has an orange callout box labeled 'CA1 Collection'.

Collection Status	Summary Collection Start Time	Summary Collection End Time	Total Volumes	Total Datasets	Scratch Volumes	Total Errors	Total Permanent Errors
Collection completed	06/26/14 02:00:30	06/26/14 02:07:17	324998	371822	219939	329819	253

Collection Status	Collection Start Time	Collection End Time	Total Volumes	Total Datasets	Total Scratch Volumes	Total Errors	Total Perm Errors	Total Temp Errors
Collection completed	06/26/14 05:00:00	06/26/14 05:25:26	106277	178102	353036	10510	2	10508

Significant performance improvements for collecting CA1 data

Complete your session evaluations online at [www.SHARE.org/Pittsburgh-Eval](http://www.SHARE.org/Pittsburgh-Eval)

# V520 Features

## Tape Management Now with CA1

Tape Management Status - dem21lnx.democentral.ibm.com - Vickie Dault

File Edit View Help

Navigator

View: Physical

- DB2
- IMS
- Advanced Audit for DFSMSHsm
- Advanced Reporting and Management for DFSMSHsm
- Mainframe Networks
- MQSERIES
- MVS Operating System
- NetView Agent
- OMEGACENTER Bridge
- QI Agent
- Services Management Agent
- Storage Subsystem
  - CXEGDSST.MVSA:STORAGE
    - Application Summary MVSA
    - Channel Path
    - Cache CU Performance
    - Cache CU Status
    - Logical Control Unit
    - Tape Group
    - Virtual Tape Subsystems
    - SMS Storage Groups Performance
    - SMS Storage Groups Space
    - User DASD Groups Performance
    - User DASD Groups Space
    - DFSMSHsm Status MVSA
    - Tape Management Status**
    - Record Level Sharing
    - Dataset Attributes System Summary
    - Dataset Group Summary
    - SMS Configuration
    - Storage Toolkit
    - Copy Services

- System Automation for z/OS

DFSMSrmm Overview

Collection Status	Summary Collection Start Time	Summary Collection End Time	Errors	Total Permanent Errors	Total Temporary Errors
Collection not started			0	0	0

CA 1 Overview

Collection Start Time	Crashes	Total Errors	Total Perm Errors	Total Temp Errors
	0	0	0	0

CA 1 Collection Control

- Take Action...
- Link To...
- Launch...
- Model Situation...
- Link Anchor...
- Export ...
- CA 1 Collection Control**
- Create Command ...
- Create Batch Job ...
- Submit Command or Job ...
- Split vertically
- Split horizontally
- Remove
- Print Preview...
- Print..
- Find...
- Properties...



# V520 Features

## Tape Management Now with CA1

Tape Management Status - dem21lnx.democentral.ibm.com - Vickie Dault

File Edit View Help

Navigator View: Physical

- DB2
- IMS
- Advanced Audit for DFSMSHsm
- Advanced Reporting and Management for DFSMSHsm
- Mainframe Networks
- MQSERIES
- MVS Operating System
- NetView Agent
- OMEGACENTER Bridge
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- Sto
- Tape Group
- Virtual Tape Subsystems
- SMS Storage Groups Performance
- SMS Storage Groups Space
- User DASD Groups Performance
- User DASD Groups Space
- DFSMSHsm Status MVSA
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**DFSMSrmm Overview**

Errors	Total Permanent Errors	Total Temporary Errors
0	0	0

Collection Status	Summary Collection Start Time	Summary Collection End Time
Collection not started		

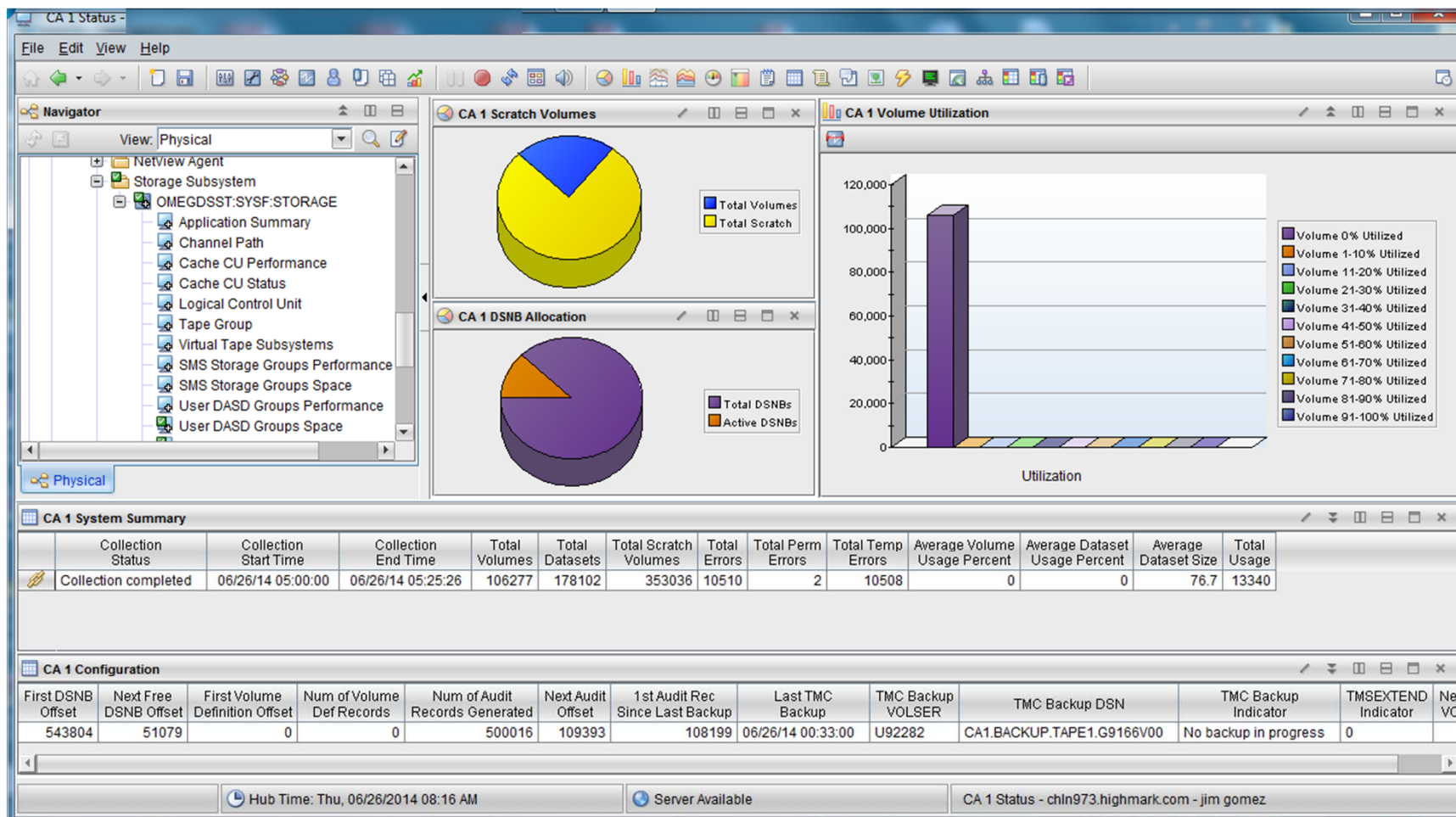
**CA 1 Overview**

Collection Status	Collection Start Time	Collection End Time	Total Volumes	Total Datasets	Total Scratch Volumes	Total Errors	Total Perm Errors
Collection completed	06/26/14 05:00:00	06/26/14 05:25:26	106277	178102	353036	10510	2

CA 1 Status  
Link Wizard...  
Link Anchor...

# V520 Features

## Tape Management Now with CA1



# Agenda

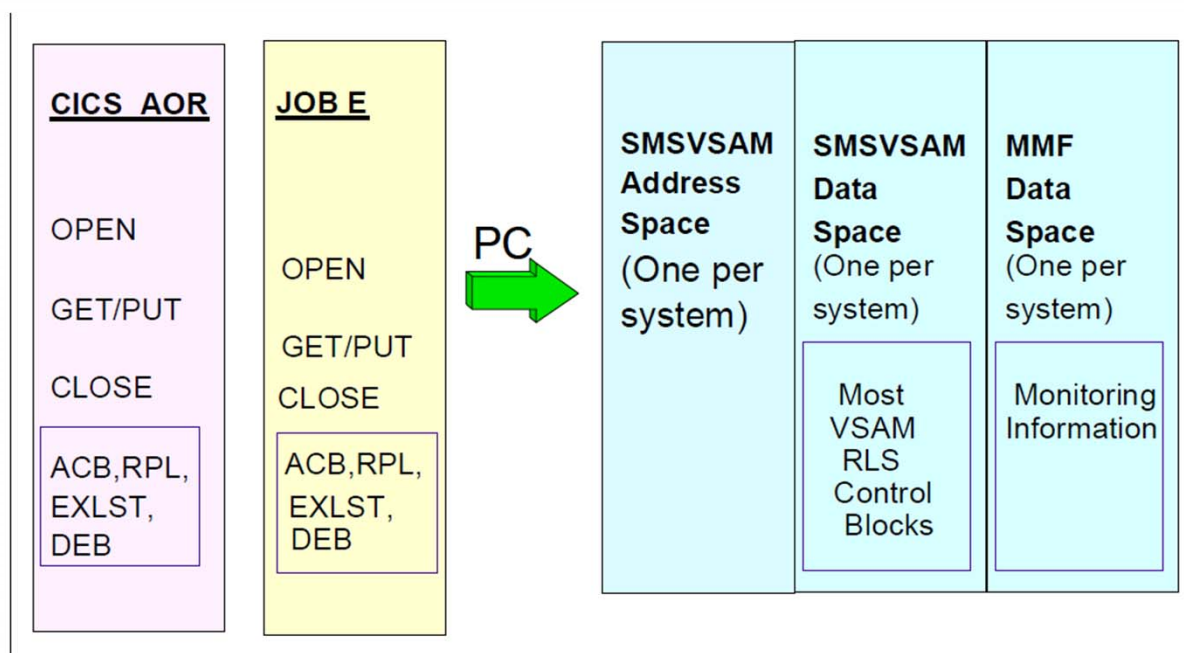
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# V520 Features

## Record Level Sharing

Shared VSAM access with Serialization at the Record level

VSAM Address Space Server **SMSVSAM**



\*Reference [VSAM Demystified](#)

[SG24-6105-02](#)

[ibm.com/Redbooks](http://ibm.com/Redbooks)

# V520 Features

## Record Level Sharing Components

**VSAM Buffers** are moved from the Application address space to

A 31 bit buffer pool in the SMSVSAM Address Space

A 64 bit buffer pool in the SMSVSAM Address Space

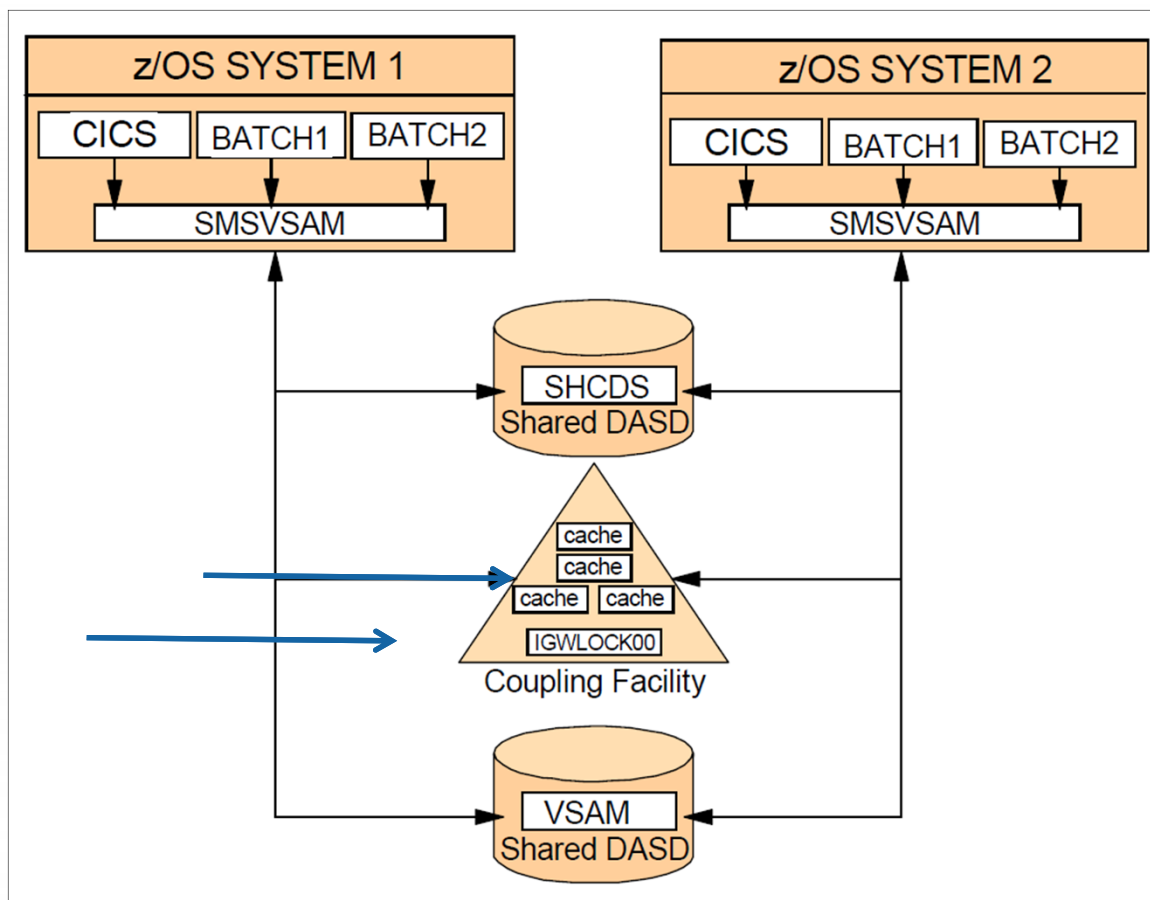
\*Reference VSAM Demystified SG24-6105-02

[ibm.com/Redbooks](http://ibm.com/Redbooks)

# V520 Features

## Record Level Sharing Components

### Cache Structures and Locks



\*Reference [VSAM Demystified](#) [SG24-6105-02](#) [ibm.com/Redbooks](http://ibm.com/Redbooks)

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# V520 Features

## Record Level Sharing Components

### RLS Terminology

SMSVSAM Address space using XCF services, sharing locks, manage VSAM buffer

VSAM SPHERE All components of a VSAM dataset (data, index and alternate indexes) or a set of related VSAM datasets

RLS CLIENT Any address space that invokes A FUNCTION that invokes the services of the SMSVSAM address space. [CICS](#), [DFHSM](#), [Catalog](#)

RECORD LOCK XES obtained by the SMSVSAM address space on behalf a logical record. [Exclusive locks](#) for updates and [shared locks](#) for read integrity

TRUE CONTENTION Two users are trying to access the same record at the same time. Warrants tuning your applications.

FALSE CONTENTION In an effort to determine if the resource is available  
Too high a count can mean the lock structure is too small

\*Reference [VSAM Demystified](#) SG24-6105-02

[ibm.com/Redbooks](http://ibm.com/Redbooks)

# V520 Features

## Record Level Sharing Components

Retained Locks – a retained lock held at failure of a recoverable subsystem.

Lost Locks - a double failure of the address space and the SMSVSAM address space or lock structure

RLS mode - A dataset is in RLS mode when last accessed by RLS  
RLS-IN-USE mode indicator in the catalog entry.



# V520 Features

## Record Level Sharing Requirements

### HARDWARE

A Coupling Facility

Couple Dataset **SHCDS\***

### SOFTWARE

VSAM file **MUST BE SMS Managed** – **Storclas** determines **Structure** use  
VSAM tolerant programs *//ddname DD MODE=RLS*

Lock Structure primary **IGWLOCK00**

**Monitor False contention rate to determine if resizing is necessary**

\*Reference VSAM Demystified

SG24-6105-02

[ibm.com/Redbooks](http://ibm.com/Redbooks)

# V520 Features

## Record Level Sharing OMEGAMON

- Application Summary
  - Job allocated to a VSAM file open for RLS
  - SMSVSAM address space for I/O to VSAM file
  
- Dataset Group
  - Datasets opened for RLS processing
  
- SMS Configuration
  - **Storclas** definitions where RLS cache structure is identified.
  
