What's new in OMEGAMON XE for Storage v4.2.0 Latest Interim Feature

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Speaker Company IBM

Date of Presentation August 4, 2010
Session Number 7522

OMEGAMON XE for Storage
Agenda

- Interim *new* Features ‘freebies’
- Base Product
  - New features
- IF0001
  - New features
- IF0002
  - New Features
- What’s next
- Data Collection (?)

OMEGAMON XE for Storage
Release History

New Releases can take 2 years to be available

Interim Features are approximately every 6 – 9 months.

- V4.1.0 GA 4Q 2006
- V4.2.0 GA 4Q 2008 — 2 years
  - IF1 July 17th 2009 — 7 months
  - IF2 December 2009 — 5 months
  - IF3 next — # months

  - Interim Features are cumulative

OMEGAMON XE for Storage
Release History

Interim Features are installed with a PTF

Distributed Interim Fixes may be required

Platform maintenance table
http://www-01.ibm.com/support/docview.wss?rs=203&uid=swg27008514

OMEGAMON XE for Storage
Version 420 Features

- BASE Product

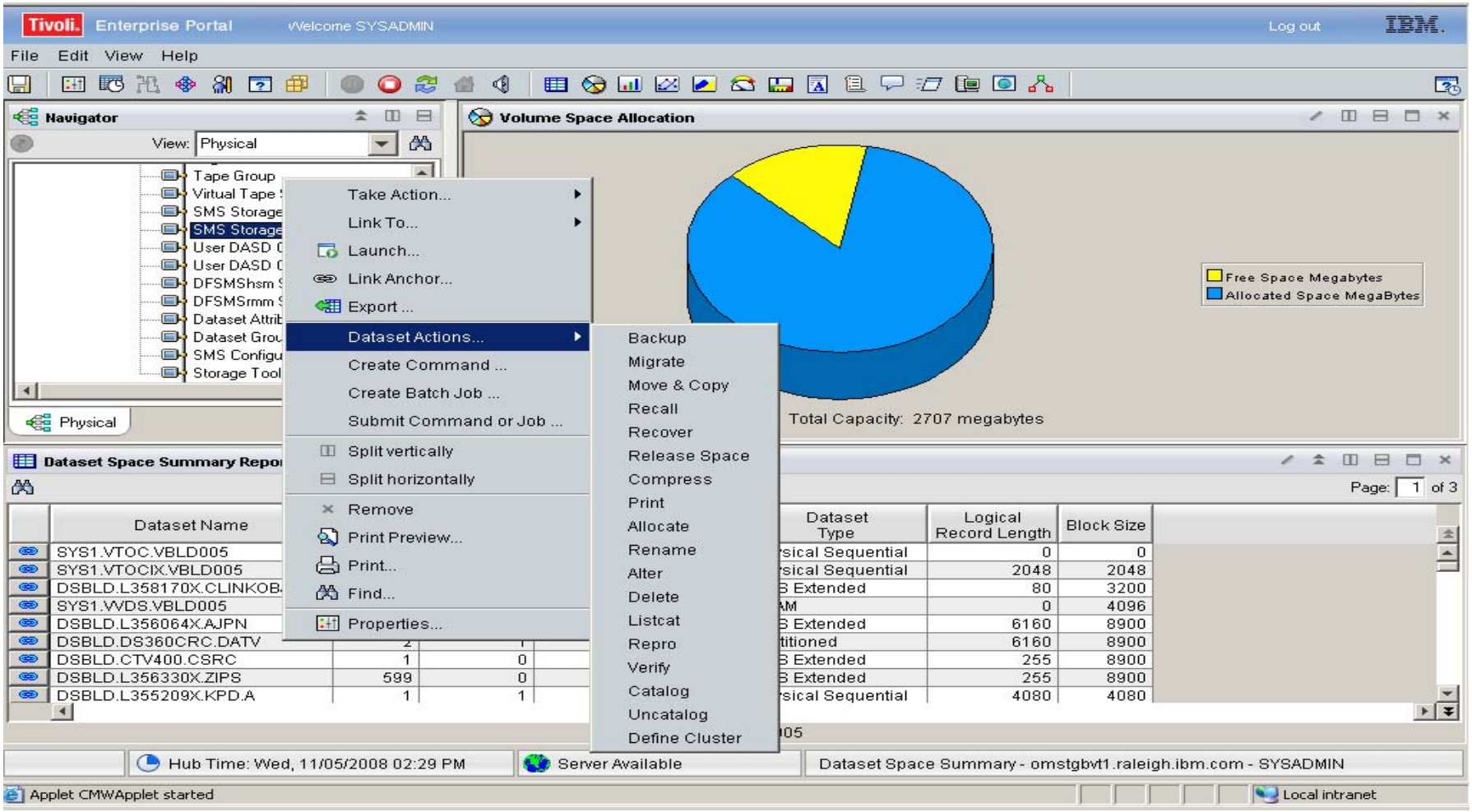
- Storage Toolkit enhanced IDCAMS
- New BATCH JCL capabilities
- New COMMAND capabilities
- DFSMSrmm support
- EAV support
- Tivoli Common Support
- Dynamic workspace links to TEP children
- Currency new z/OS features
- Security enhanced for userid of TEP user

OMEGAMON XE for Storage
Version 420 Features

- BASE Product

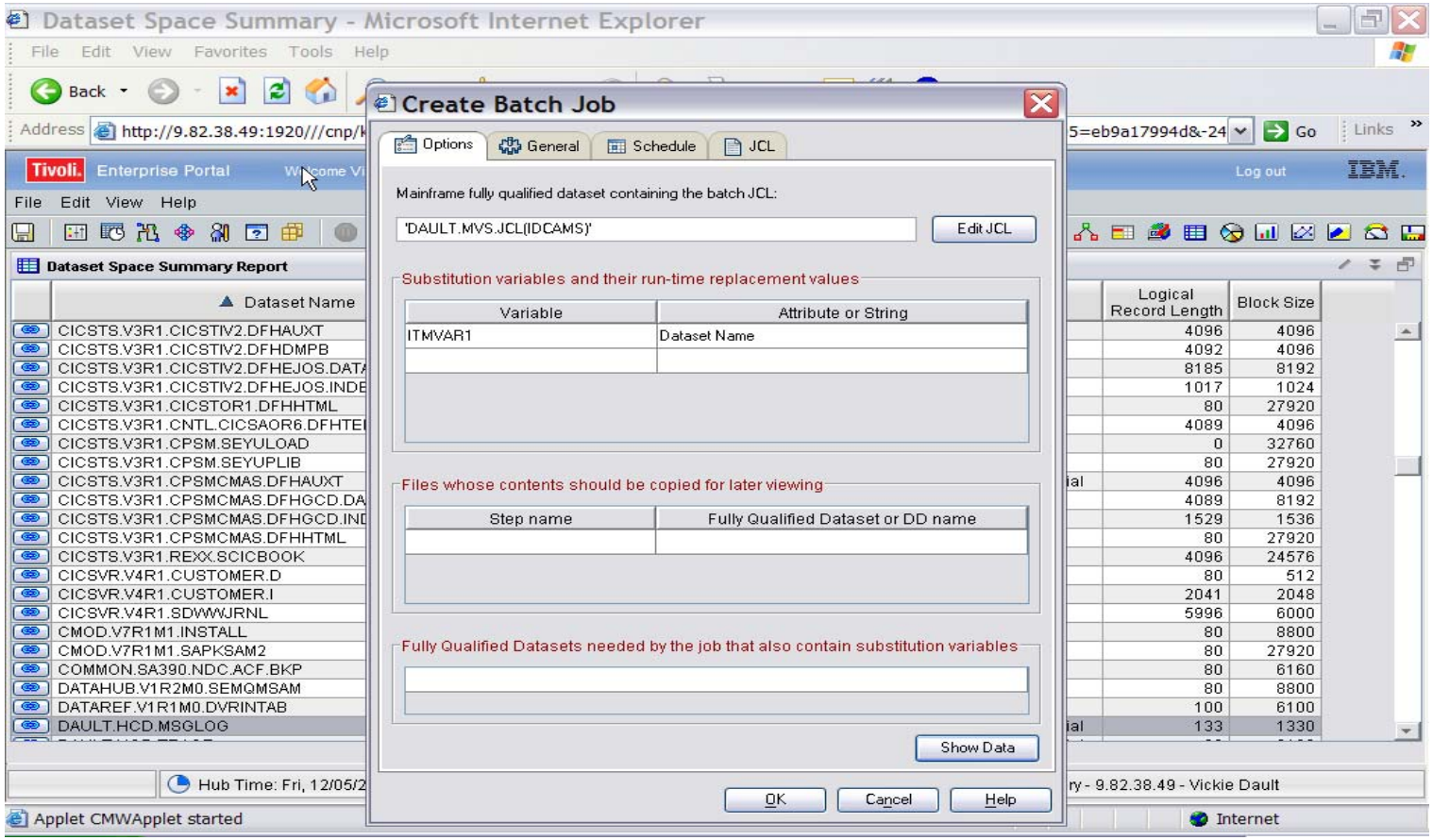
- Storage Toolkit improvements
  DFHSM
  DFDSS
  IDCAMS
  RMM subcommands