- Record level sharing
  - CF Structure
  - Locks,
  - Buffer Utilization
  - Storage Class

APPLY OA45578 –UA74258 before monitoring with RLS

# V520 Features

## Record Level Sharing Prerequisites

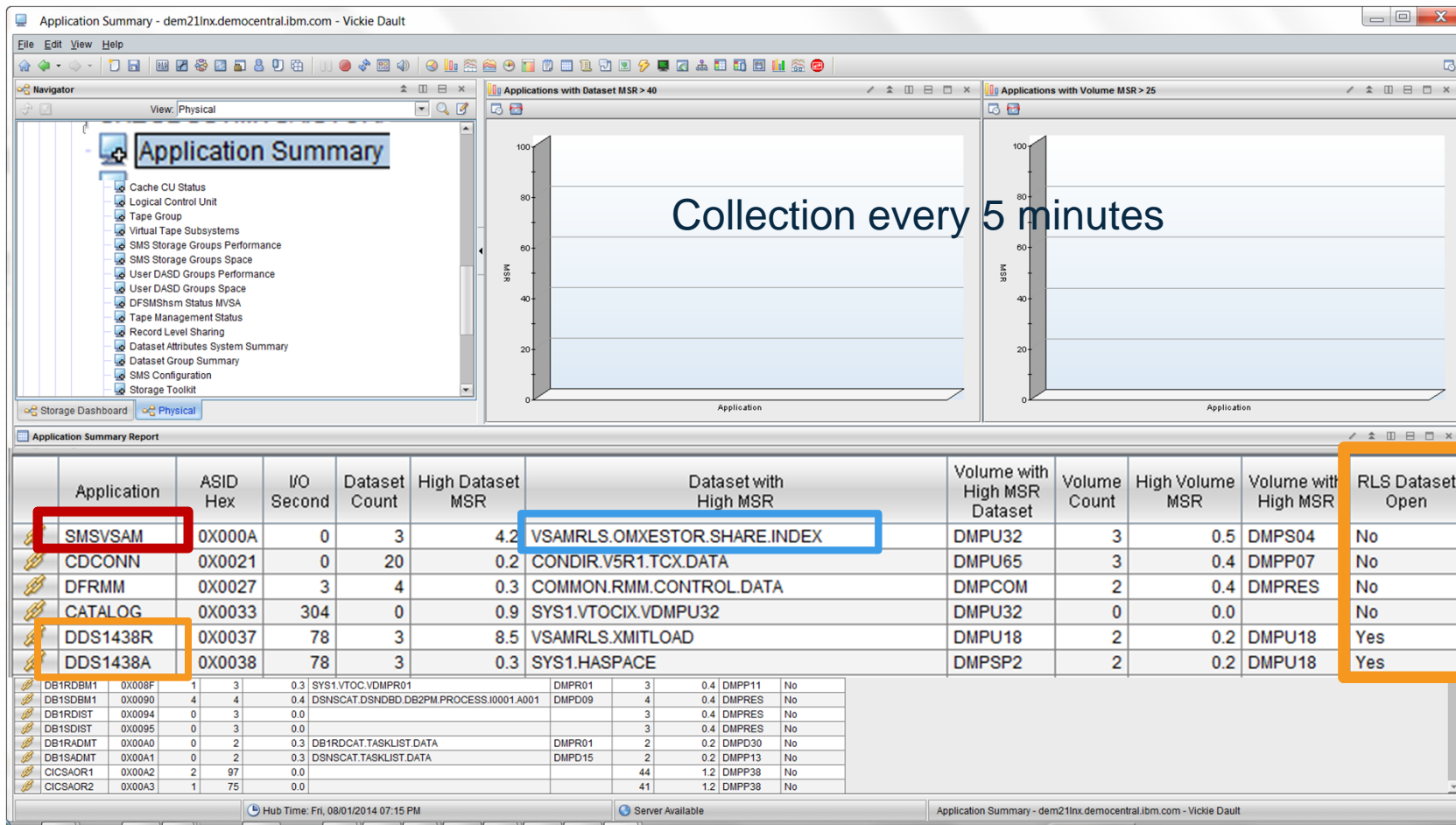
Enablement APARS - Required for data to be made available to  
OMEGAMON XE for Storage

TECHNOTE 1667351 - describes APARS

OA41786 OA42798 OA43380 OA43381 & OA43376

# V520 Features

## Record Level Sharing

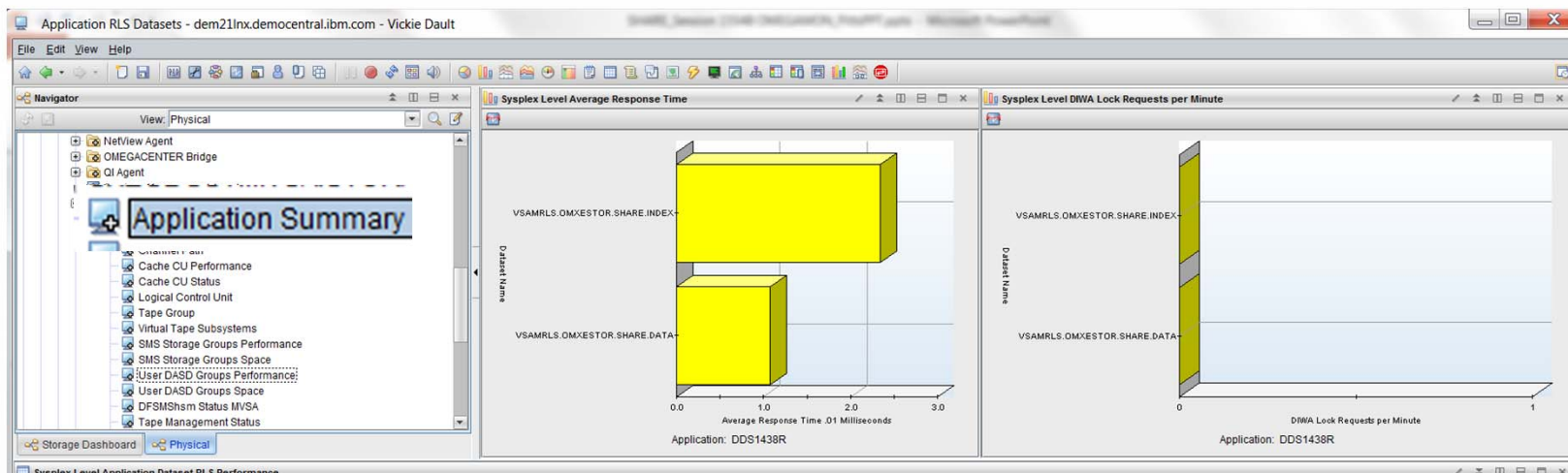


Collection every 5 minutes

Application	ASID Hex	I/O Second	Dataset Count	High Dataset MSR	Dataset with High MSR	Volume with High MSR Dataset	Volume Count	High Volume MSR	Volume with High MSR	RLS Dataset Open
SMSVSAM	0X000A	0	3	4.2	VSAMRLS.OMXESTOR.SHARE.INDEX	DMPU32	3	0.5	DMPS04	No
CDCONN	0X0021	0	20	0.2	CONDIR.V5R1.TCX.DATA	DMPU65	3	0.4	DMPP07	No
DFRMM	0X0027	3	4	0.3	COMMON.RMM.CONTROL.DATA	DMPCOM	2	0.4	DMPRES	No
CATALOG	0X0033	304	0	0.9	SYS1.VTOCIX.VDMPU32	DMPU32	0	0.0		No
DDS1438R	0X0037	78	3	8.5	VSAMRLS.XMITLOAD	DMPU18	2	0.2	DMPU18	Yes
DDS1438A	0X0038	78	3	0.3	SYS1.HASPACE	DMPSP2	2	0.2	DMPU18	Yes

# V520 Features

## Record Level Sharing



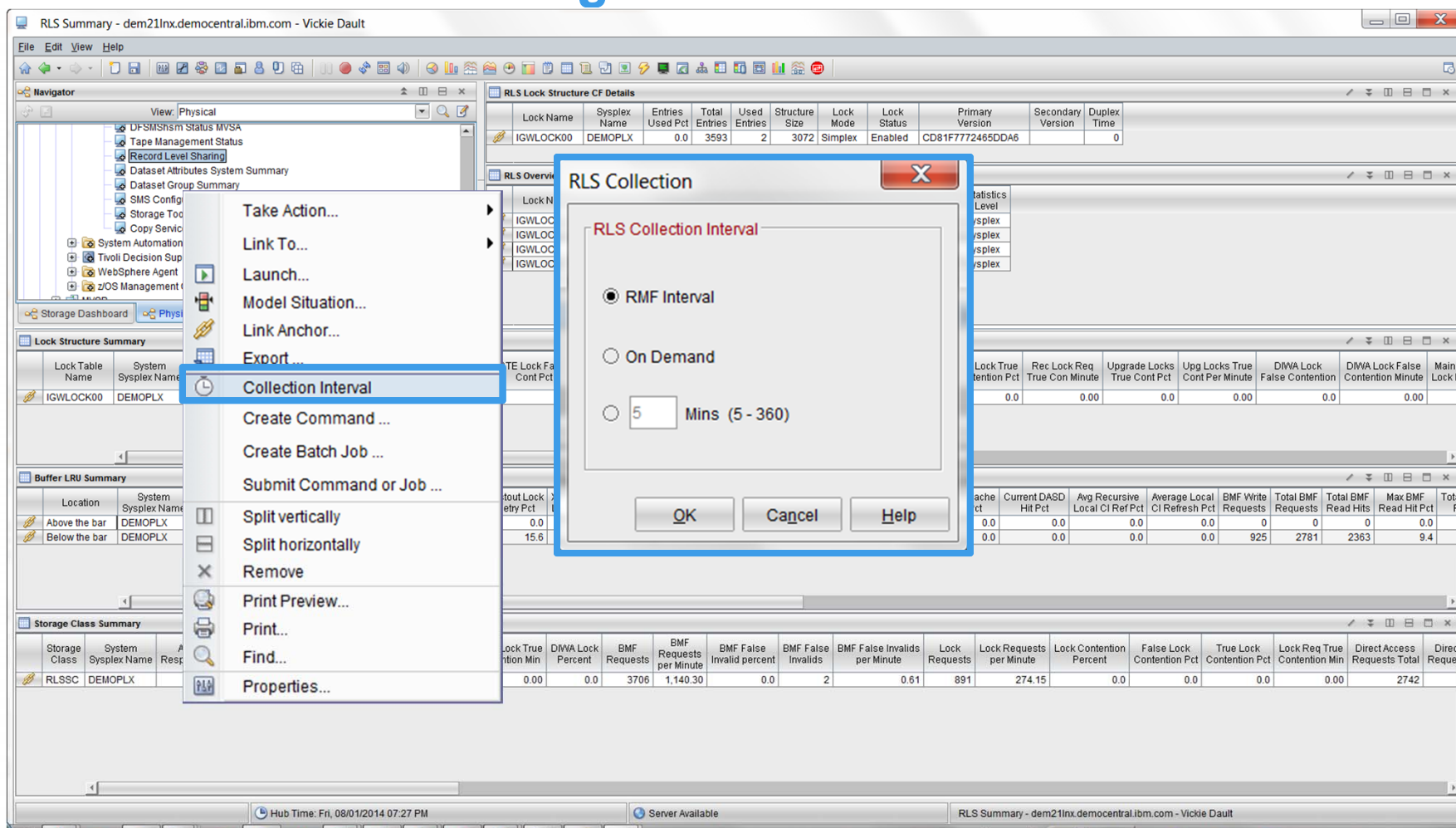
**Sysplex Level Application Dataset RLS Performance**

Dataset Name	Average Response Time	Total Requests	Total Requests per Minute	Lock Requests	Lock Requests per Minute	BMF Requests	BMF Requests per Minute	BMF False Invalids	BMF False Invalids per Minute	BMF False Invalid percent
VSAMRLS.OMXESTOR.SHARE.INDEX	2.36	2733	283.70	1807	187.57	5470	567.82	0	0.00	0.0
VSAMRLS.OMXESTOR.SHARE.DATA	1.10	5405	561.07	866	89.89	5464	567.19	23	2.38	0.4

- SMS Storage Class Details
- BCDS Details
- MCDS Details
- RLS Storage Class Details**
- Link Wizard...
- Link Anchor...

# V520 Features

## Record Level Sharing Collection Interval



The screenshot displays the 'RLS Summary' application interface. A context menu is open over the 'IGWLOCK00' lock entry, with the 'Collection Interval' option highlighted. A dialog box titled 'RLS Collection' is overlaid on the screen, showing the configuration for the collection interval. The 'RMF Interval' radio button is selected. Below it, the 'On Demand' option is unselected. The third option is '5 Mins (5 - 360)', where '5' is entered in a text box. The dialog has 'OK', 'Cancel', and 'Help' buttons.

Lock Name	Sysplex Name	Entries Used Pct	Total Entries	Used Entries	Structure Size	Lock Mode	Lock Status	Primary Version	Secondary Version	Duplex Time
IGWLOCK00	DEMOPLX	0.0	3593	2	3072	Simplex	Enabled	CD81F772465DDA6		0

Lock True Contention Pct	Rec Lock Req True Cont Minute	Upgrade Locks True Cont Pct	Upg Locks True Cont Per Minute	DIWA Lock False Contention	DIWA Lock False Contention Minute	Maint Lock F
0.0	0.00	0.0	0.00	0.0	0.00	0.00

Cache Hit Pct	Current DASD Hit Pct	Avg Recursive Local CI Ref Pct	Average Local CI Refresh Pct	BMF Write Requests	Total BMF Requests	Total BMF Read Hits	Max BMF Read Hit Pct	Total R
0.0	0.0	0.0	0.0	0	0	0	0.0	0.0
0.0	0.0	0.0	0.0	925	2781	2363	9.4	

Lock True Contention Min	DIWA Lock Percent	BMF Requests	BMF Requests per Minute	BMF False Invalid percent	BMF False Invalids	BMF False Invalids per Minute	Lock Requests	Lock Requests per Minute	Lock Contention Percent	False Lock Contention Pct	True Lock Contention Pct	Lock Req True Contention Min	Direct Access Requests Total	Direct Requests
0.00	0.0	3706	1,140.30	0.0	2	0.61	891	274.15	0.0	0.0	0.0	0.00	2742	

# V520 Features

## Record Level Sharing

RLS Summary - dem21lnx.democentral.ibm.com - Vickie Dault

**RLS Lock Structure CF Details**

Lock Name	Sysplex Name	Entries Used Pct	Total Entries	Used Entries	Structure Size	Lock Mode	Lock Status	Primary Version	Secondary Version	Duplex Time
IGWLOCK00	DEMOPLX	0.0	3593	2	3072	Simplex	Enabled	CD81F7772465DDA6		0

**Lock Structure Summary**

Lock Table Name	System Sysplex Name	DIWA Lock Requests	DIWA Lock Requests per Minute	DIWA Lock True Contention Pct	DIWA Lock True Contention Min	ATE Lock False Cont Pct	ATE Lock False Cont Per Minute	Exp Path True Contention Pct	Exp Path False Cont Lock Req Per Minute	Main Path True Contention Pct	Main Path True Cont Lock Req Per Minute	Rec Lock True Contention Pct	Rec Lock Req True Con Minute	Upgrade Locks True Cont Pct	Upg Locks True Cont Per Minute	DIWA Lock False Contention	DIWA Lock False Contention Minute	Main Lock F
IGWLOCK00	DEMOPLX	0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	

**Buffer LRU Summary**

Location	System Sysplex Name	BMF Panic Mode Pct	BMF Panic Mode	BMF Accelerated Mode Pct	BMF Accelerated Mode	XCF Castout Lock Cont Retry Pct	XCF Castout Lock Retries	Current BMF Read Hit Pct	Min BMF Read Hit Pct	Curr Recursive Local CI Ref Pct	Minimum CF Cache Read Hit Pct	Average CF Cache Read Hit Pct	Current DASD Hit Pct	Avg Recursive Local CI Ref Pct	Average Local CI Refresh Pct	BMF Write Requests	Total BMF Requests	Total BMF Read Hits	Max BMF Read Hit Pct	Total R
Above the bar	DEMOPLX	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0.0	
Below the bar	DEMOPLX	0.0	0	0.0	0	15.6	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	925	2781	2363	9.4	

**Storage Class Summary**

Storage Class	System Sysplex Name	Average Response Time	DIWA Lock Requests	DIWA Lock Requests per Minute	DIWA Lock True Contention Pct	DIWA Lock True Contention Min	DIWA Lock Percent	BMF Requests	BMF Requests per Minute	BMF False Invalid percent	BMF False Invalids	BMF False Invalids per Minute	Lock Requests	Lock Requests per Minute	Lock Contention Percent	False Lock Contention Pct	True Lock Contention Pct	Lock Req True Contention Min	Direct Access Requests Total	Direct Request
RLSSC	DEMOPLX	1.47	0	0.00	0.0	0.00	0.0	3706	1,140.30	0.0	2	0.61	891	274.15	0.0	0.0	0.0	0.00	2742	