OMEGAMON XE for Storage
Version 420 Features



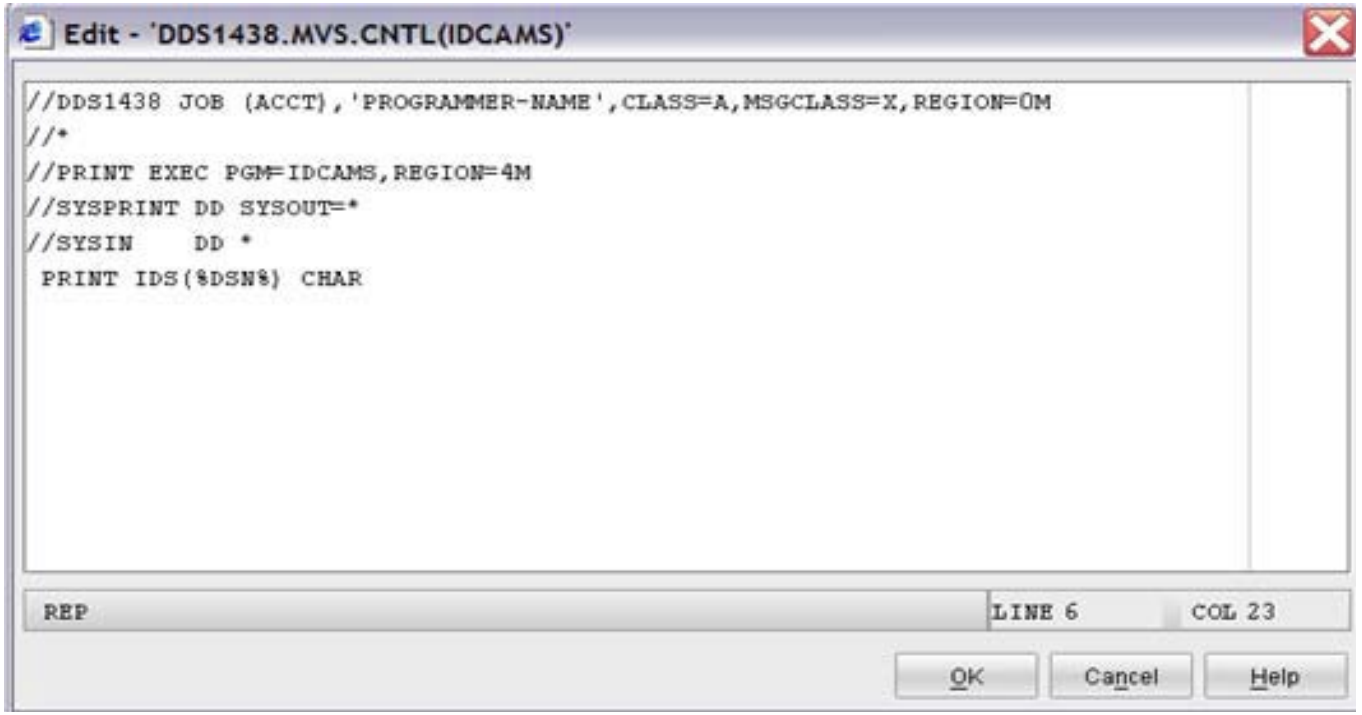
OMEGAMON XE for Storage
Version 420 Features

- BATCH JCL



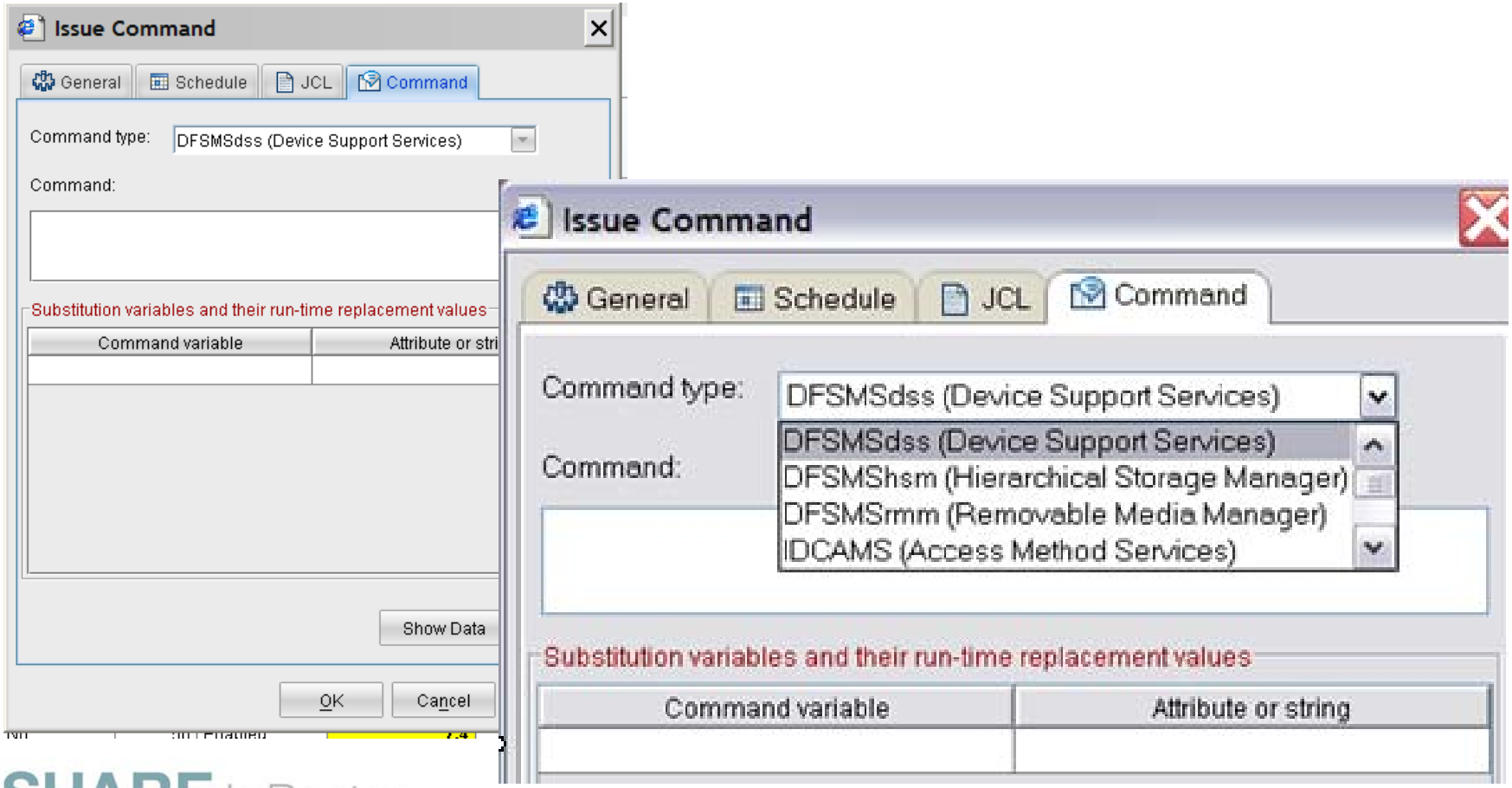
OMEGAMON XE for Storage
Version 420 Features

- BATCH JCL



OMEGAMON XE for Storage
Version 420 Features

Commands built with Storage toolkit



OMEGAMON XE for Storage
Version 420 Features

- DFSMSrmm support

Several new workspaces were created to present information from your RMM CDS.