Hub Time: Fri, 08/01/2014 07:27 PM | Server Available | RLS Summary - dem21lnx.democentral.ibm.com - Vickie Dault

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# V520 Features

## Record Level Sharing

RLS Summary - dem21Inx.democentral.ibm.com - Vickie Dault

File Edit View Help

Navigator View: Physical

- DFSMSshm Status MIVSA
- Tape Management Status
- Record Level Sharing**
- Dataset Attributes System Summary
- Dataset Group Summary
- SMS Configuration
- Storage Toolkit
- Copy Services
- System Automation for z/OS
- Tivoli Decision Support for z/OS
- WebSphere Agent
- z/OS Management Console

Storage Dashboard Physical

RLS Lock Structure CF Details

RLS Overview

Lock Name	System Sysplex Name	Systems Reporting	Interval	Lock Rate	Contention Rate	False Cont Rate	Avg Queue Length	Statistics Level
IGWLOCK00	DEMOPLX		1 day	0.029	0.000	1.942	0.000	Sysplex
IGWLOCK00	DEMOPLX		8 hours	0.089	0.000	1.942	0.002	Sysplex
IGWLOCK00	DEMOPLX		1 hour	0.715	0.000	1.942	0.018	Sysplex
IGWLOCK00	DEMOPLX		1 minute	1.450	0.000	0.000	0.555	Sysplex

Lock Structure Summary

Lock Table Name	System Sysplex Name	DIWA Lock Requests	DIWA Lock Requests per Minute	DIWA Lock True Contention Pct	DIWA Lock Contention Min	Cont Pct	Cont Per Minute	Contention Pct	Cont Lock Req Per Minute	Contention Pct	Cont Lock Req Per Minute	Contention Pct	True Con Minute	True Cont Pct	Cont Per Minute	False Contention	Contention Minute	Lock False Lock F	Maint
IGWLOCK00	DEMOPLX	0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.0	0.00	

Buffer LRU Summary

Location	System Sysplex Name	BMF Panic Mode Pct	BMF Panic Mode	BMF Accelerated Mode Pct	BMF Accelerated Mode	XCF Castout Lock Cont Retry Pct	XCF Castout Lock Retries	Current BMF Read Hit Pct	Min BMF Read Hit Pct	Curr Recursive Local Cl Ref Pct	Minimum CF Cache Read Hit Pct	Average CF Cache Read Hit Pct	Current DASD Hit Pct	Avg Recursive Local Cl Ref Pct	Average Local Cl Refresh Pct	BMF Write Requests	Total BMF Requests	Total BMF Read Hits	Max BMF Read Hit Pct	Total R
Above the bar	DEMOPLX	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0.0	0.0
Below the bar	DEMOPLX	0.0	0	0.0	0	15.6	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	925	2781	2363	9.4	

Storage Class Summary

Storage Class	System Sysplex Name	Average Response Time	DIWA Lock Requests	DIWA Lock Requests per Minute	DIWA Lock True Contention Pct	DIWA Lock True Contention Min	DIWA Lock Percent	BMF Requests	BMF Requests per Minute	BMF False Invalid percent	BMF False Invalids	BMF False Invalids per Minute	Lock Requests	Lock Requests per Minute	Lock Contention Percent	False Lock Contention Pct	True Lock Contention Pct	Lock Req True Contention Min	Direct Access Requests Total	Direct Requests
RLSSC	DEMOPLX	1.47	0	0.00	0.0	0.00	0.0	3706	1,140.30	0.0	2	0.61	891	274.15	0.0	0.0	0.0	0.00	2742	

Hub Time: Fri, 08/01/2014 07:27 PM

Server Available

RLS Summary - dem21Inx.democentral.ibm.com - Vickie Dault

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# V520 Features

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IGWLOCK00	DEMOPLX	0.0	3593	2	3072	Simplex	Enabled	CD81F7772465DDA6		0

RLS Overview

Lock Name	System Sysplex Name	Systems Reporting	Interval	Lock Rate	Contention Rate	False Cont Rate	Avg Queue Length	Statistics Level
IGWLOCK00	DEMOPLX	3	1 day	0.013	0.000	0.000	0.000	Sysplex
IGWLOCK00	DEMOPLX	3	8 hours	0.041	0.000	0.000	0.001	Sysplex
IGWLOCK00	DEMOPLX	3	1 hour	0.330	0.000	0.000	0.009	Sysplex
IGWLOCK00	DEMOPLX	3	1 minute	1.650	0.000	0.000	0.555	Sysplex

**Lock Structure Summary**

Lock Table Name	System Sysplex Name	DIWA Lock Requests	DIWA Lock Requests per Minute	DIWA Lock True Contention Pct	DIWA Lock True Contention Min	ATE Lock False Cont Pct	ATE Lock False Cont Per Minute
IGWLOCK00	DEMOPLX	0	0.00	0.0	0.00	0.0	0.00

Location

Location	System Sysplex Name	BMF Panic Mode Pct	BMF Panic Mode	BMF Accelerated Mode Pct	BMF Accelerated Mode	XCF Castout Lock Cont Retry Pct	XCF Castout Lock Retries	Current BMF Read Hit Pct	Min BMF Read Hit Pct	Curr Recursive Local Cl Ref Pct	Minimum CF Cache Read Hit Pct	Average CF Cache Read Hit Pct	Current DASD Hit Pct	Avg Recursive Local Cl Ref Pct	Average Local Cl Refresh Pct	BMF Write Requests	Total BMF Requests	Total BMF Read Hits	Max BMF Read Hit Pct	Total R
Above the bar	DEMOPLX	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0.0	0.0	
Below the bar	DEMOPLX	0.0	0	0.0	0	15.6	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	925	2781	2363	9.4		

Storage Class Summary

Storage Class	System Sysplex Name	Average Response Time	DIWA Lock Requests	DIWA Lock Requests per Minute	DIWA Lock True Contention Pct	DIWA Lock True Contention Min	DIWA Lock Percent	BMF Requests	BMF Requests per Minute	BMF False Invalid percent	BMF False Invalids	BMF False Invalids per Minute	Lock Requests	Lock Requests per Minute	Lock Contention Percent	False Lock Contention Pct	True Lock Contention Pct	Lock Req True Contention Min	Direct Access Requests Total	Direct Reques
RLSSC	DEMOPLX	1.47	0	0.00	0.0	0.00	0.0	3706	1,140.30	0.0	2	0.61	891	274.15	0.0	0.0	0.0	0.00	2742	

Hub Time: Fri, 08/01/2014 07:27 PM

Server Available

RLS Summary - dem21Inx.democentral.ibm.com - Vickie Dault

# V520 Features

## Record Level Sharing

RLS Summary - dem21Inx.democentral.ibm.com - Vickie Dault

File Edit View Help

Navigator View: Physical

- DFSMSHsm Status MVS
- Tape Management Status
- Record Level Sharing**
- Dataset Attributes System Summary
- Dataset Group Summary
- SMS Configuration
- Storage Toolkit
- Copy Services
- System Automation for z/OS
- Tivoli Decision Support for z/OS
- WebSphere Agent
- z/OS Management Console

Storage Dashboard Physical

RLS Lock Structure CF Details

Lock Name	Sysplex Name	Entries Used Pct	Total Entries	Used Entries	Structure Size	Lock Mode	Lock Status	Primary Version	Secondary Version	Duplex Time
IGWLOCK00	DEMOPLX	0.0	3593	2	3072	Simplex	Enabled	CD81F7772465DDA6		0

RLS Overview

Lock Name	System Sysplex Name	Systems Reporting	Interval	Lock Rate	Contention Rate	False Cont Rate	Avg Queue Length	Statistics Level
IGWLOCK00	DEMOPLX	3	1 day	0.013	0.000	0.000	0.000	Sysplex
IGWLOCK00	DEMOPLX	3	8 hours	0.041	0.000	0.000	0.001	Sysplex
IGWLOCK00	DEMOPLX	3	1 hour	0.330	0.000	0.000	0.009	Sysplex
IGWLOCK00	DEMOPLX	3	1 minute	1.650	0.000	0.000	0.555	Sysplex

Lock Structure Summary

Lock Table Name	System Sysplex Name	DIWA Lock Requests	DIWA Lock Requests per Minute	DIWA Lock True Contention Pct	DIWA Lock True Contention Min	ATE Lock False Cont Pct	ATE Lock False Cont Per Minute	Exp Path True Contention Pct	Exp Path False Cont Lock Req Per Minute	Main Path True Contention Pct	Main Path True Cont Lock Req Per Minute	Rec Lock True Contention Pct	Rec Lock Req True Cont Minute	Upgrade Locks True Cont Pct	Upg Locks True Cont Per Minute	DIWA Lock False Contention	DIWA Lock False Contention Minute	Maint Lock R

Buffer LRU Summary

Location	System Sysplex Name	BMF Panic Mode	BMF Panic Mode Pct	BMF Write Requests	Total BMF Requests	Total BMF Read Hits	Max BMF Read Hit Pct	Total DASD Hits	XCF Castout Lock Cont Retry Pct	BMF Accelerated Mode	XCF Castout Lock Retries	BMF Accelerated Mode Pct	Current BMF Read Hit Pct
Above the bar	DEMOPLX	0	0.0	0	0	0	0.0	0	0.0	0	0	0.0	0.0
Below the bar	DEMOPLX	0	0.0	925	2781	2363	9.4	418	15.6	0	8	0.0	0.0

[RLS Buffer LSU Detail](#)  
[Link Wizard...](#)  
[Link Anchor...](#)

Storage Class	System Sysplex Name	Average Response Time	DIWA Lock Requests	DIWA Lock Requests per Minute	DIWA Lock True Contention Pct	DIWA Lock True Contention Min	DIWA Lock Percent	BMF Requests	BMF Requests per Minute	BMF False Invalid percent	BMF False Invalids	BMF False Invalids per Minute	Lock Requests	Lock Requests per Minute	Lock Contention Percent	False Lock Contention Pct	True Lock Contention Pct	Lock Req True Contention Min	Direct Access Requests Total	Direct Reques
RLSSC	DEMOPLX	1.47	0	0.00	0.0	0.00	0.0	3706	1,140.30	0.0	2	0.61	891	274.15	0.0	0.0	0.0	0.00	2742	

Hub Time: Fri, 08/01/2014 07:27 PM Server Available RLS Summary - dem21Inx.democentral.ibm.com - Vickie Dault

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# V520 Features

## Record Level Sharing Buffer Details

RLS Buffer LSU Detail - dem21Inx.democentral.ibm.com - Vickie Dault

File Edit View Help

Navigator View: Physical

- Cache CU Status
- Logical Control Unit
- Tape Group
- Virtual Tape Subsystems
- SMS Storage Groups Performance
- SMS Storage Groups Space
- User DASD Groups Performance
- User DASD Groups Space
- DFSMShsm Status MVSA
- Tape Management Status
- Record Level Sharing**
- Dataset Attributes System Summary
- Dataset Configuration Summary
- SMS Configuration

KFWITM025I 2 Navigator updates pending

Physical

Sysplex Level Above the Bar Buffers

Buffer Pool Size KB	Avg Minimum Buffers	Avg Maximum Buffers	Avg Current Buffers	Avg Minimum Extents	Avg Maximum Extents	Avg Cu Ext
2	0	0	0	0	0	0
4	0	0	0	0	0	0
8	0	0	0	0	0	0
16	37	62	62	1	1	1
32	0	0	0	0	0	0
64	0	0	0	0	0	0
128	0	0	0	0	0	0
256	0	0	0	0	0	0
512	0	0	0	0	0	0
1024	0	0	0	0	0	0
2048	0	0	0	0	0	0
4096	0	0	0	0	0	0
8192	0	0	0	0	0	0
16384	0	0	0	0	0	0

Sysplex Level Below the Bar Buffers

Buffer Pool Size KB	Avg Minimum Buffers	Avg Maximum Buffers	Avg Current Buffers	Avg Minimum Extents	Avg Maximum Extents	Avg Current Extents	Minimum Buffers	Maximum Buffers
2	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0
16	37	62	62	1	1	1	1	111
32	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0
128	0	0	0	0	0	0	0	0
256	0	0	0	0	0	0	0	0
512	0	0	0	0	0	0	0	0
1024	0	0	0	0	0	0	0	0
2048	0	0	0	0	0	0	0	0
4096	0	0	0	0	0	0	0	0
8192	0	0	0	0	0	0	0	0
16384	0	0	0	0	0	0	0	0

Sysplex Level Buffer Pool Summary

Location	BMF Panic Mode Pct	BMF Panic Mode	BMF Accelerated Mode Pct	BMF Accelerated Mode
Above the bar	0.0	0	0.0	0.0
Below the bar	0.0	0	0.0	0.0

Local Level Above the Bar Buffer Pool Summary

System Sysplex Name	BMF Panic Mode Pct	BMF Panic Mode	BMF Accelerated Mode Pct	BMF Accelerated Mode
DEMOMVS2	0.0	0	0.0	0.0
DEMOMVS3	0.0	0	0.0	0.0
DEMOMVS	0.0	0	0.0	0.0

Local Level Below the Bar Buffer Pool Summary

System Sysplex Name	BMF Panic Mode Pct	BMF Panic Mode	BMF Accelerated Mode Pct	BMF Accelerated Mode
DEMOMVS2	0.0	0	0.0	0.0
DEMOMVS3	0.0	0	0.0	0.0
DEMOMVS	0.0	0	0.0	0.0

Sysplex: DEMOPLX

Hub Time: Tue, 08/05/2014 11:09 AM

Server Available

RLS Buffer LSU Detail - dem21Inx.democentral.ibm.com - Vickie Dault

# V520 Features

## Record Level Sharing

RLS Summary - dem21lnx.democentral.ibm.com - Vickie Dault

File Edit View Help

Navigator View: Physical

- DFSMSshm Status MVSA
- Tape Management Status
- Record Level Sharing**
- Dataset Attributes System Summary
- Dataset Group Summary
- SMS Configuration
- Storage Toolkit
- Copy Services
- System Automation for z/OS
- Tivoli Decision Support for z/OS
- WebSphere Agent
- z/OS Management Console

Storage Dashboard Physical

Lock Structure Summary

Lock Name	Sysplex Name	Entries Used Pct	Total Entries	Used Entries	Structure Size	Lock Mode	Lock Status	Primary Version	Secondary Version	Duplex Time
IGWLOCK00	DEMOPLX	0.0	3593	2	3072	Simplex	Enabled	CD81F772465DDA6		0

RLS Lock Structure CF Details

RLS Overview

Lock Name	System Sysplex Name	Systems Reporting	Interval	Lock Rate	Contention Rate	False Cont Rate	Avg Queue Length	Statistics Level
IGWLOCK00	DEMOPLX	3	1 day	0.013	0.000	0.000	0.000	Sysplex
IGWLOCK00	DEMOPLX	3	8 hours	0.041	0.000	0.000	0.001	Sysplex
IGWLOCK00	DEMOPLX	3	1 hour	0.330	0.000	0.000	0.009	Sysplex
IGWLOCK00	DEMOPLX	3	1 minute	1.650	0.000	0.000	0.555	Sysplex

Lock Table System DIWA Lock DIWA Lock DIWA Lock True DIWA Lock True ATE Lock False ATE Lock False Exp Path True Exp Path False Cont Lock Req Main Path True Main Path True Cont Lock Req Rec Lock True Rec Lock Req Upgrade Locks Upg Locks True DIWA Lock DIWA Lock False Maint

**Buffer LSU Summary**

Location	System Sysplex Name	BMF Panic Mode Pct	BMF Panic Mode	BMF Accelerated Mode Pct	BMF Accelerated Mode	XCF Castout Lock Cont Retry Pct	XCF Castout Lock Retries	Current BMF Read Hit Pct	Min BMF Read Hit Pct	Curr Recursive Local CI Ref Pct
Above the bar	DEMOPLX	0.0	0	0.0	0	0.0	0	3.1	0.0	0.0
Below the bar	DEMOPLX	0.0	0	0.0	0	4.7	14	3.1	0.0	0.0

Storage Class Summary

Storage Class	System Sysplex Name	Average Response Time	DIWA Lock Requests	DIWA Lock Requests per Minute	DIWA Lock True Contention Pct	DIWA Lock True Contention Min	DIWA Lock Percent	BMF Requests	BMF Requests per Minute	BMF False Invalid percent	BMF False Invalids	BMF False Invalids per Minute	Lock Requests	Lock Requests per Minute	Lock Contention Percent	False Lock Contention Pct	True Lock Contention Pct	Lock Req True Contention Min	Direct Access Requests Total	Direct Requests
RLSSC	DEMOPLX	1.47	0	0.00	0.0	0.00	0.0	3706	1,140.30	0.0	2	0.61	891	274.15	0.0	0.0	0.0	0.00	2742	

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# V520 Features



RLS Summary - dem21Inx.democentral.ibm.com - Vickie Dault

File Edit View Help

Navigator View: Physical

- DFSMSshm Status MIVSA
- Tape Management Status
- Record Level Sharing**
- Dataset Attributes System Summary
- Dataset Group Summary
- SMS Configuration
- Storage Toolkit
- Copy Services
- System Automation for z/OS
- Tivoli Decision Support for z/OS
- WebSphere Agent
- z/OS Management Console

Storage Dashboard Physical

### RLS Lock Structure CF Details

Lock Name	Sysplex Name	Entries Used Pct	Total Entries	Used Entries	Structure Size	Lock Mode	Lock Status	Primary Version	Secondary Version	Duplex Time
IGWLOCK00	DEMOPLX	0.0	3593	2	3072	Simplex	Enabled	CD81F772465DDA6		0

### RLS Overview

Lock Name	System Sysplex Name	Systems Reporting	Interval	Lock Rate	Contention Rate	False Cont Rate	Avg Queue Length	Statistics Level
IGWLOCK00	DEMOPLX	3	1 day	0.013	0.000	0.000	0.000	Sysplex
IGWLOCK00	DEMOPLX	3	8 hours	0.041	0.000	0.000	0.001	Sysplex
IGWLOCK00	DEMOPLX	3	1 hour	0.330	0.000	0.000	0.009	Sysplex
IGWLOCK00	DEMOPLX	3	1 minute	1.650	0.000	0.000	0.555	Sysplex

### Lock Structure Summary

Lock Table Name	System Sysplex Name	DWA Lock Requests	DWA Lock Requests per Minute	DWA Lock True Contention Pct	DWA Lock True Contention Min	ATE Lock False Cont Pct	ATE Lock False Cont Per Minute	Exp Path True Contention Pct	Exp Path False Cont Lock Req Per Minute	Main Path True Contention Pct	Main Path True Cont Lock Req Per Minute	Rec Lock True Contention Pct	Rec Lock True Cont Minute	Upgrade Locks True Cont Pct	Upp Locks True Cont Per Minute	DWA Lock False Contention	DWA Lock False Contention Minute	Maint Lock F
IGWLOCK00	DEMOPLX	0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	

### Buffer LRU Summary

Location	System Sysplex Name	BMF Panic Mode Pct	BMF Panic Mode	BMF Accelerated Mode Pct	BMF Accelerated Mode	XCF Castout Lock Cont Retry Pct	XCF Castout Lock Retries	Current BMF Read Hit Pct	Min BMF Read Hit Pct	Curr Recursive Local Cl Ref Pct	Minimum CF Cache Read Hit Pct	Average CF Cache Read Hit Pct	Current DASD Hit Pct	Avg Recursive Local Cl Ref Pct	Average Local Cl Refresh Pct	BMF Write Requests	Total BMF Requests	Total BMF Read Hits	Max BMF Read Hit Pct	Total R
Above the bar	DEMOPLX	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0.0	
Below the bar	DEMOPLX	0.0	0	0.0	0	15.6	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	925	2781	2363	9.4	

### Storage Class Summary

Storage Class	System Sysplex Name	Lock Requests	Average Response Time	Direct Access Requests Total	Direct Access Requests Minute	BMF Requests	BMF Requests per Minute	BMF False Invalids	BMF False Invalids per Minute	Lock Requests per Minute	BMF False Invalid percent	Lock Contention Percent	False Lock Contention Pct
RLSSC	DEMOPLX	7722	1.48	23396	780.30	31348	1,045.51	54	1.80	257.54	0.2	0.0	0.0

- RLS Storage Class Details
- RLS Storage Class Datasets
- Link Wizard...
- Link Anchor...

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# V520 Features

## Record Level Sharing

SAMPLE\_SMSConfig\_w\_Link - dem21lnx.democentral.ibm.com - Vickie Dault

File Edit View Help

Navigator View: Physical

- User DASD Groups Performance
- User DASD Groups Space
- DFSMSshm Status MVSA
- Tape Management Status
- Record Level Sharing
- Dataset Attributes System Summary
- Dataset Group Summary
- SMS Configuration
- Storage Toolkit
- Copy Services
- System Automation for z/OS
- Tivoli Decision Support for z/OS
- WebSphere Agent
- z/OS Management Console

Storage Dashboard Physical

SMS Base Configuration

SMS Status	SMS Level	MVS Level	Last Update User ID	Last Updated	Default Management Class	Default Tracks per Cylinder	Default Track Size	Default Unit Type
Active	2.1.0	SP7.2.1	PLS	03/25/14 13:53:00		15	47476	SYSDA

Storage Groups

Storage Group Name	Storage Group Type	Last Update User ID	Last Updated	Description	Extend Storage Group	Copy Pool Storage Group	Overflow Storage Group
DB2FLASH	Copy Pool Backup	KLTAYLO	06/30/14 15:07:00	FLASH COPY POOL			No
DB2LARGE	Pool	KLTAYLO	10/16/12 14:53:00	LARGE DATABASE			No
DLGROUP	Pool	PLS	02/17/00 14:05:00	DLIB DATASETS			No

Storage Classes

Storage Class Name	Last Update User ID	Last Updated	Description	Cache Set Name
BASE	KLTAYLO	04/12/10 10:04:00	PRODUCT DATASETS	
DB2DASD	SYSSMS	05/05/93 13:43:00	IMAGE/OAM DB2 STORAGE CLASS	
DB2XLSC	KLTAYLO	07/26/12 06:23:00	LARGE DB2 STORAGE CLASS	
DLBASE	PLS	02/17/00 14:04:00	DLIB DATASETS	
DMBASE	PLS	10/28/05 16:24:00	DATAMANAGEMENT DATASETS	
FLASHSC	KLTAYLO	06/30/14 15:11:00		
HSMBASE	KLTAYLO	04/12/10 10:04:00	HSM MANAGEMENT DATASETS	
IMSBASE	PLS	03/15/13 15:58:00		
NOVIO	SYSSMS	04/28/93 11:09:00	STORAGE CLASS FOR NON-VIO ALLOCATIONS	
OSBASE	PLS	02/17/00 14:05:00	OPERATING SYSTEM DATASETS	
RLSSC	PLS	12/17/13 17:26:00		CS1
SCSIEBEL	PLS	11/19/04 17:30:00	SIEBEL DATASETS	
SCTAPE	PLS	08/20/08 10:15:00	STORAGE CLASS FOR AUTOMATIC TAPE LIBRARY (ATL1)	
SGDEMO	KLTAYLO	04/12/10 10:05:00	CANDLE DEMO DATASETS	
TEMPDASD	KLTAYLO	04/12/10 11:33:00	TEMPORARY HSM STORAGE	
TSMBASE	LIZH	03/11/05 13:24:00		
USRBASE	PLS	02/17/00 14:05:00	USER DATASETS	
WRKBASE	PLS	12/18/13 13:12:00	WORK DATASETS	

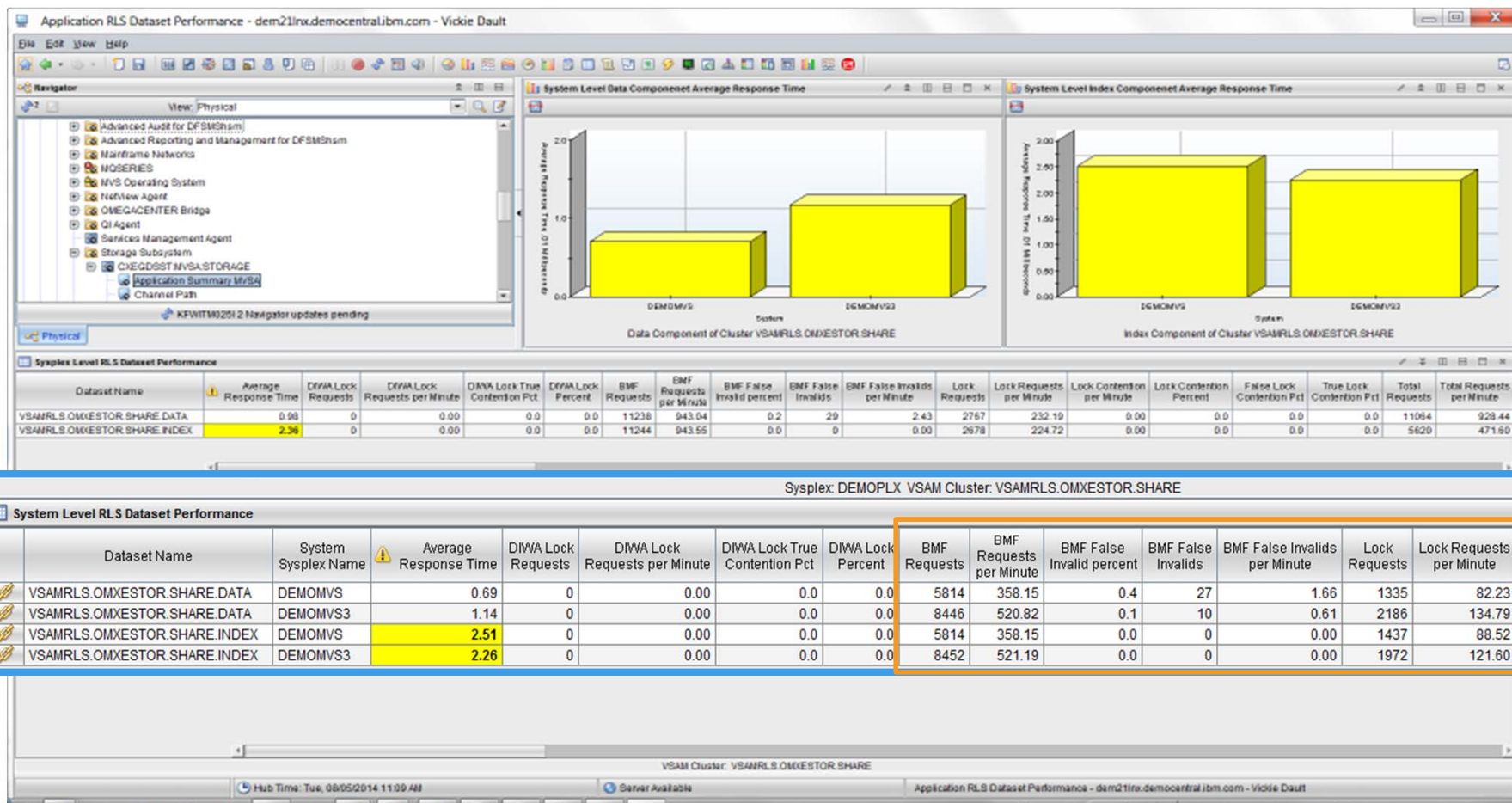
Data Classes

Data Class Name	Last Update User ID	Last Updated	Description	Man Class
DB2EDC	KLTAYLO	09/17/12 11:07:00	DATA CLASS FOR DB2 CATALOG AND DIR	DLIC
DCHSM	PLS	08/20/08 10:12:00	DATA CLASS FOR HSM FILES	DMK
DCMOD9	PLS	08/20/08 10:13:00	DATA CLASS TO SUPPORT VSAM USE OF	HSM
DCTAPE	PLS	08/20/08 10:13:00	DATA CLASS FOR ATL1 3590-J	HSM
DCTAPEJ	PLS	08/20/08 10:14:00	DATA CLASS FOR ATL1 3590-J	IMSM
DCTAPEJA	PLS	09/02/09 23:40:00	DATA CLASS FOR ATL2 3592-JA	MAGC
DCTAPEJB	PLS	08/20/08 10:14:00	DATA CLASS FOR ATL2 3592-JB	MCAE
DCVSAM33	PLS	12/17/07 11:25:00	DATA CLASS FOR VSAM FILES SHARE OP	MCDP
NODSORG	KLTAYLO	05/02/11 11:44:00	DATA CLASS NOT DSORG	MCSN
SEQCOMP	PLS	07/22/13 11:27:00	COMPRESSION FOR SEQUENTIAL DATAS	MCTA

Hub Time: Sat, 08/02/2014 12:26 PM Server Available SAMPLE\_SMSConfig\_w\_Link - dem21lnx.democentral.ibm.com - Vickie Dault

# V520 Features

## Record Level Sharing RLS Dataset Performance Details



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# Agenda

- V530 Announcement
  - Features
    - New product dynamic Workspace Links
    - Up to 15% Reduction in CPU for Space and Cache
    - Dataset Attributes Database Extraction DAGX
- V520 Examples
  - CA1
  - Record Level Sharing
    - Application Summary
    - Record level Sharing
    - Storclas
  - z/OS Copy Services
    - XRC
    - PPRC
    - FlashCopy
  - Miscellaneous APARS/PTFS



# V520 Features

## Copy Services functions\*

### Advanced Copy Services

#### Dynamic Copy

**Extended Remote Copy XRC** *Global mirror for zSeries*

CKD Devices ONLY z/OS z/vm Linux on System z

#### PPRC *Synchronous Metro Mirror for ESS*

*Channel End/Device End when I/O to both Primary and Secondary are complete*

*aSynchronous Global Mirror for ESS*

**PPRC Extended Distance PPRC-XD**

**Metro Global copy PPRC and PPRC-XD**

*PPRC-XD Combines Flashcopy Consistency Groups . Interval is user specified*

CKD Devices and Fixed Block

#### Point in Time Copy

**FLASHCOPY** *Full volume | Set of tracks*

CKD Devices and Fixed Block



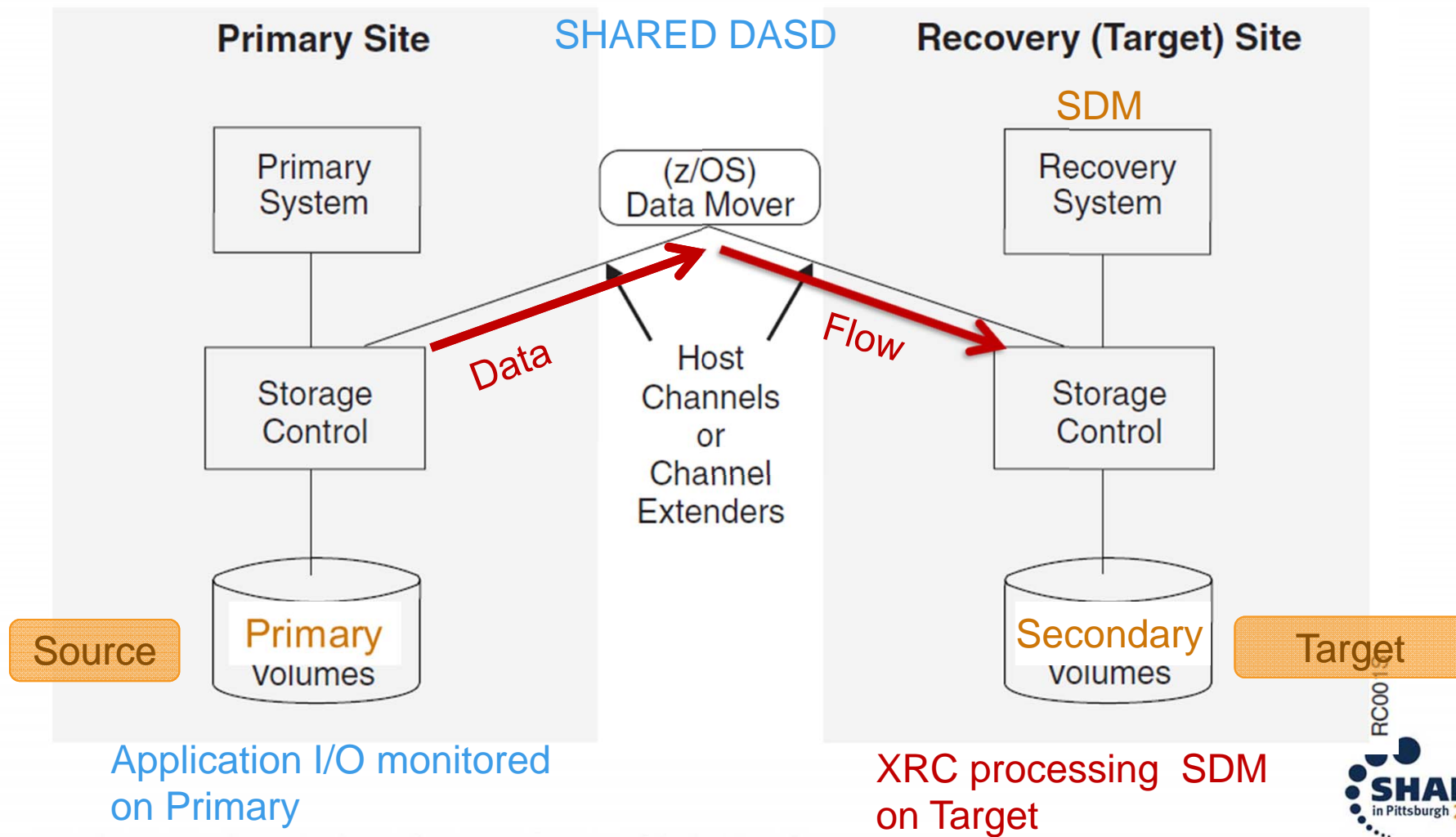
- IBM FlashCopy®, Metro Mirror, Global Mirror, Metro/Global Mirror and Global Copy provide flexible replication services to address backup and business-continuity needs.