CDS and Journal utilization

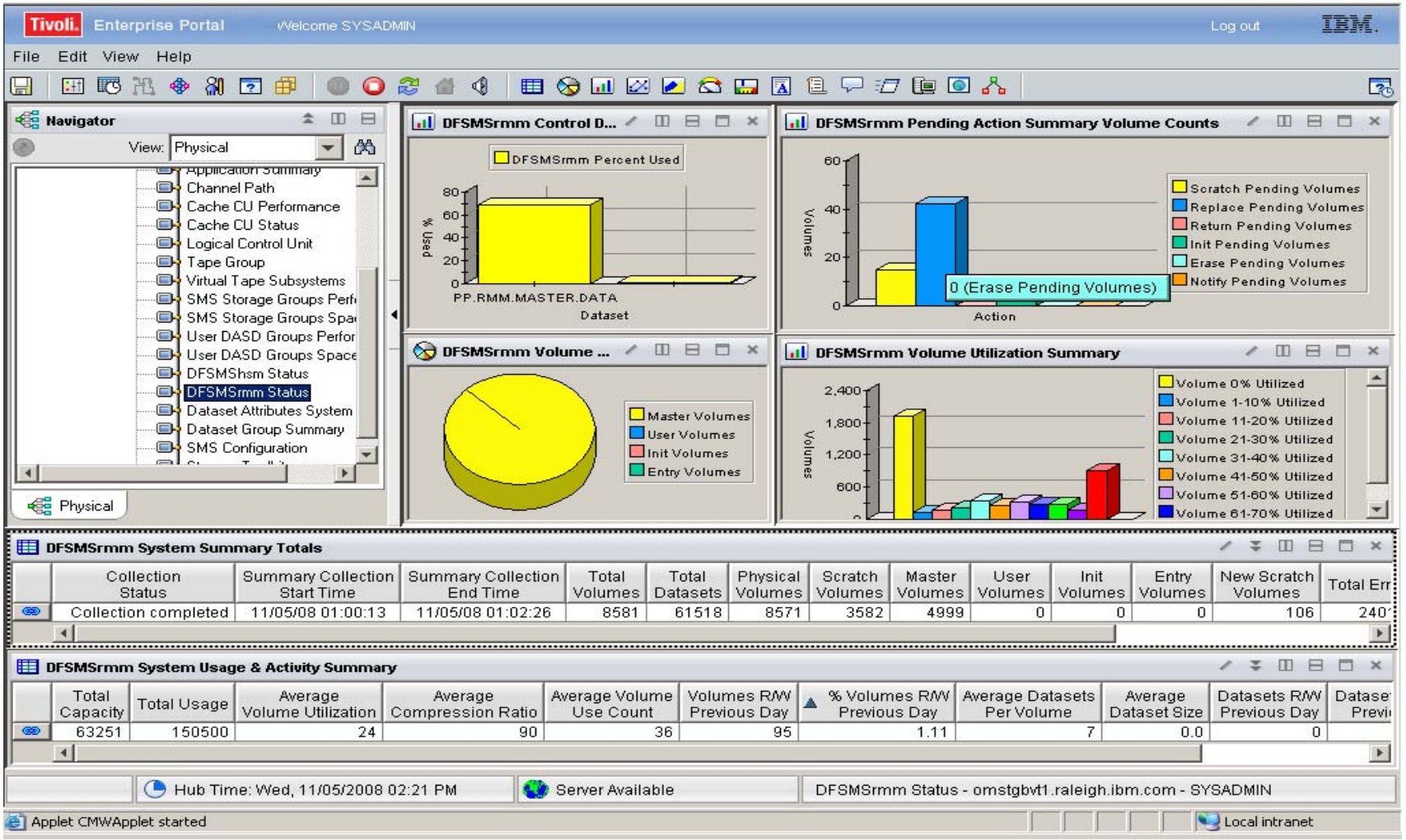
Volumes

Datasets

Owners

Reports by Utilization, Status, Pending Action, Accounting, Jobname, Program, Location and VRS definitions

OMEGAMON XE for Storage
Version 420 Features



OMEGAMON XE for Storage
Version 420 Features

Currency

DS8000 support

TS7700 support

EAV support

OMEGAMON XE for Storage
Version 420 Features

Tivoli Common Reporting

Summarized Reports

Storage HSM Migrate and Recall Function Requests

Storage system Volume and Dataset DASD Usage

Storage Dataset Group DASD Usage

http://publib.boulder.ibm.com/infocenter/tivihelp/v3r1/topic/com.ibm.tivoli.tcr_cog.doc/tcr_welcome.html

OMEGAMON XE for Storage
Version 420 Features

Dynamic workspace linking between TEP enabled products

OMEGAMON XE for Storage on z/OS

IBM Tivoli Advanced Audit for DFSMShsm
IBM Tivoli Advanced Reporting for DFSMShsm
IBM Tivoli Advanced Catalog Management
IBM Tivoli Advanced Allocation Management
IBM Tivoli Tape Optimizer

OMEGAMON XE for Storage

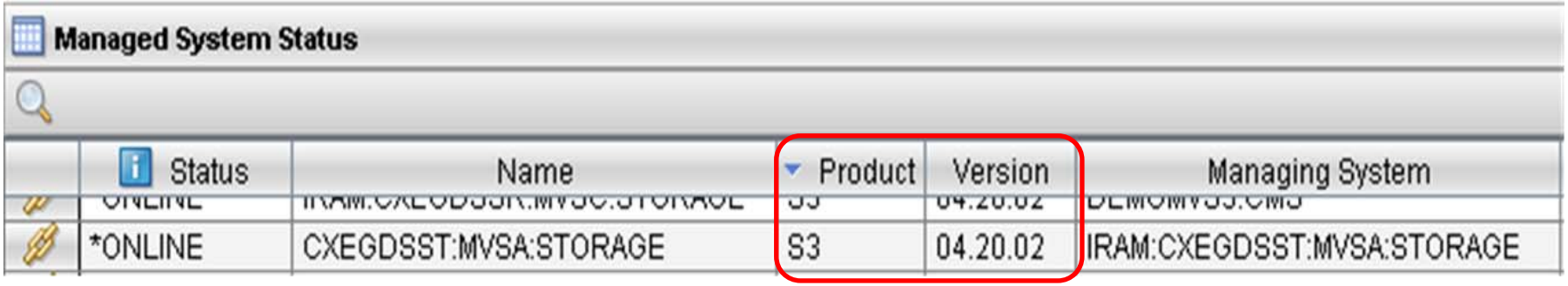
Interim Feature ?

How to determine which IF version you're using

Navigator Item: Enterprise

Workspace: Managed System Status

Attributes: Product S3 Version 04.20.*IF*



OMEGAMON XE for Storage
Interim Feature 1

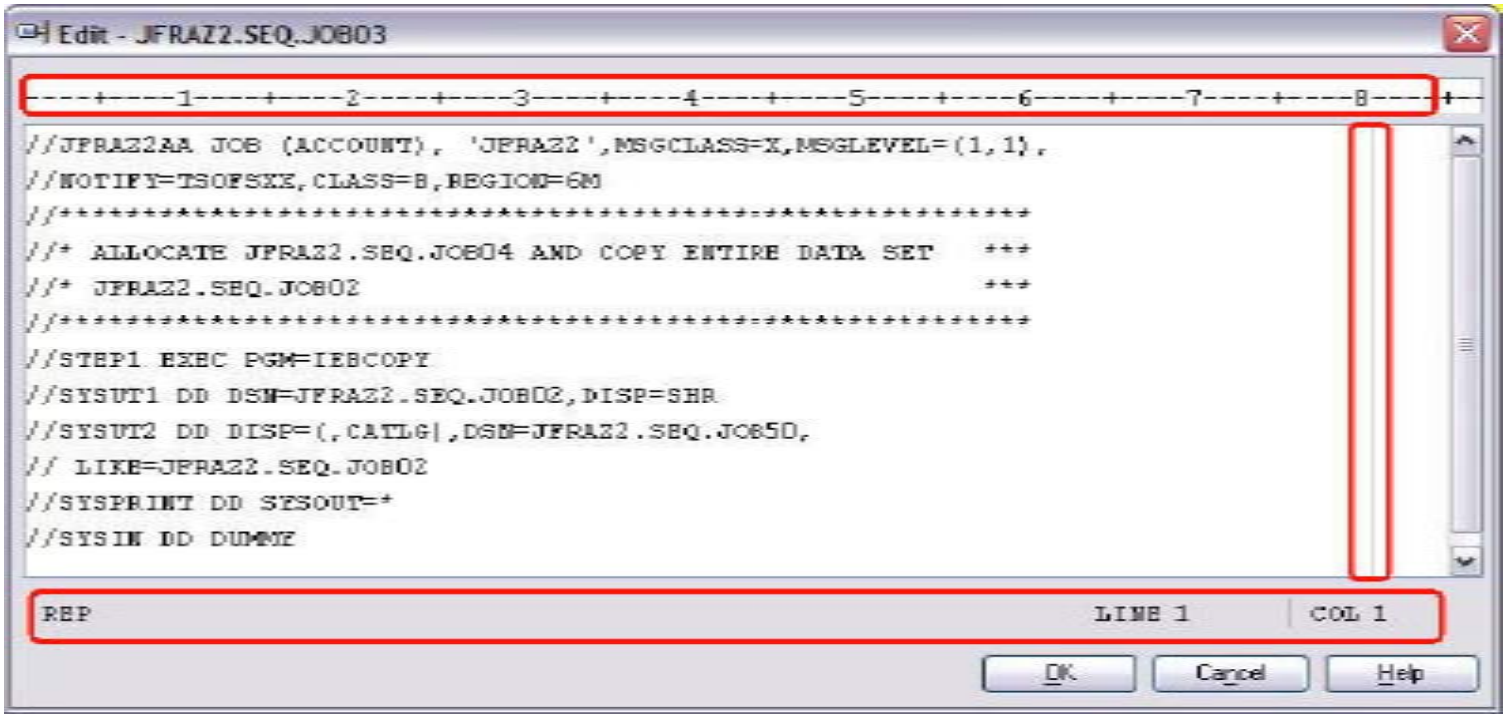
IF1

OMEGAMON XE for Storage
Interim Feature 1 Enhancements

- Edit BATCH JCL Enhancement
- Space Statistic Metrics
- Solid State Device Support
- More attributes in TDW