Reference DFSMS Advanced Copy Services SC35-0428-19

Complete your session evaluations online at [www.SHARE.org/Pittsburgh-Eval](http://www.SHARE.org/Pittsburgh-Eval)

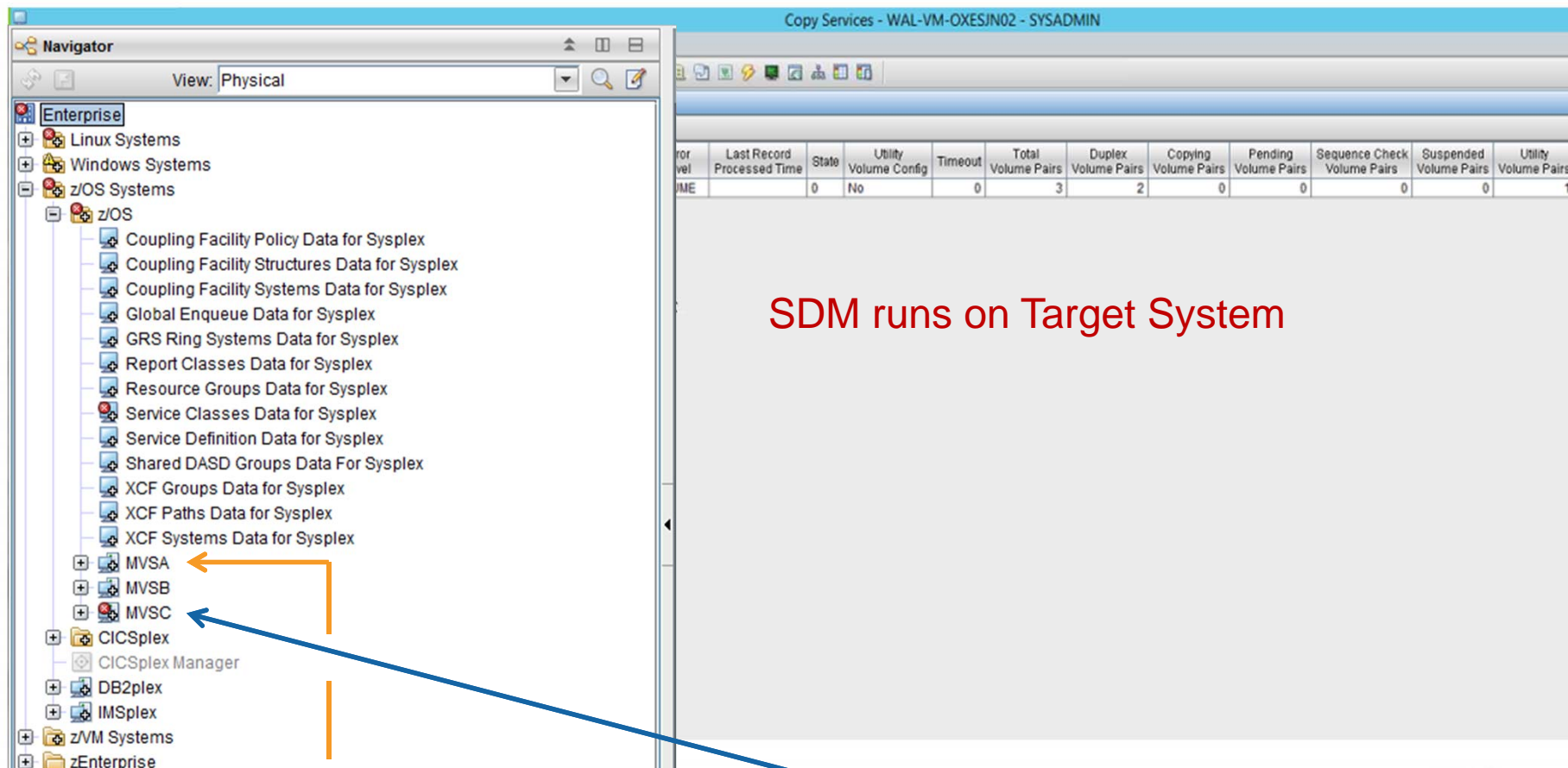
# V520 Features

## Copy Services XRC



# V520 Features

## Copy Services XRC choosing the system to monitor



The screenshot shows the 'Copy Services - WAL-VM-OXESJN02 - SYSADMIN' interface. On the left is a 'Navigator' pane with a tree view of systems. The 'z/OS' folder is expanded, showing various data sets for Sysplex and other systems like MVSA, MVSB, and MVSC. On the right is a table with columns: Error Level, Last Record Processed Time, State, Utility Volume Config, Timeout, Total Volume Pairs, Duplex Volume Pairs, Copying Volume Pairs, Pending Volume Pairs, Sequence Check Volume Pairs, Suspended Volume Pairs, and Utility Volume Pairs. The table contains one row of data.

Error Level	Last Record Processed Time	State	Utility Volume Config	Timeout	Total Volume Pairs	Duplex Volume Pairs	Copying Volume Pairs	Pending Volume Pairs	Sequence Check Volume Pairs	Suspended Volume Pairs	Utility Volume Pairs
IME		0	No	0	3	2	0	0	0	0	1

SDM runs on Target System

Application I/O monitored on Primary

XRC processing on Secondary

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# V520 Features

## Copy Services XRC

PRIMARY SECONDARY VOLUME PAIRS

64 session limitation for each Enterprise Storage Subsystem (ESS) , but only 4 sessions per SSID

SDM address space [ANTAS000](#) TSO commands and API Requests and control functions

[ANTAS001-020\\*](#) in response to each XSTART cmd  
Up to 20 XRC sessions per LPAR if not clustered

[ANTCL001-019](#) clustered sessions

1 row per session in OMEGAMON XE for Storage  
Reference DFSMS Advanced Copy Services SC35-0428-19

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# V520 Features

## Copy Services XRC

### VOLUME PAIR Status

**Copy**            Currently Synchronizing – in session not yet been duplexed  
**not consistent with source**

**Duplex**            synchronization has completed – **consistent with source**

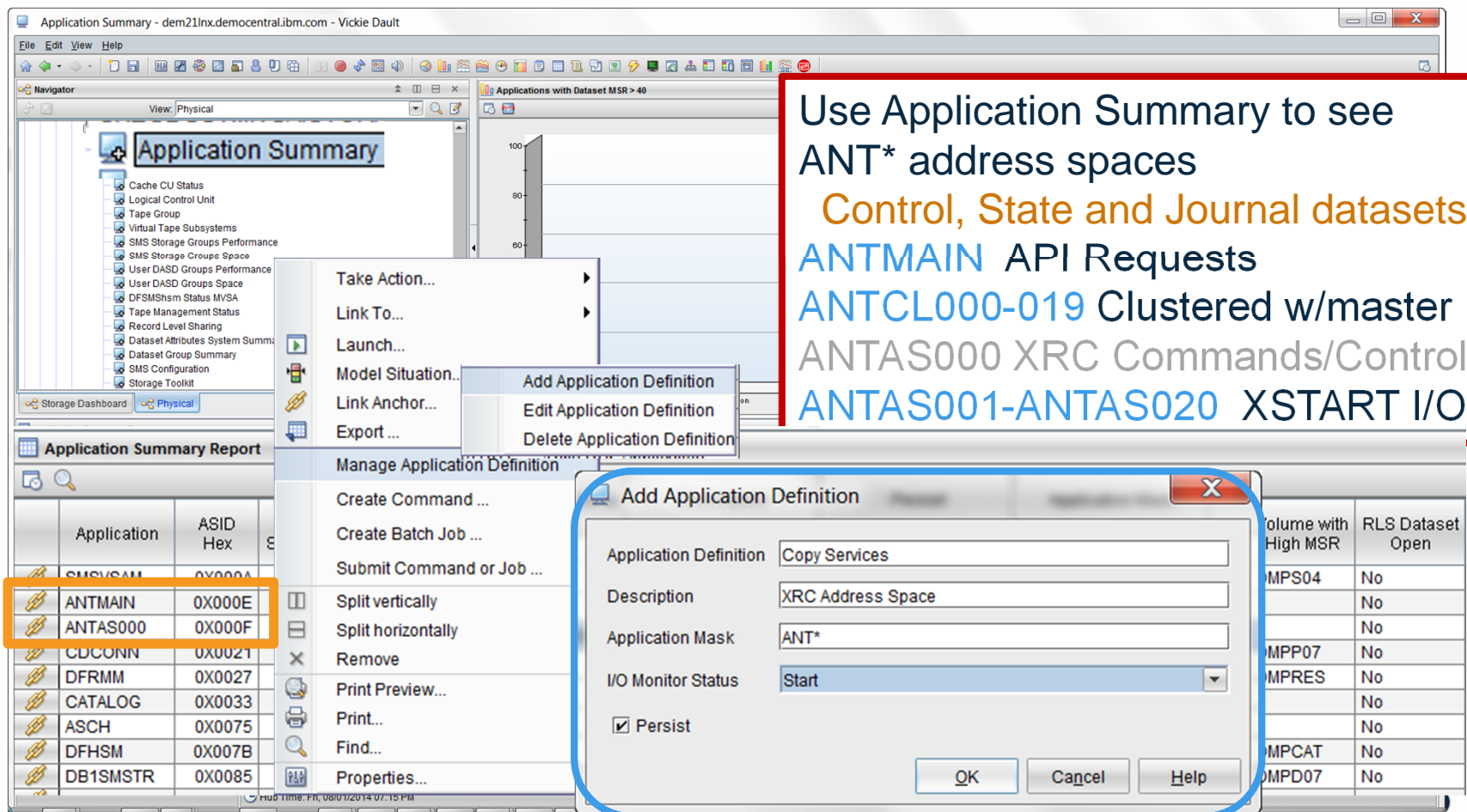
**Pending**            Volume Pair defined, no synchronization not in session

**Seqcheck**            Volume pair with non-timestamped writes  
Data consistency is uncertain at the moment  
status set to duplex when timestamp is written to  
secondary volume

**Suspended**            Volume Pair established  
in session and recording changes but not mirroring  
updates

# V520 Features

## Copy Services – XRC Address space Monitoring



Use Application Summary to see ANT\* address spaces

- Control, State and Journal datasets
- ANTMAIN API Requests
- ANTCL000-019 Clustered w/master
- ANTAS000 XRC Commands/Control
- ANTAS001-ANTAS020 XSTART I/O

Application	ASID Hex	Volume with High MSR	RLS Dataset Open
SMSVSAM	0X000A		
ANTMAIN	0X000E		
ANTAS000	0X000F	MPS04	No
CDCONN	0X0021		No
DFRMM	0X0027	MPP07	No
CATALOG	0X0033	MPRES	No
ASCH	0X0075		No
DFHSM	0X007B		No
DB1SMSTR	0X0085	MPCAT	No
		MPD07	No

**Add Application Definition**

Application Definition: Copy Services

Description: XRC Address Space

Application Mask: ANT\*

I/O Monitor Status: Start

Persist

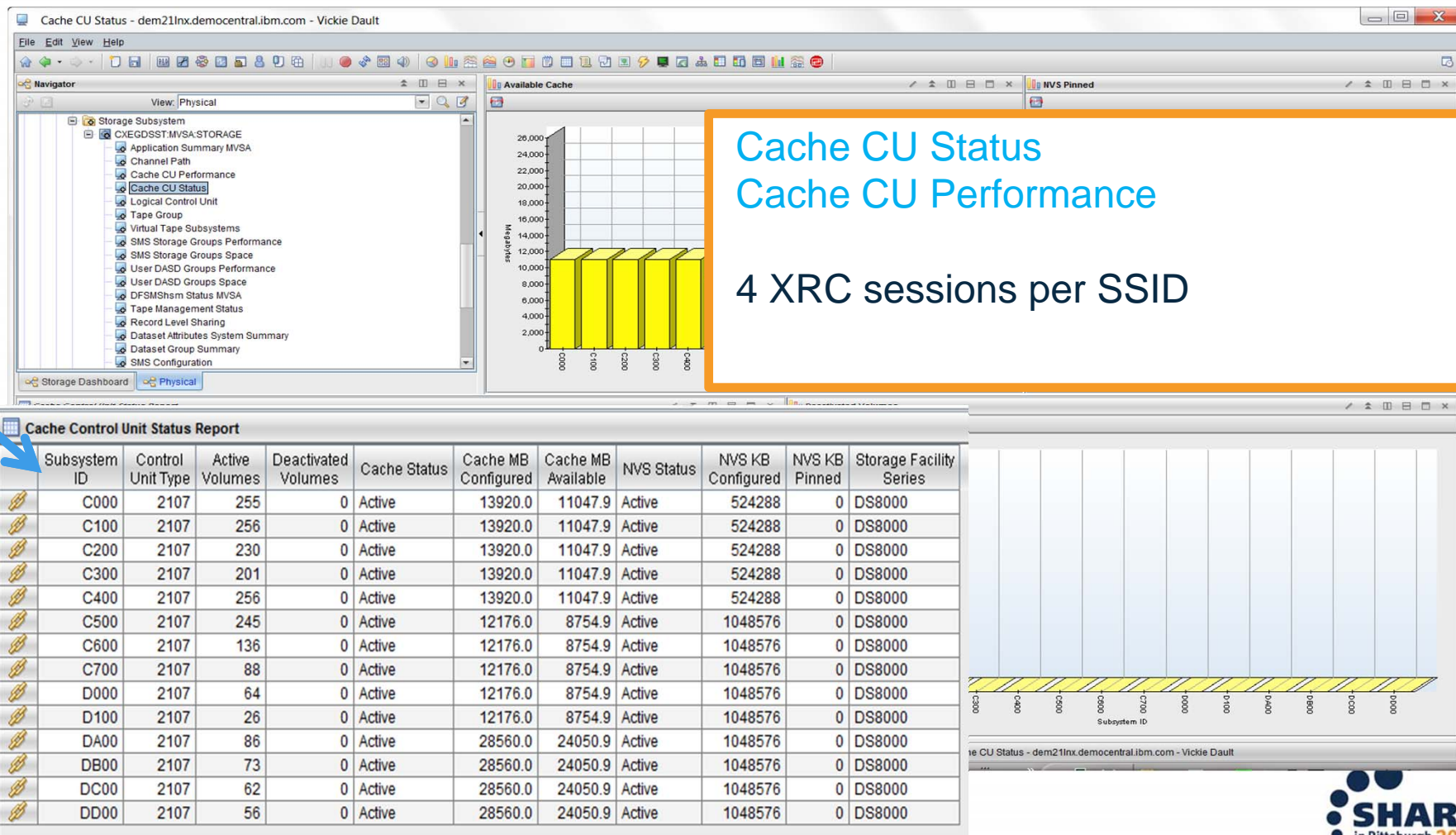
Buttons: OK, Cancel, Help

### Target System

Complete your session evaluations online at [www.SHARE.org/Pittsburgh-Eval](http://www.SHARE.org/Pittsburgh-Eval)

# V520 Features

## Copy Services – XRC Session limits per SSID



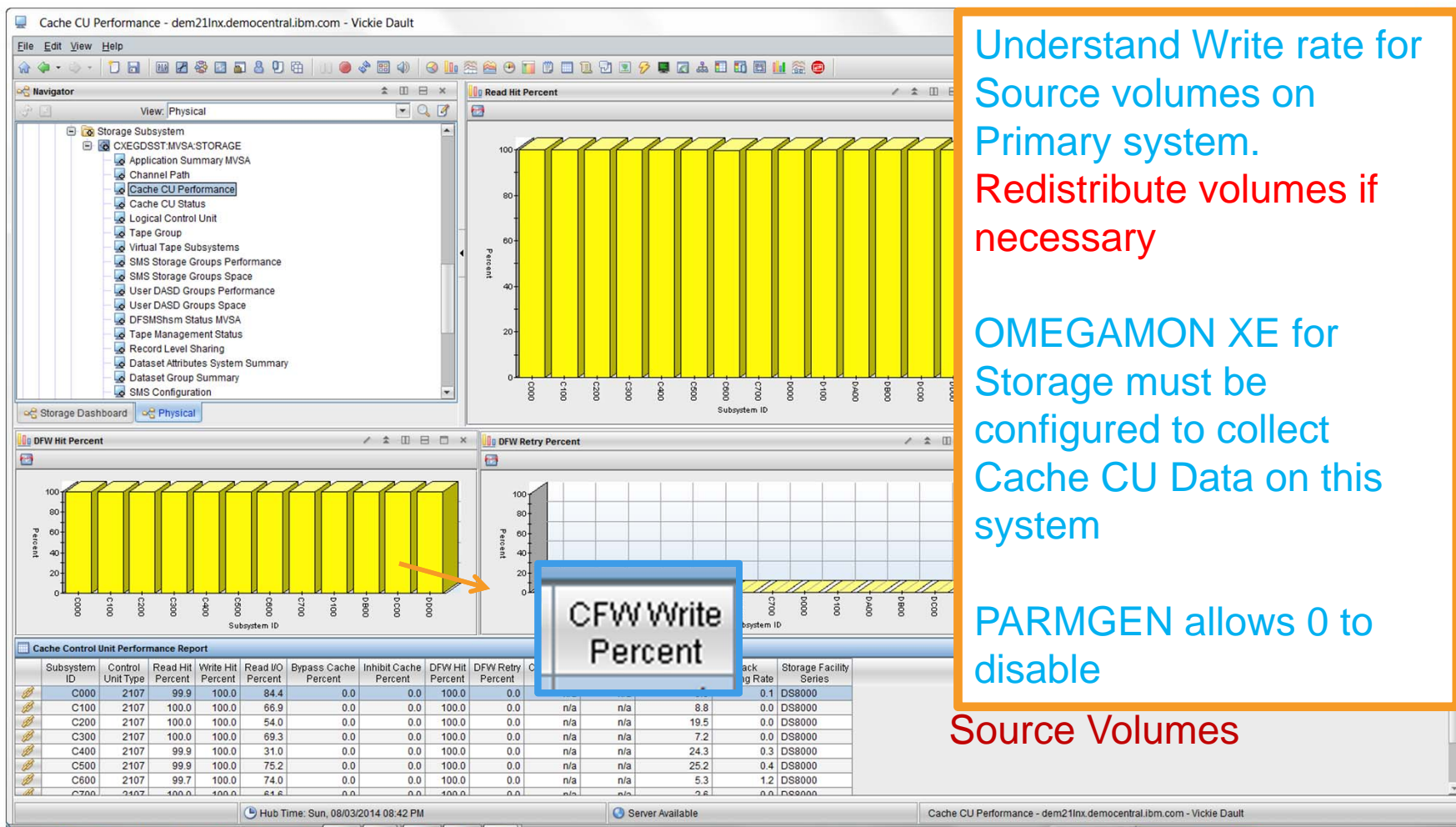
**Cache CU Status**  
**Cache CU Performance**  
**4 XRC sessions per SSID**

Subsystem ID	Control Unit Type	Active Volumes	Deactivated Volumes	Cache Status	Cache MB Configured	Cache MB Available	NVS Status	NVS KB Configured	NVS KB Pinned	Storage Facility Series
C000	2107	255	0	Active	13920.0	11047.9	Active	524288	0	DS8000
C100	2107	256	0	Active	13920.0	11047.9	Active	524288	0	DS8000
C200	2107	230	0	Active	13920.0	11047.9	Active	524288	0	DS8000
C300	2107	201	0	Active	13920.0	11047.9	Active	524288	0	DS8000
C400	2107	256	0	Active	13920.0	11047.9	Active	524288	0	DS8000
C500	2107	245	0	Active	12176.0	8754.9	Active	1048576	0	DS8000
C600	2107	136	0	Active	12176.0	8754.9	Active	1048576	0	DS8000
C700	2107	88	0	Active	12176.0	8754.9	Active	1048576	0	DS8000
D000	2107	64	0	Active	12176.0	8754.9	Active	1048576	0	DS8000
D100	2107	26	0	Active	12176.0	8754.9	Active	1048576	0	DS8000
DA00	2107	86	0	Active	28560.0	24050.9	Active	1048576	0	DS8000
DB00	2107	73	0	Active	28560.0	24050.9	Active	1048576	0	DS8000
DC00	2107	62	0	Active	28560.0	24050.9	Active	1048576	0	DS8000
DD00	2107	56	0	Active	28560.0	24050.9	Active	1048576	0	DS8000

Complete your session evaluations online at [www.SHARE.org/Pittsburgh-Eval](http://www.SHARE.org/Pittsburgh-Eval)

# V520 Features

## Copy Services – XRC Performance **PRIMARY LPAR**



Cache CU Performance - dem21lnx.democentral.ibm.com - Vickie Dault

Understand Write rate for Source volumes on Primary system.  
 Redistribute volumes if necessary

OMEGAMON XE for Storage must be configured to collect Cache CU Data on this system

PARMGEN allows 0 to disable

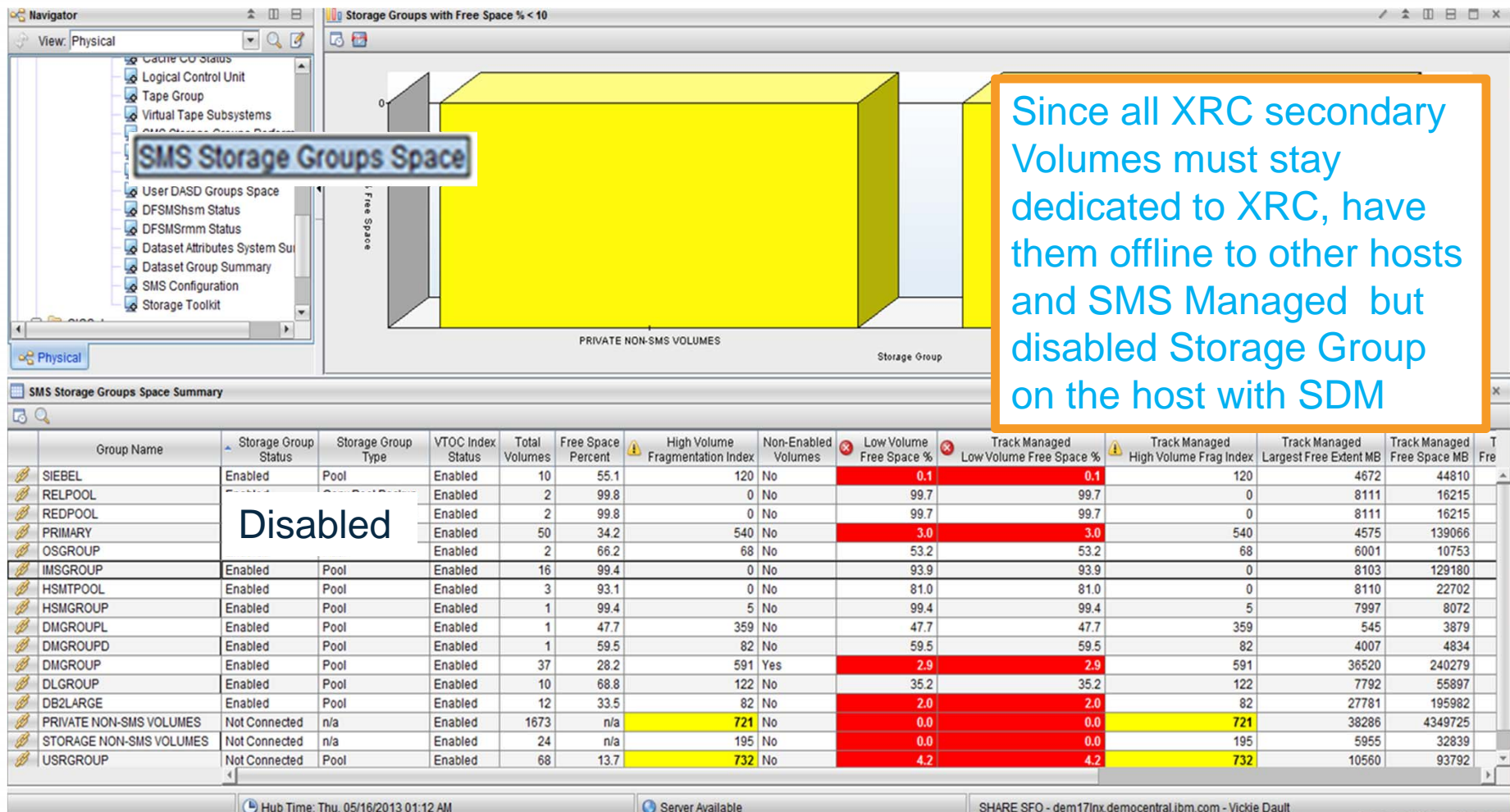
**Source Volumes**

Subsystem ID	Control Unit Type	Read Hit Percent	Write Hit Percent	Read I/O Percent	Bypass Cache Percent	Inhibit Cache Percent	DFW Hit Percent	DFW Retry Percent	Backlog Rate	Storage Facility Series
C000	2107	99.9	100.0	84.4	0.0	0.0	100.0	0.0	0.1	DS8000
C100	2107	100.0	100.0	66.9	0.0	0.0	100.0	0.0	n/a	DS8000
C200	2107	100.0	100.0	54.0	0.0	0.0	100.0	0.0	n/a	DS8000
C300	2107	100.0	100.0	69.3	0.0	0.0	100.0	0.0	n/a	DS8000
C400	2107	99.9	100.0	31.0	0.0	0.0	100.0	0.0	n/a	DS8000
C500	2107	99.9	100.0	75.2	0.0	0.0	100.0	0.0	n/a	DS8000
C600	2107	99.7	100.0	74.0	0.0	0.0	100.0	0.0	n/a	DS8000
C700	2107	100.0	100.0	61.6	0.0	0.0	100.0	0.0	n/a	DS8000



# V520 Features

## Copy Services – XRC Secondary Volumes **Secondary LPAR**

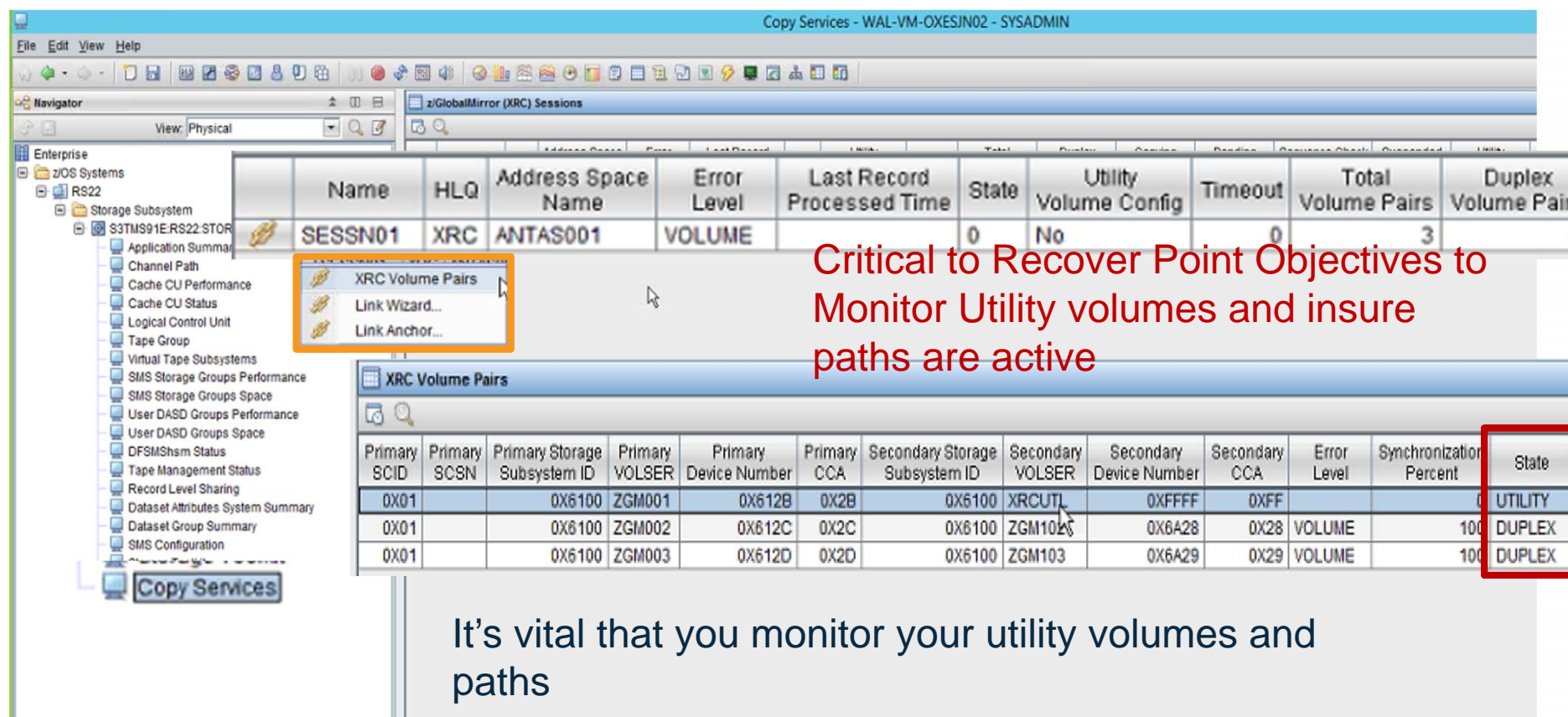


The screenshot displays the IBM Storage Management Console interface. The main window shows a 3D visualization of storage groups with a yellow callout box containing the text: "Since all XRC secondary Volumes must stay dedicated to XRC, have them offline to other hosts and SMS Managed but disabled Storage Group on the host with SDM". Below the visualization is a table titled "SMS Storage Groups Space Summary".