OMEGAMON XE for Storage
Interim Feature 1 Enhancements

- Edit BATCH JCL Enhancement



- FB 80 requirement Ruler line # Insert Col indicator

OMEGAMON XE for Storage
Interim Feature 1 Enhancements

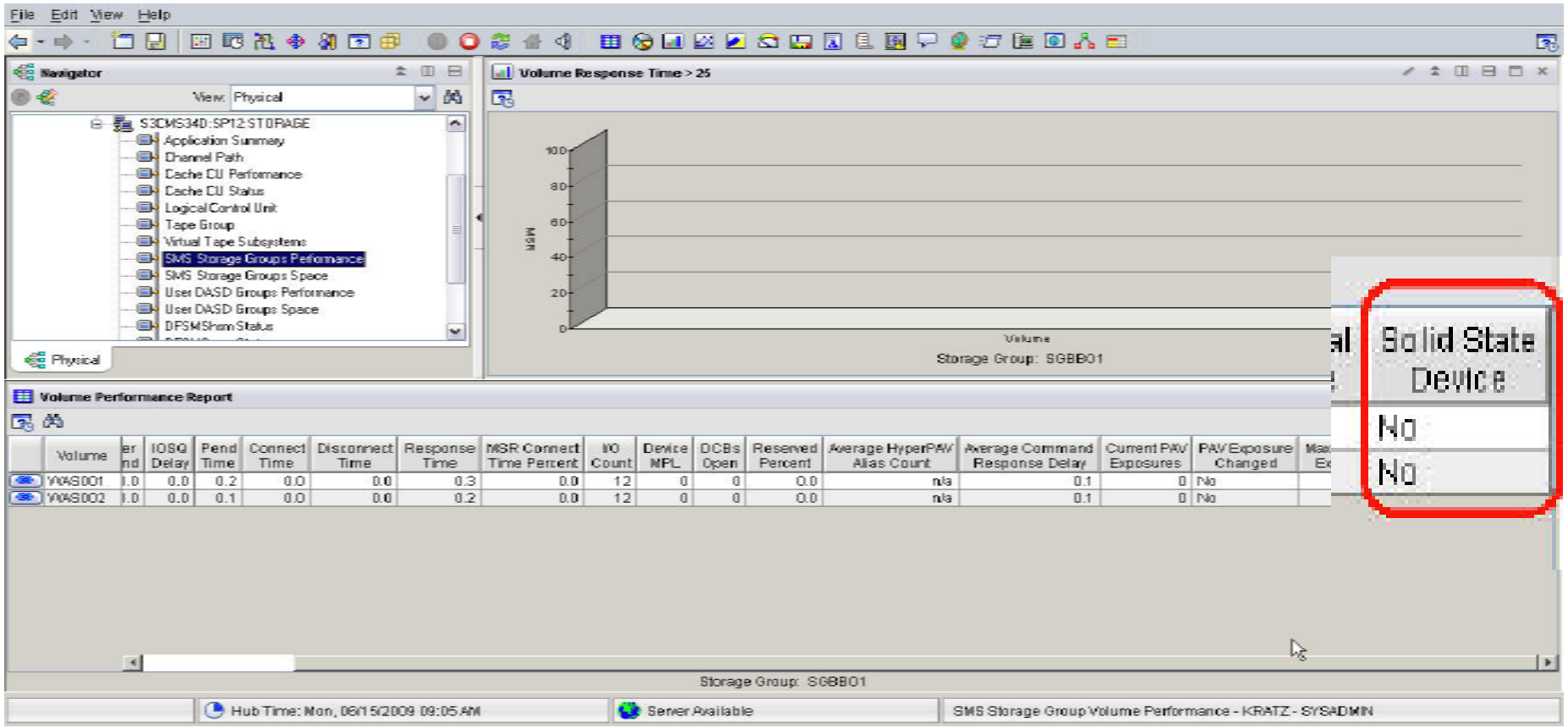
Space Statistic Metrics

TRACKS
CYLINDERS
MEGABYTES
GIGABYTES

% UTILIZED
% FREE

OMEGAMON XE for Storage
Interim Feature 1 Enhancements

Solid State Device Support



OMEGAMON XE for Storage
Interim Feature 1 Enhancements

More attributes in TDW

Channel Path
Cache control Unit
Logical control Unit
Volume Group Summary

By moving historical trending into the Tivoli Data Warehouse Summarization and Pruning are now available

Be careful to match history collection to RMF interval

OMEGAMON XE for Storage
Interim Feature 2

IF2

OMEGAMON XE for Storage
Interim Feature 2 Enhancements

- Dynamic DASD Volume Groups
- Dynamic Dataset Groups
- Improved Tivoli Data Warehouse Support
- Hitachi DASD Support

OMEGAMON XE for Storage
Interim Feature 2 Enhancements

Static DASD Volume Groups

*hlq.RTE.*RKANPARU(KDFDUDGI)

User DASD Groups defined by volser pattern, storage group pattern, unit address at configuration time or manually edited in RKANPARU

Refresh: MODIFY Command against TEMS to refresh

/F *temsname,*DFREF *membername*

or

RECYCLE TEMS

OMEGAMON XE for Storage
Interim Feature 2 Enhancements

Static DASD Volume Groups

*hlq.RTE.*RKANPARU(KDFDUDGI)

```
*-  MEMBER:    KDFDUDGI                                                -*
*-  LIBRARY:   RKANPARU                                                -*
*-                                                                     -*
*-  PURPOSE:   SPECIFY KEYWORDS THAT SELECT DEVICES ELIGIBLE FOR       -*
*-             USER DASD GROUP MONITORING BY THE TEMS
*-             ADDRESS SPACE, AND SPECIFY KEYWORDS THAT CONTROL        -*
*-             DEVICE MONITORING OPTIONS.                              -*
*-                                                                     -*
*-                                                                     -*
*-  DEVICE SELECTION KEYWORDS:                                         -*
*-                                                                     -*
*-  SYNTAX:    NAME(PRODSTORAGE)
*-             THE NAME OF THE USER DASD GROUP.  THIS VALUE IS         -*
*-             REQUIRED, AND MUST BE THE FIRST KEYWORD OF A USER       -*
*-             DASD GROUP DEFINITION.  IT MAY BE FROM 1 TO 16          -*
*-             CHARACTERS IN LENGTH, AND MAY ONLY BE USED ONCE PER     -*
*-             GROUP.                                                  -*
*-                                                                     -*
*-    MONITOR   - (ON OFF) SPECIFY THE INITIAL STATE OF THIS ENTRY.    -*
*-                THE DEFAULT IS MONITOR(ON)                           -*
*-                                                                     -*
*-    DEVICE    - LIST OF ONE OR MORE HEX DEVICE NUMBERS               -*
*-                EXAMPLES:   DEVICE(030F)                             -*
*-                            DEVICE(030A,0318)                        -*
*-                                                                     -*
*-    DEVRANGE - LIST OF ONE OR MORE HEX DEVICE NUMBER PAIRS THAT      -*
*-                SPECIFY A RANGE OF DEVICES. THE HEX NUMBERS THAT     -*
*-                MAKE UP A PAIR MUST BE SEPARATED BY A COLON.         -*
```

OMEGAMON XE for Storage
Interim Feature 2 Enhancements

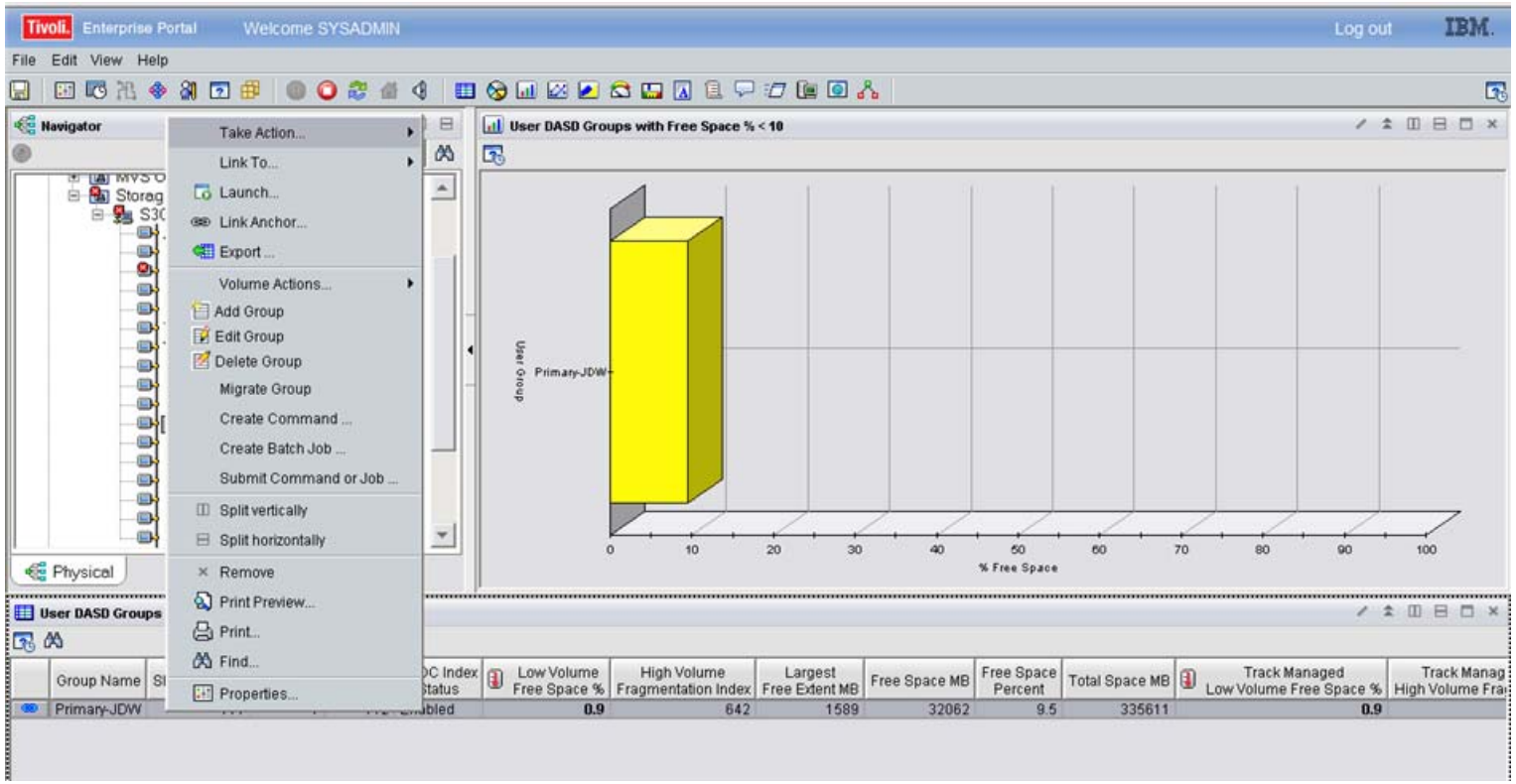
Static DASD Volume Groups

*hlq.rte.*RKANPARU(KDFDUDGI)

```
   NAME(DEMO)                                    -
   MONITOR(ON)                                   -
   VOLSER(DMT?)
*
```