Group Name	Storage Group Status	Storage Group Type	VTOC Index Status	Total Volumes	Free Space Percent	High Volume Fragmentation Index	Non-Enabled Volumes	Low Volume Free Space %	Track Managed Low Volume Free Space %	Track Managed High Volume Frag Index	Track Managed Largest Free Extent MB	Track Managed Free Space MB	T Fre
SIEBEL	Enabled	Pool	Enabled	10	55.1	120	No	0.1	0.1	120	4672	44810	
RELPOOL	Enabled	Pool	Enabled	2	99.8	0	No	99.7	99.7	0	8111	16215	
REDPOOL	Enabled	Pool	Enabled	2	99.8	0	No	99.7	99.7	0	8111	16215	
PRIMARY	Enabled	Pool	Enabled	50	34.2	540	No	3.0	3.0	540	4575	139066	
OSGROUP	Enabled	Pool	Enabled	2	66.2	68	No	53.2	53.2	68	6001	10753	
IMSGROUP	Enabled	Pool	Enabled	16	99.4	0	No	93.9	93.9	0	8103	129180	
HSMTPool	Enabled	Pool	Enabled	3	93.1	0	No	81.0	81.0	0	8110	22702	
HSMGROUP	Enabled	Pool	Enabled	1	99.4	5	No	99.4	99.4	5	7997	8072	
DMGROUPL	Enabled	Pool	Enabled	1	47.7	359	No	47.7	47.7	359	545	3879	
DMGROUPL	Enabled	Pool	Enabled	1	59.5	82	No	59.5	59.5	82	4007	4834	
DMGROUPL	Enabled	Pool	Enabled	37	28.2	591	Yes	2.9	2.9	591	36520	240279	
DLGROUP	Enabled	Pool	Enabled	10	68.8	122	No	35.2	35.2	122	7792	55897	
DB2LARGE	Enabled	Pool	Enabled	12	33.5	82	No	2.0	2.0	82	27781	195982	
PRIVATE NON-SMS VOLUMES	Not Connected	n/a	Enabled	1673	n/a	721	No	0.0	0.0	721	38286	4349725	
STORAGE NON-SMS VOLUMES	Not Connected	n/a	Enabled	24	n/a	195	No	0.0	0.0	195	5955	32839	
USRGROUP	Not Connected	Pool	Enabled	68	13.7	732	No	4.2	4.2	732	10560	93792	

# V520 Features

## Copy Services XRC Sessions



**Critical to Recover Point Objectives to Monitor Utility volumes and insure paths are active**

Name	HLQ	Address Space Name	Error Level	Last Record Processed Time	State	Utility Volume Config	Timeout	Total Volume Pairs	Duplex Volume Pairs
SESSN01	XRC	ANTAS001	VOLUME		0	No	0	3	

Primary SCID	Primary SCSN	Primary Storage Subsystem ID	Primary VOLSER	Primary Device Number	Primary CCA	Secondary Storage Subsystem ID	Secondary VOLSER	Secondary Device Number	Secondary CCA	Error Level	Synchronization Percent	State
0X01		0X6100	ZGM001	0X612B	0X2B	0X6100	XRCUTL	0XFFFF	0XFF		0	UTILITY
0X01		0X6100	ZGM002	0X612C	0X2C	0X6100	ZGM102	0X6A28	0X28	VOLUME	100	DUPLEX
0X01		0X6100	ZGM003	0X612D	0X2D	0X6100	ZGM103	0X6A29	0X29	VOLUME	100	DUPLEX

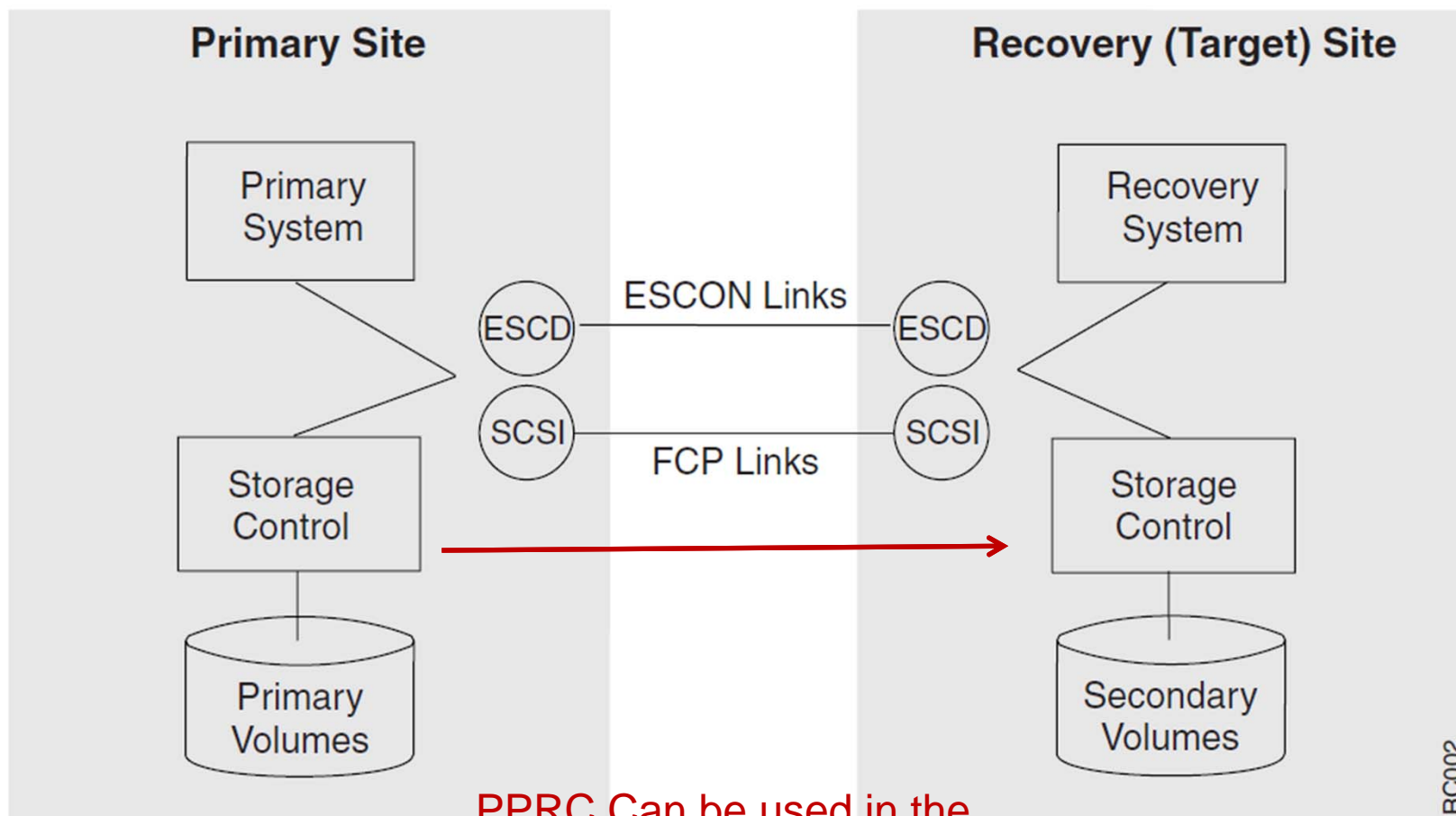
It's vital that you monitor your utility volumes and paths

Utility volumes specify the device to use for reading updates from the primary storage subsystem and should not be used for data storage

Complete your session evaluations online at [www.SHARE.org/Pittsburgh-Eval](http://www.SHARE.org/Pittsburgh-Eval)

# V520 Features

## Copy Services PPRC

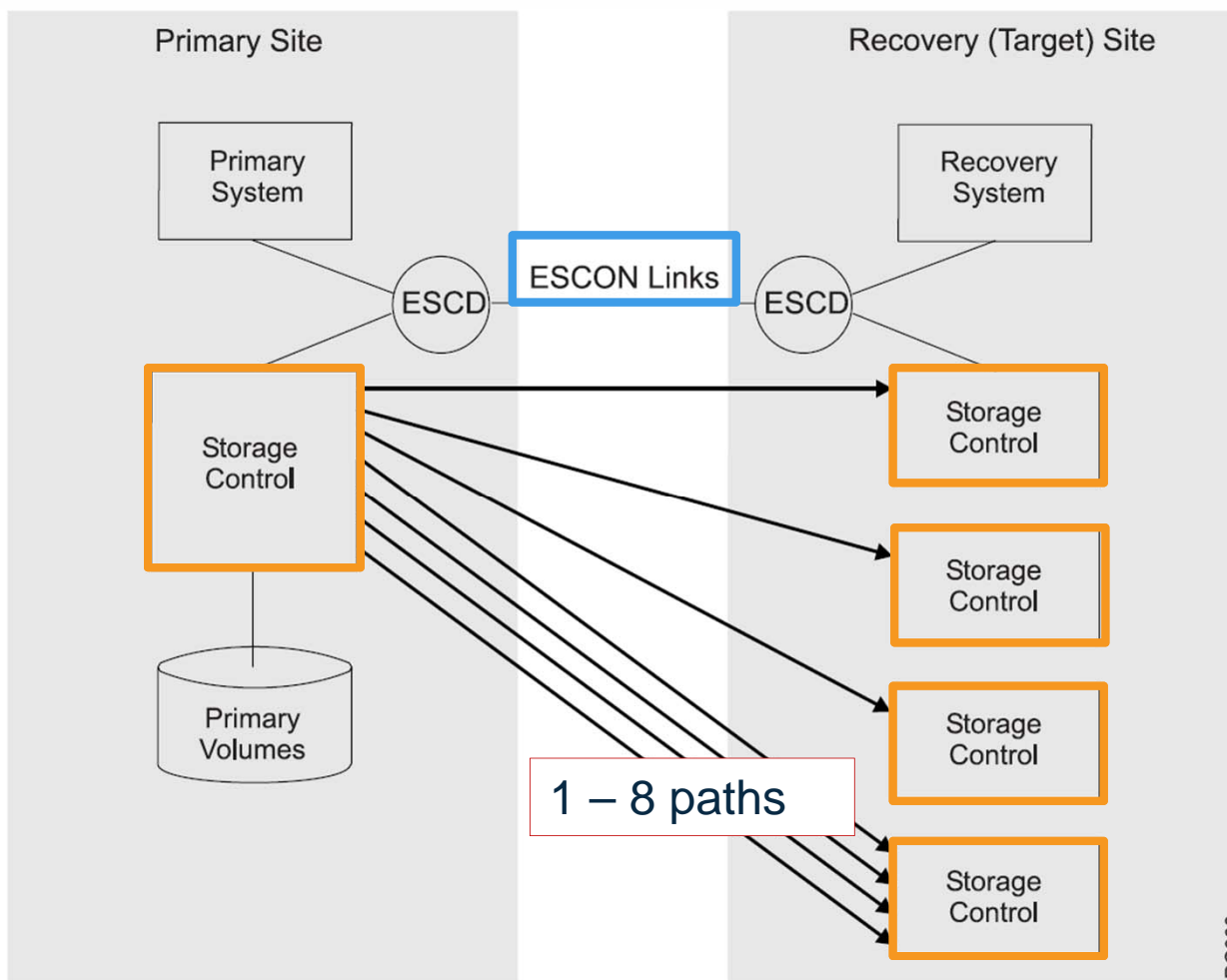


PPRC Can be used in the  
SYSPLEX for HA Hiperswap

RC002

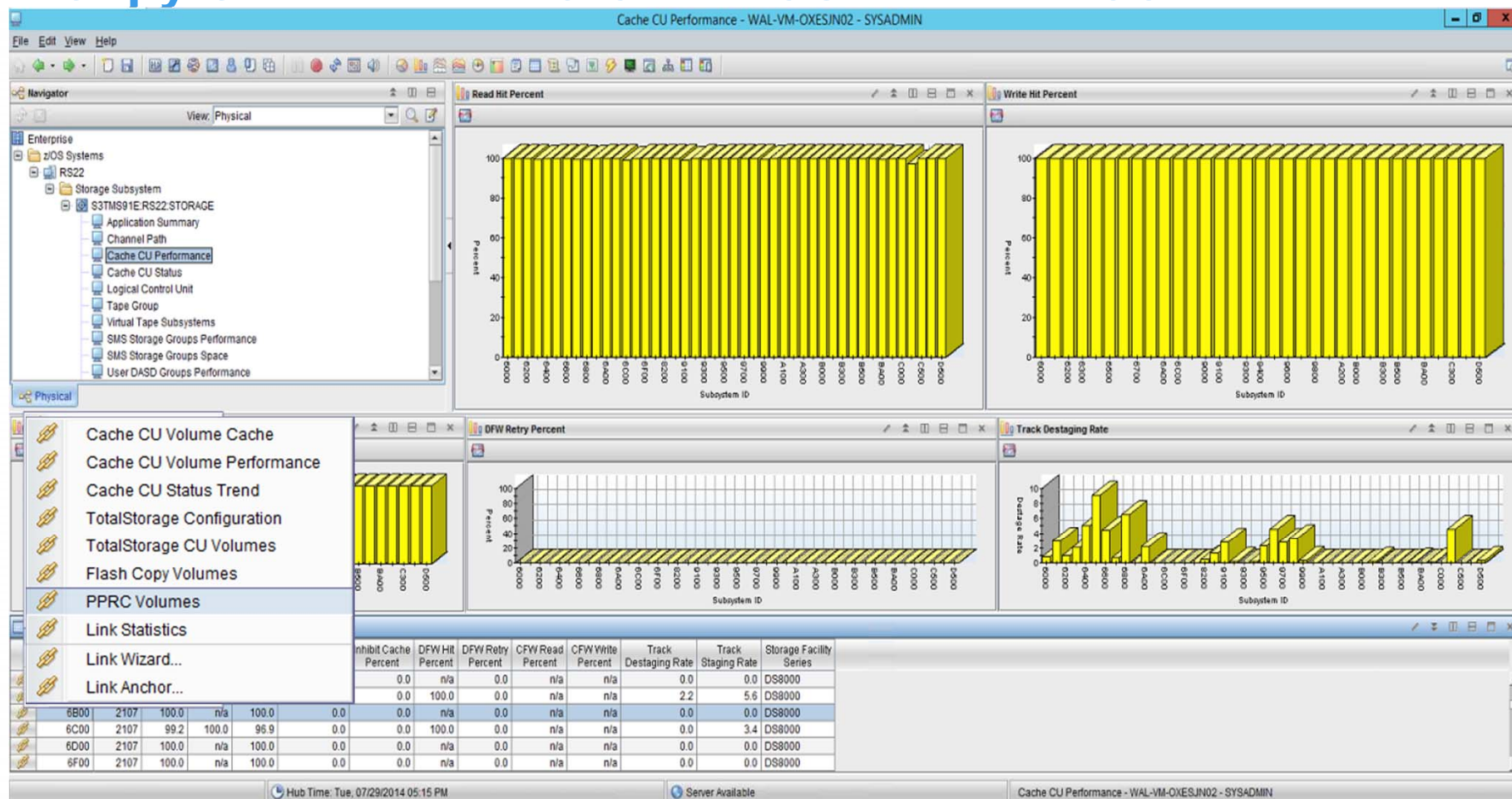
# V520 Features

## Copy Services PPRC



# V520 Features

## Copy Services PPRC Cache CU Link from SSID



# V520 Features

## Copy Services PPRC Volumes

PPRC Volumes				PPRC Volumes																	
VOLSER	Storage Group	Device Number		LSS	First Secondary CCA	First Secondary SSID	Copy State	Suspended XRC	Primary Volume	Secondary Volume	Consistency Group Member	Critical	VPD	Incremental Resync	PPRC XRC Hyperswap	XRC Session	CopyCross Session	Auto Resync Enabled	Withdrawn Preserve Mirror	First Trk Group Out of Sync	Last Trk Group Out of Sync
SIRB40	A3SY1SG	0X6B		0X57	0XAF	7500000ZL771	DUPLEX	N	Y	N	N	N	N	N	N	N	N	N	N	0	0
SIRB41	A3EX1SG	0X6B		0X57	0XB0	7500000ZL771	DUPLEX	N	Y	N	N	N	N	N	N	N	N	N	N	0	0
				0X57	0XB1	7500000ZL771	SUSPENDED ON SECONDARY INTERNAL	N	Y	N	N	N	N	N	N	N	N	N	N	0	615
				0X57	0XB2	7500000ZL771	DUPLEX	N	Y	N	N	N	N	N	N	N	N	N	N	0	0
				0X57	0XB3	7500000ZL771	DUPLEX	N	Y	N	N	N	N	N	N	N	N	N	N	0	0
				0X57	0XB4	7500000ZL771	DUPLEX	N	Y	N	N	N	N	N	N	N	N	N	N	0	0
SIRB46	A3DBSG	0X6B		0X57	0XB5	7500000ZL771	DUPLEX	N	Y	N	N	N	N	N	N	N	N	N	N	0	0
SIRB47	A3DBSG	0X6B		0X57	0XB6	7500000ZL771	DUPLEX	N	Y	N	N	N	N	N	N	N	N	N	N	0	0

PPRC Connections											
VOLSER	Device Number	Subchannel Set	Primary Storage Subsystem ID	Primary Logical Storage Subsys	Primary CCA	Primary Serial Number	Secondary SSID	Secondary LSS	Secondary Serial Number	Path Count	Primary Adapter
SIRB42	0X6B42	0X00	0X6B00	0X6B	0X42	0000000ZL771	0X6700	0X67	7500000ZL771	1	0X200