OMEGAMON XE for Storage
Interim Feature 2 Enhancements

Dynamic DASD Volume Groups



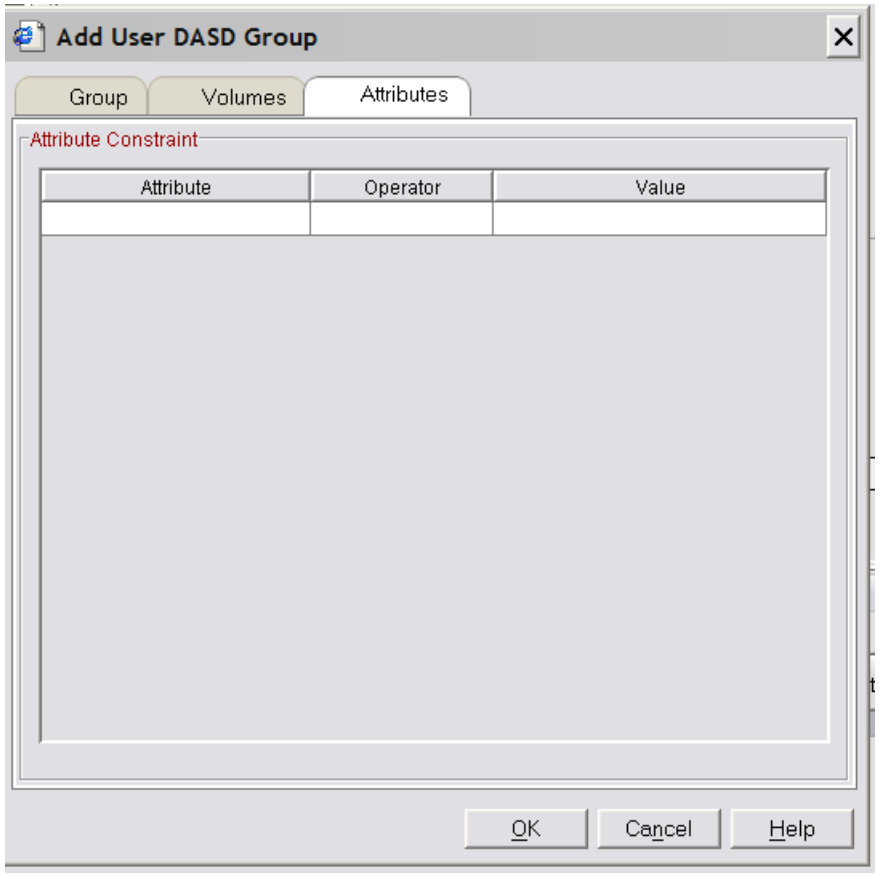
OMEGAMON XE for Storage
Interim Feature 2 Enhancements

Dynamic DASD Volume Groups

OMEGAMON XE for Storage
Interim Feature 2 Enhancements

Dynamic DASD Volume Groups

Conditionally Include volumes in the list



OMEGAMON XE for Storage
Interim Feature 2 Enhancements

Dynamic DASD Volume Groups

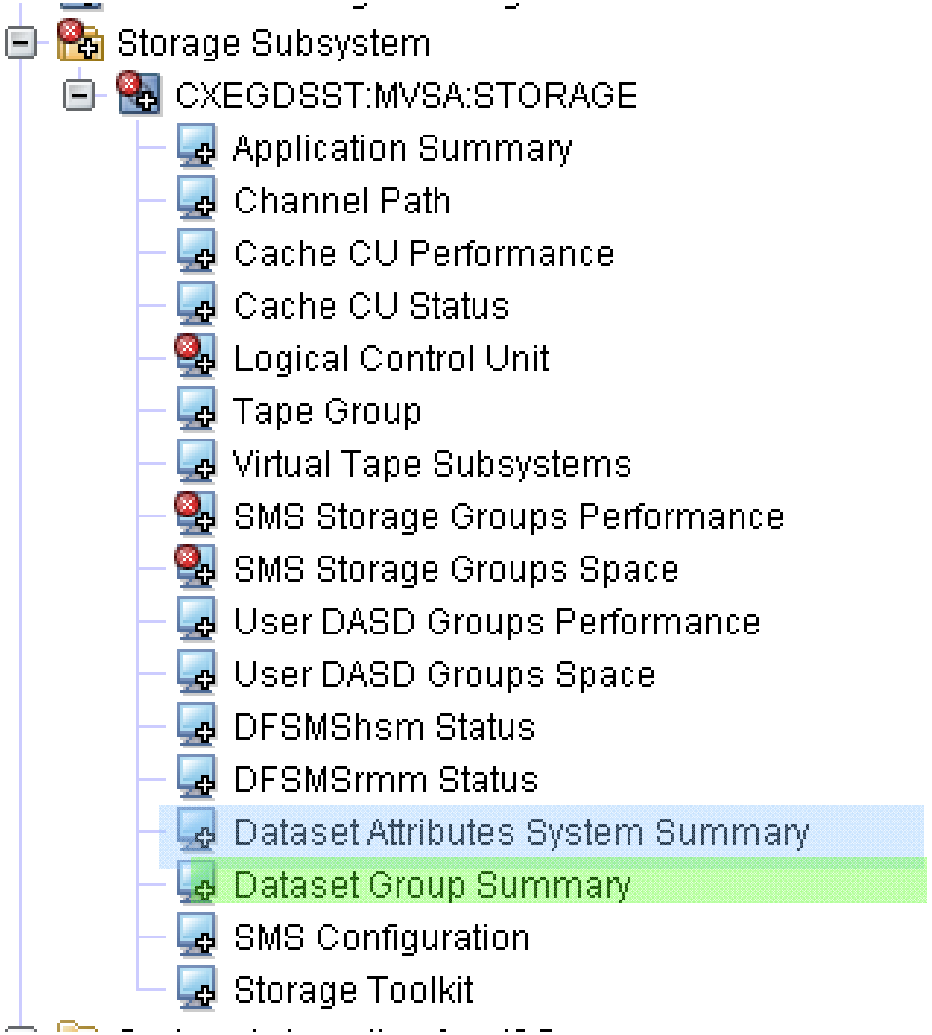
Persistent or temporary User Dasd Groups return the same Information

OMEGAMON XE for Storage
Interim Feature 2 Enhancements

Dataset Attributes Database
Compared to
Dataset Group Summary

OMEGAMON XE for Storage

Interim Feature 2 Enhancements



OMEGAMON XE for Storage
Interim Feature 2 Enhancements

Dataset Attributes Database

Collected once every 24 hours by a schedule datasets found on all scanned volumes.

Dataset Attribute Summary

Status Message	Collection Start Time	Collection End Time	Volumes Online	Volumes Processed	Datasets Processed	Available Tracks	Allocated Tracks	Used Tracks	Unused Tracks	Percent Allocated	Percent Used	Percent Free
Collection completed	08/03/10 01:00:40	08/03/10 01:15:20	1175	1048	205792	106246980	59406762	48363423	11043339	55.9	81.4	18.6

Dataset Group Summary

Collected as indicated in the “Collection Interval” using a dataset mask and starting with the datasets catalog entries.

The Collection interval might be the RMF interval, every 6 hours or On Demand (ie when navigating to the workspace)

OMEGAMON XE for Storage
Interim Feature 2 Enhancements

Dynamic Dataset Groups is in the TEMS address space

To ANALYZE a subset of the data, use the dynamic Data Groups workspace to select the data from the Dataset Attributes Data Base.

To search through the thousands and hundreds of thousands of datasets for only those you are interested in.

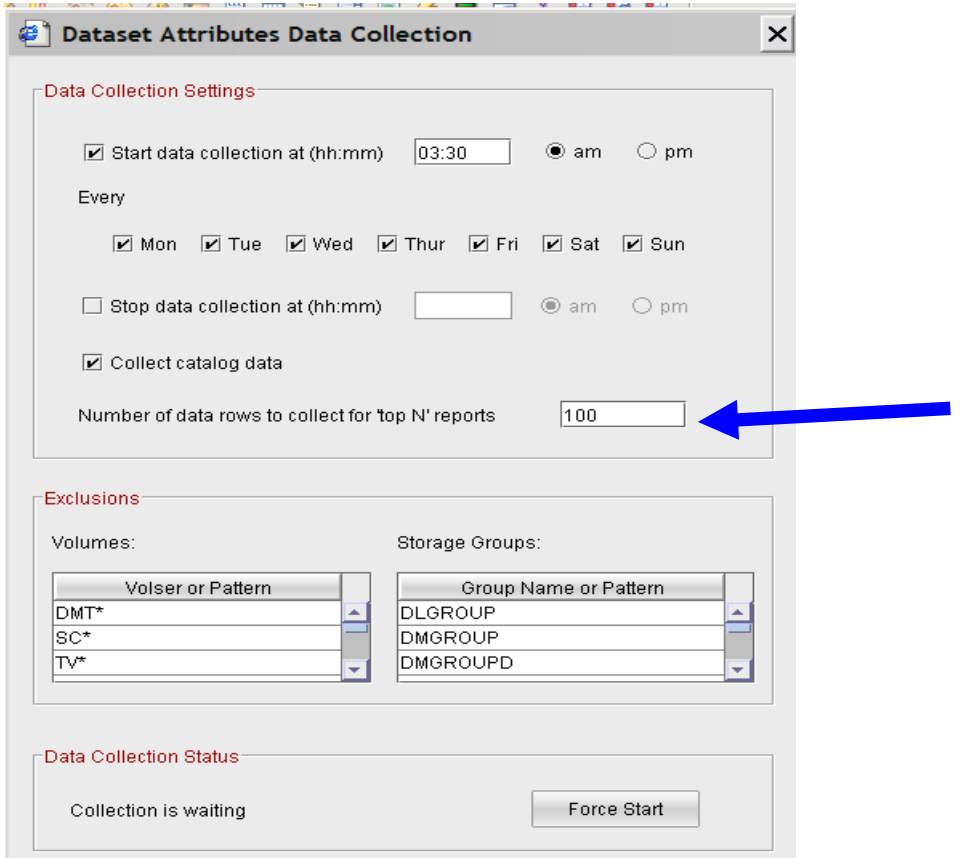
996 volumes	225,258 datasets
2111 volumes	489,752 datasets
5432 volumes	1,048,376 datasets
7024 volumes	1,453,968 datasets

OMEGAMON XE for Storage
Interim Feature 2 Enhancements

Dynamic Dataset Groups TOP ‘N’ Reports

Default ’20’

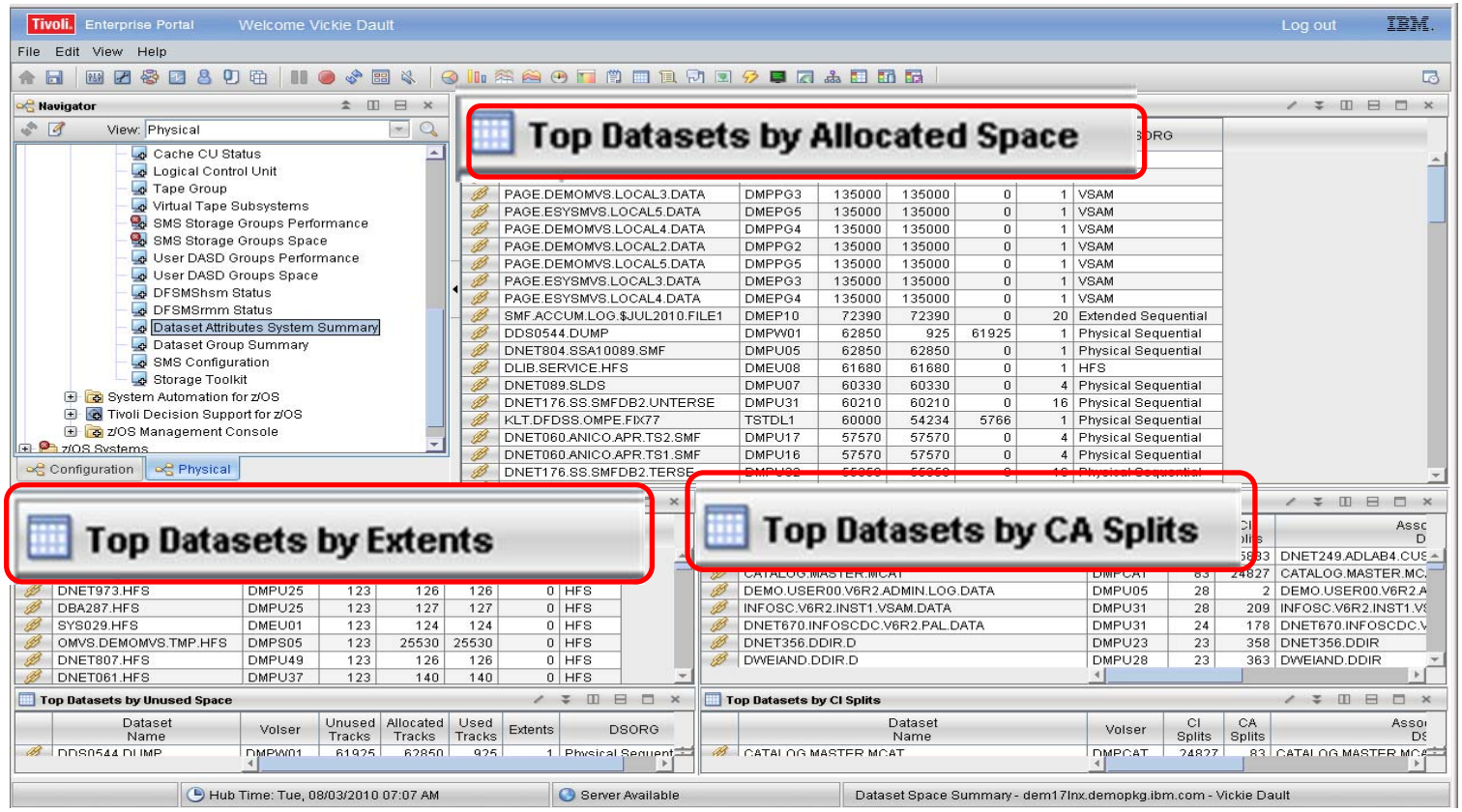
Max ‘100’