# V520 Features

## Copy Services PPRC Volume States

### PPRC Volume Status

Simplex Initial State

Pending Initial State when part of a volume pair - Copying

Pending.XD Same as Pending Extended Distances

Duplex Synchronization Complete

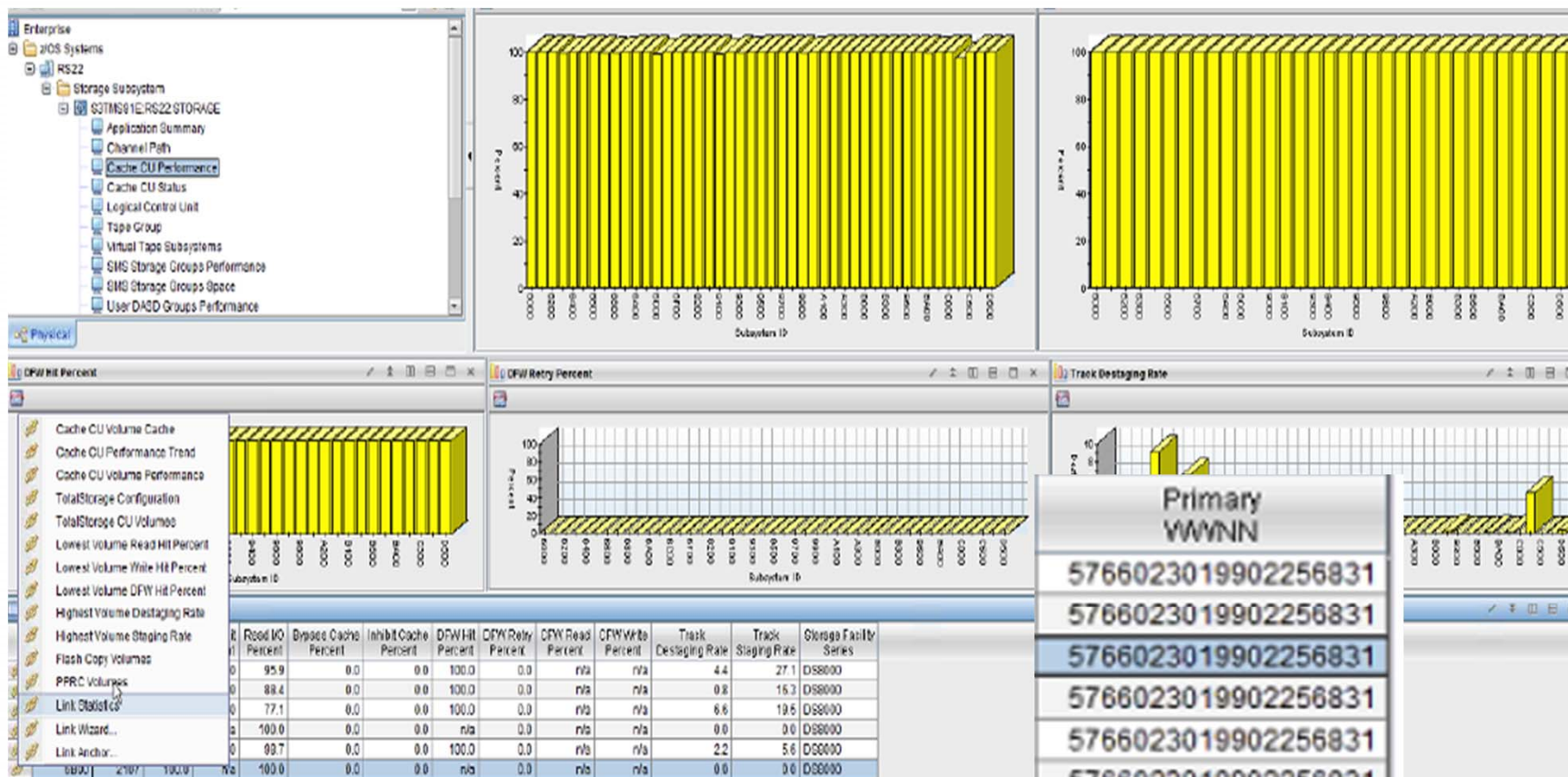
Suspended incomplete Synchronization

Susp.XD Same as Suspended Extended Distances

Suspend.PM Incomplete FlashCopy with Preserve Mirror

# V520 Features

## Copy Services PPRC Links



FCP use WWNN instead of Serial # for ESCON  
World Wide Node Name

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# V520 Features

## Copy Services Link Status

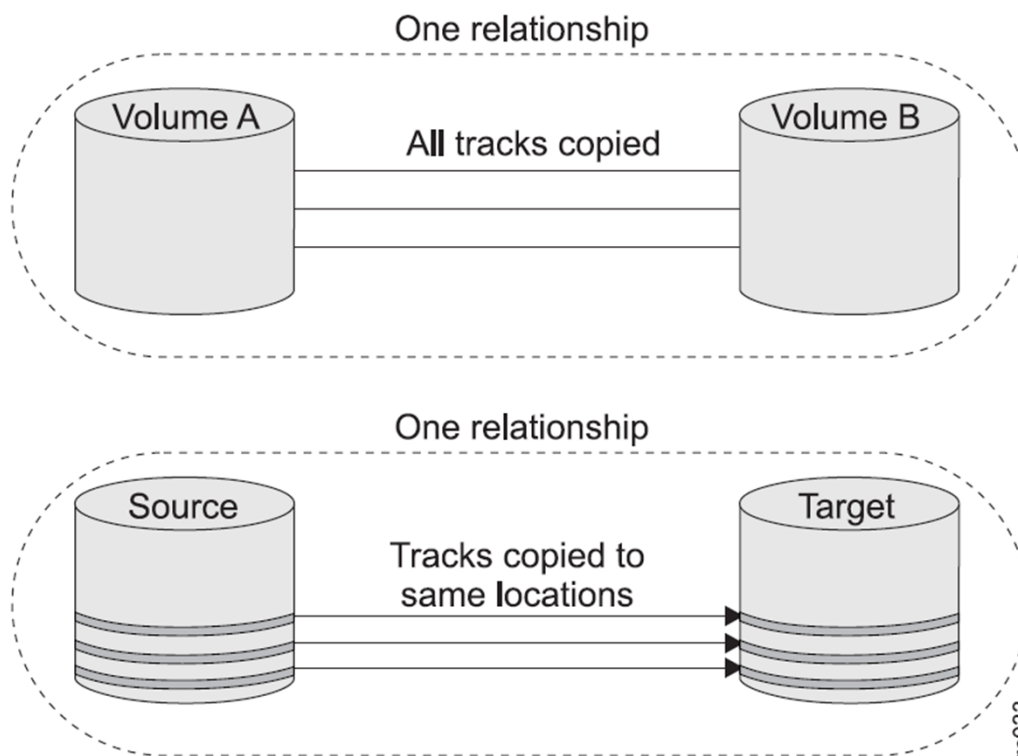
Link Statistics															
Device Number	Serial Number	Interface ID	Interface Type	Bits Per Second	MB Per Second	GB Per Second	ECKD Read Bytes	ECKD Read Rate Bytes	ECKD Read MB	ECKD Read Rate MB	ECKD Read GB	ECKD Read Rate GB	ECKD Write Bytes	ECKD Write Rate Bytes	ECKD Write MB
0X00	00000ZL771	0X200	FICON 10	10000000000	9536	9	0	N/A	0	N/A	0	N/A	0	N/A	0
0X00	00000ZL771	0X201	N/A	1	0	0	0	N/A	0	N/A	0	N/A	0	N/A	0
0X00	00000ZL771	0X202	N/A	1	0	0	0	N/A	0	N/A	0	N/A	0	N/A	0
0X00	00000ZL771	0X203	N/A	1	0	0	0	N/A	0	N/A	0	N/A	0	N/A	0
0X00	00000ZL771	0X204	FICON 10	10000000000	9536	9	29322271129600	N/A	27963896	N/A	27308	N/A	4889226379264	N/A	4662729
0X00	00000ZL771	0X205	FICON 10	10000000000	9536	9	172018283839488	N/A	164049419	N/A	160204	N/A	2976946847744	N/A	2839037
0X00	00000ZL771	0X206	FICON 10	10000000000	9536	9	170100783054848	N/A	162220748	N/A	158418	N/A	2943921553408	N/A	2807542
0X00	00000ZL771	0X207	FICON 10	10000000000	9536	9	29316094099456	N/A	27958006	N/A	27302	N/A	4878319616000	N/A	4652328
0X00	00000ZL771	0X230	FICON 10	10000000000	9536	9	50911036178432	N/A	48552547	N/A	47414	N/A	7548002238464	N/A	7198335
0X00	00000ZL771	0X231	FICON 10	10000000000	9536	9	50797612105728	N/A	48444378	N/A	47308	N/A	7538798755840	N/A	7189558
0X00	00000ZL771	0X232	FICON 10	10000000000	9536	9	8105693282304	N/A	7730191	N/A	7549	N/A	2150526091264	N/A	2050901
0X00	00000ZL771	0X233	FICON 10	10000000000	9536	9	376195383296	N/A	358767	N/A	350	N/A	66078900224	N/A	63017
0X00	00000ZL771	0X300	FICON 10	10000000000	9536	9	0	N/A	0	N/A	0	N/A	0	N/A	0
0X00	00000ZL771	0X301	N/A	1	0	0	0	N/A	0	N/A	0	N/A	0	N/A	0
0X00	00000ZL771	0X302	N/A	1	0	0	0	N/A	0	N/A	0	N/A	0	N/A	0
0X00	00000ZL771	0X303	N/A	1	0	0	0	N/A	0	N/A	0	N/A	0	N/A	0
0X00	00000ZL771	0X304	FICON 10	10000000000	9536	9	170580812627968	N/A	162678539	N/A	158865	N/A	2960326918144	N/A	2823187
0X00	00000ZL771	0X305	FICON 10	10000000000	9536	9	29305146048512	N/A	27947565	N/A	27292	N/A	4888149622784	N/A	4661702
0X00	00000ZL771	0X306	FICON 10	10000000000	9536	9	29314087911424	N/A	27956092	N/A	27300	N/A	4877875281920	N/A	4651904
0X00	00000ZL771	0X307	FICON 10	10000000000	9536	9	169154260107264	N/A	161318073	N/A	157537	N/A	2930222432256	N/A	2794477
0X00	00000ZL771	0X330	FICON 10	10000000000	9536	9	50817406337024	N/A	48463255	N/A	47327	N/A	7543680401408	N/A	7194214
0X00	00000ZL771	0X331	FICON 10	10000000000	9536	9	376804474880	N/A	359348	N/A	350	N/A	66063695872	N/A	63003
0X00	00000ZL771	0X332	FICON 10	10000000000	9536	9	478202429440	N/A	456049	N/A	445	N/A	74002989056	N/A	70574
0X00	00000ZL771	0X333	FICON 10	10000000000	9536	9	58571824562176	N/A	55858444	N/A	54549	N/A	9622042836992	N/A	9176295

# V520 Features

## Copy Services FlashCopy

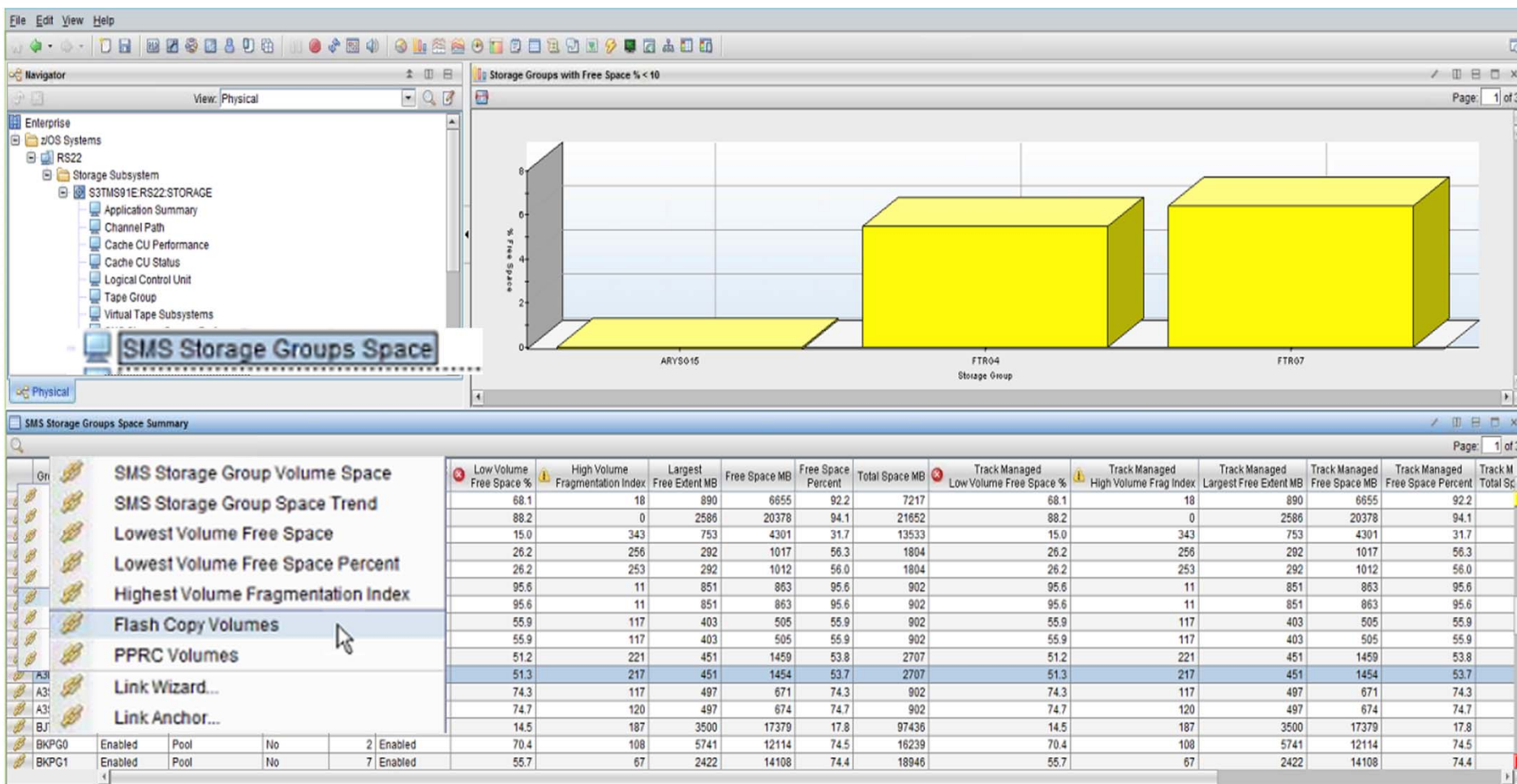
Copy a set of tracks immediately available for read/write access

Point in time copy – entire volume after the relationship is **Established**



# V520 Features

## Copy Services Flashcopy



Complete your session evaluations online at [www.SHARE.org/Pittsburgh-Eval](http://www.SHARE.org/Pittsburgh-Eval)

# V520 Features

## Copy Services Flashcopy Volumes and Relations

Flash Copy Volumes - dem21lnx.democentral.ibm.com - Vickie Dault

File Edit View Help

Navigator View: Physical

**Flash Copy Volumes**

VOLSER	Storage Group	Device Number	Storage Subsystem ID	Logical Storage Subsystem	CCA Number	Control Unit Model	Serial Number	Remote Serial Number	Active Relation Count	Max Relation Count	Continuation Track	Flash Copy Capable	Incapability Reason	P-to-P Copy
SIRB46	A3DBSG	0X6B46	0X6B00	0X6B	0X46	2107	0000000ZL771		0	16699	0	Y	IS PPRC PRIMARY	Y
SIRB47	A3DBSG	0X6B47	0X6B00	0X6B	0X47	2107	0000000ZL771		4	16699	0	Y	IS PPRC PRIMARY	Y

**Flash Copy Relations**

VOLSER	Device Number	Storage Subsystem ID	Logical Storage Subsystem	CCA Number	Storage Subsystem ID	Logical Storage Subsystem	CCA Number	Target	Full Volume	Background Copy	Background Copy Active	Persistent	Target Write Protected	Validation Required	Incremental	Revertible
SIRB47	0X6B47	0X6B00	0X6B	0X47	0X6B00	0X6B	0XF7	No	No	Yes	No	No	No	No	No	No
SIRB47	0X6B47	0X6B00	0X6B	0X47	0X6B00	0X6B	0XF7	No	No	Yes	No	No	No	No	No	No
SIRB47	0X6B47	0X6B00	0X6B	0X47	0X6B00	0X6B	0XF7	No	No	Yes	No	No	No	No	No	No
SIRB47	0X6B47	0X6B00	0X6B	0X47	0X6B00	0X6B	0XF7	No	No	Yes	No	No	No	No	No	No

Hub Time: Sun, 08/03/2014 10:06 PM Server Available Flash Copy Volumes - dem21lnx.democentral.ibm.com - Vickie Dault \*ADMIN MODE\*

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# Agenda

- V530 Announcement
  - Features
    - New product dynamic Workspace Links
    - Up to 15% Reduction in CPU for Space and Cache
    - Dataset Attributes Database Extraction DAGX
- V520 Examples
  - CA1
  - Record Level Sharing
    - Application Summary
    - Record level Sharing
    - Storclas
  - z/OS Copy Services
    - XRC
    - PPRC
    - FlashCopy
  - Miscellaneous APARS/PTFS



# V520 Features

## OMEGAMON XE for Storage PSP Bucket

APPLY Outstanding PTFs

PSP bucket Upgrade OMXES3520



Complete your session evaluations online at [www.SHARE.org/Pittsburgh-Eval](http://www.SHARE.org/Pittsburgh-Eval)

# V520 Features

## OMEGAMON XE for Storage References

VSAM Demystified SG24-6105-02  
[ibm.com/Redbooks](http://ibm.com/Redbooks)

DFSMS Advanced Copy Services SC35-0428-19

OMEGAMON XE for Storage V520 Planning and Configuration Guide  
SC27-4378-01

OMEGAMON XE for Storage V520 User's Guide SC27-4379-01