OMEGAMON XE for Storage

Interim Feature 2 Enhancements

Dynamic Dataset Groups TOP 'N' Reports Top Datasets by

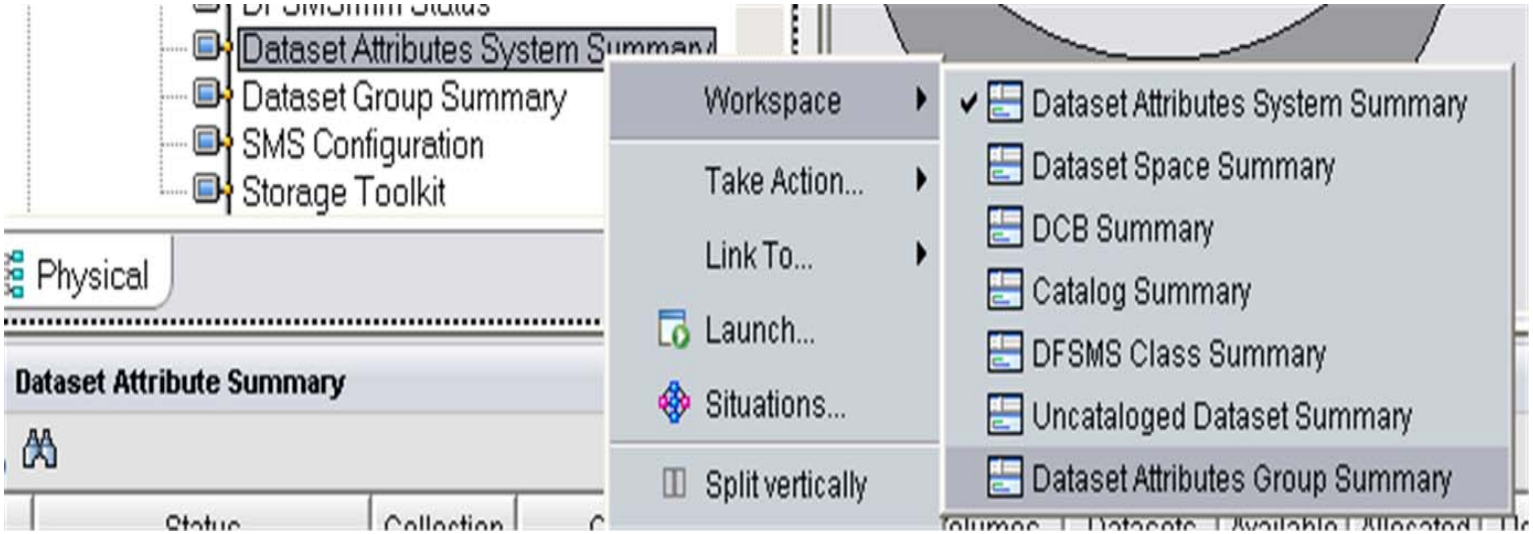


OMEGAMON XE for Storage
Interim Feature 2 Enhancements

Dynamic Dataset Groups

Right click the Dataset attributes system Summary

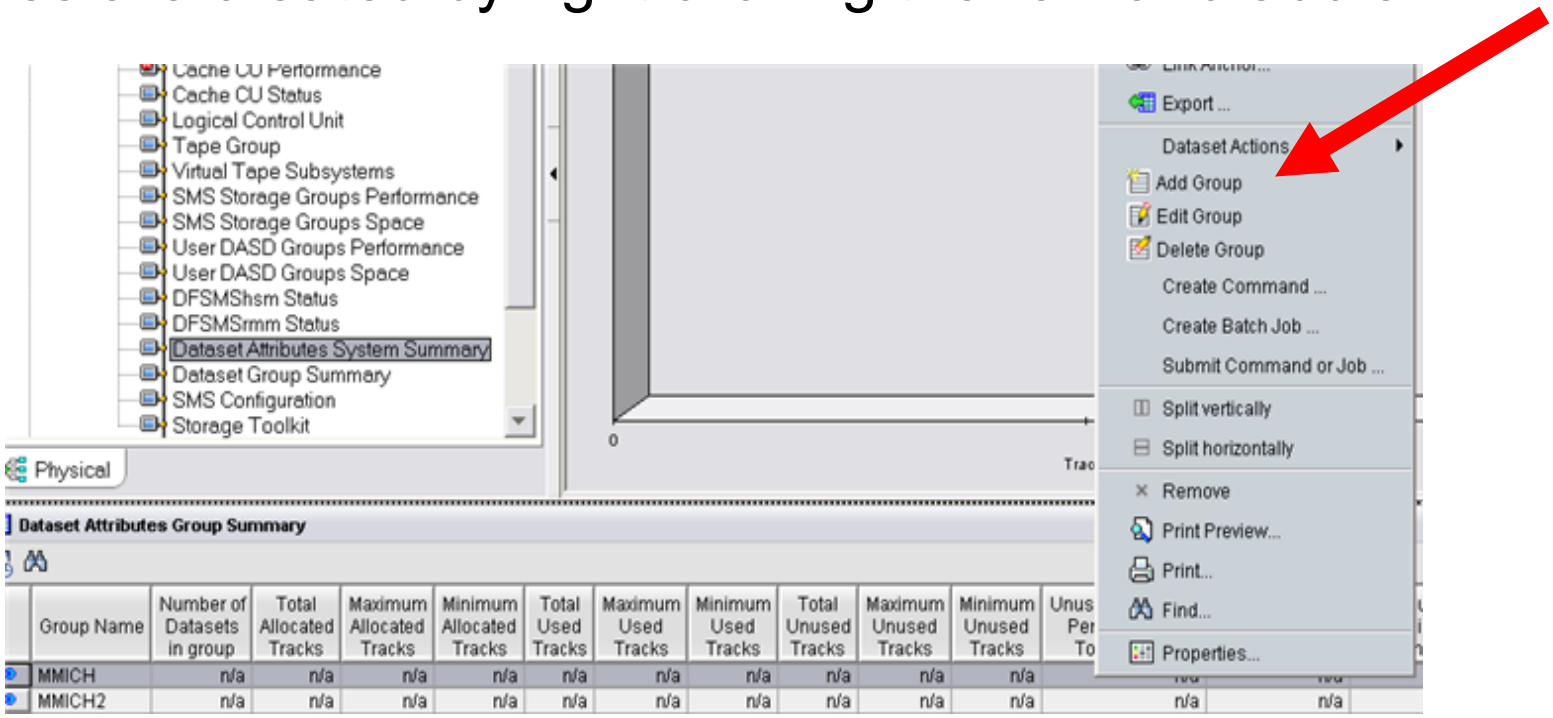
Navigator item and select the Dataset Attributes Group Summary



OMEGAMON XE for Storage
Interim Feature 2 Enhancements

Dynamic Dataset Groups

previously defined groups appear along with their metrics. New ones are created by right clicking the row and add a Group.



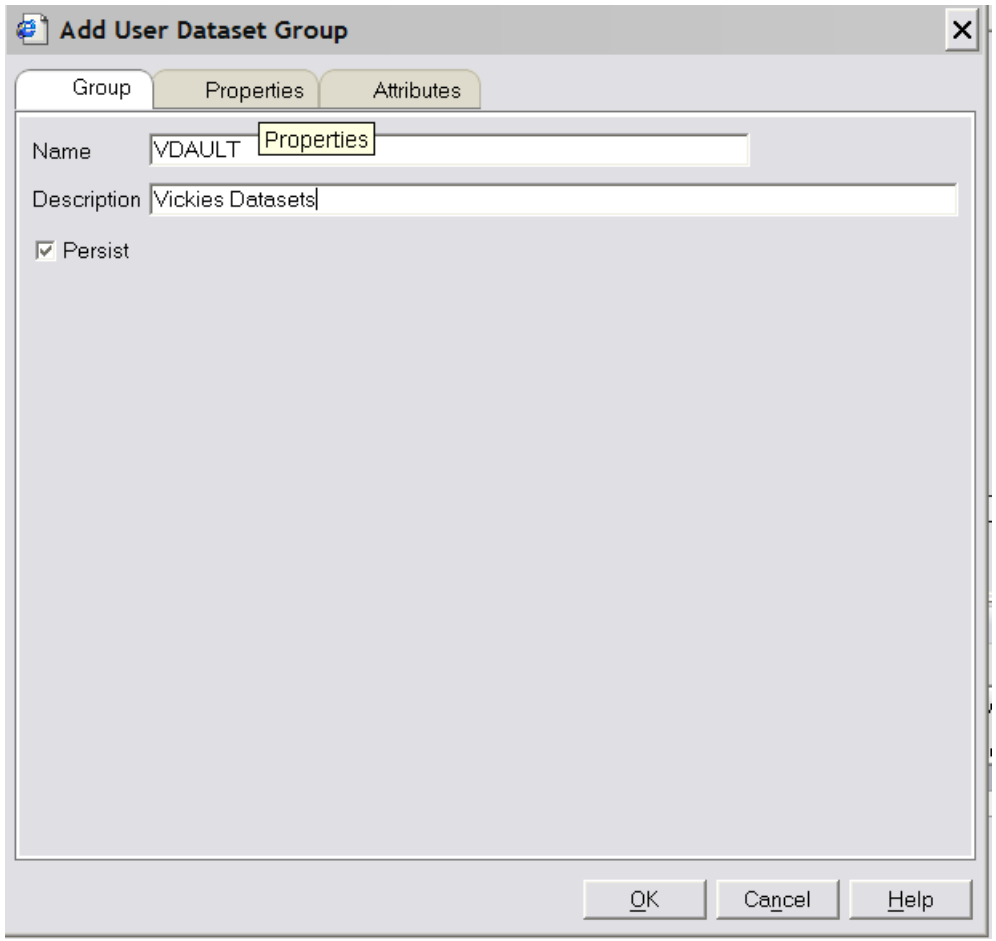
OMEGAMON XE for Storage
Interim Feature 2 Enhancements

Dynamic Dataset Groups

Group name

and

Definition

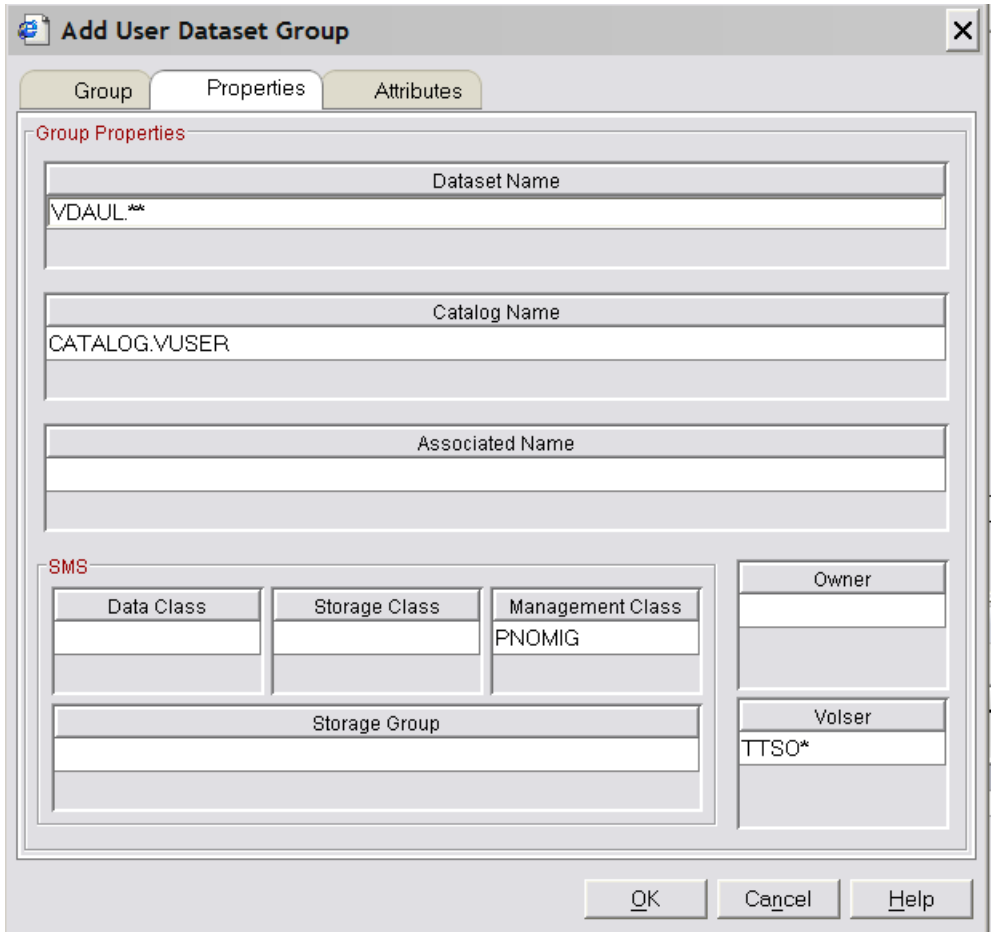


OMEGAMON XE for Storage
Interim Feature 2 Enhancements

Dynamic Dataset Groups

Group Properties

Narrowing down the Data



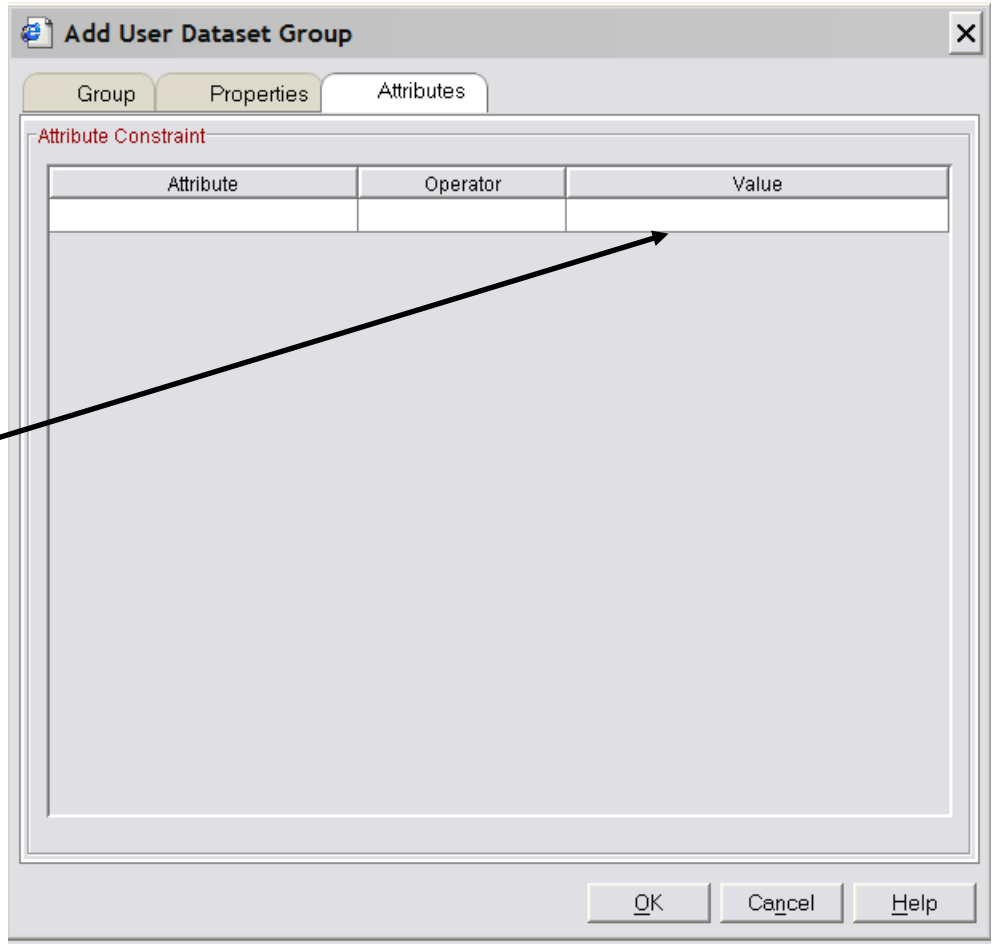
*Syntax may be incorrect

OMEGAMON XE for Storage
Interim Feature 2 Enhancements

Dynamic Dataset Groups

Further qualify
Data of interest

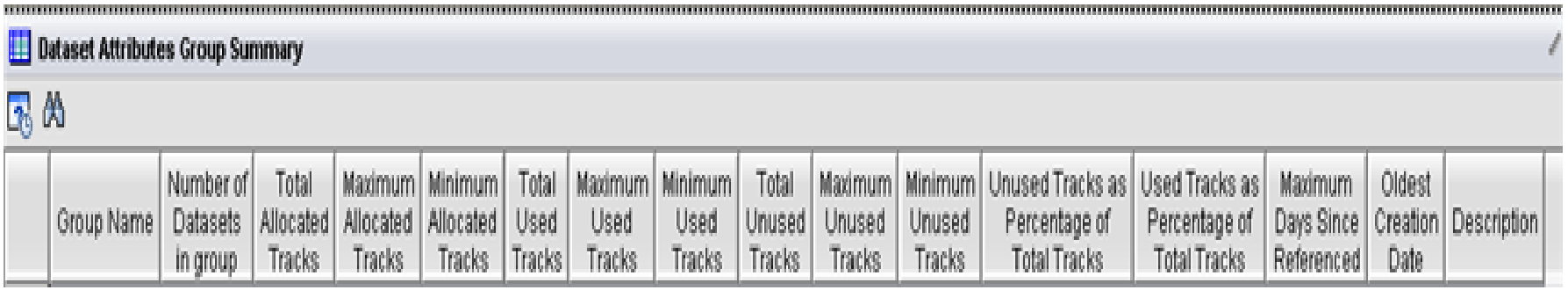
Attributes selected
From drop down



OMEGAMON XE for Storage
Interim Feature 2 Enhancements

Dynamic Dataset Groups

Results returned in a new row



Storage toolkit actions available

link to details

Situation monitoring

OMEGAMON XE for Storage
Interim Feature 2 Enhancements

Improved Tivoli Data Warehouse Support

Logical Volume Cache Attributes
Logical Volume Space Attributes
Logical Volume Performance Attributes

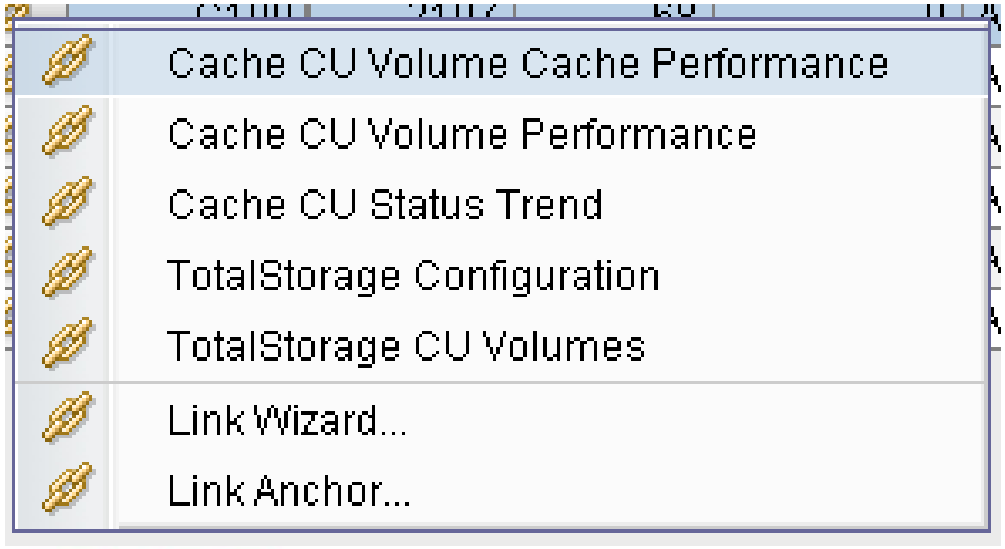
Summarization and Pruning

OMEGAMON XE for Storage
Interim Feature 2 Enhancements

Hitachi DASD Support

Cache Control Unit Status Report

	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	256	0	Active	13920.0	11127.9	Active	524288	0	DS8000
	C100	2107	68	0	Active	13920.0	11127.9	Active	524288	0	DS8000
	C200	2107	34	0	Active	13920.0	11127.9	Active	524288	0	DS8000
	C300	2107	24	0	Active	13920.0	11127.9	Active	524288	0	DS8000
	D000	2107	192	0	Active	1314.9	963.0	Active	131072	0	DS6000
	E000	2107	196	0	Active	1314.9	963.0	Active	131072	0	DS6000
	F000	2107	196	0	Active	1314.9	963.0	Active	131072	0	DS6000



OMEGAMON XE for Storage
Interim Feature 3

IF3

OMEGAMON XE for Storage
Interim Feature 3 Enhancements

-
-
-

Too early to tell

OMEGAMON XE for Storage
Data Collection

BATCH ? vs REAL TIME

OMEGAMON XE for Storage
Data Collection

- 4 types of data
  - Performance
    - Volume
    - Dataset
    - Cross System
  - Space
    - Storage Group
    - Volume
    - Dataset
  - Dataset attributes
    - DCB attributes: dsorg, blksize
    - creation date, last referenced, never referenced
    - tracks allocated/used, Extents, CI and CA splits
    - Catalog status, uncataloged datasets, SMS constructs used
  - RMM attributes
    - Statistics: distribution of records, parmlib options

OMEGAMON XE for Storage
Data Collection

- FREQUENCY of collection DEFAULTS*
  - **Performance**

Cache Statistics	every 5 minutes
Dataset I/O	every minute

  - **SPACE**

Space & Fragementation Index	RMF Interval

  - **Dataset attributes** — once every 24 hours
  - **RMM attributes** — once every 24 hours

    * These values can be customized

OMEGAMON XE for Storage
Data Collection

Performance Data

Cache Statistics	every 5 minutes
Dataset I/O	every minute

There are 3 methods for monitoring dataset response time and cache statistics:

Every I/O
Every nth I/O
MSR Millisecond Response time Interval
no results are collected if the threshold has not been exceeded

OMEGAMON XE for Storage
Data Collection

Space

Space & Fragementation Index RMF Interval

Volume information is obtained every RMF interval (by default)

Storage Group metrics are calculated.

Dataset information is obtained when navigating to the workspace
The query executes. *Real Time*

OMEGAMON XE for Storage
Data Collection

DataSet Attributes

Dataset attributes	once every 24 hours

- Automation or Operator command can re-drive Dataset Attributes Collector

  /F *temsname,*S3DA START

OMEGAMON XE for Storage
Data Collection

RMM Attributes

RMM attributes	once every 24 hours

- Automation or Operator command can re-drive the RMM Attributes Collector

/F *temsname,*S3RM START

OMEGAMON XE for Storage
Questions

OMEGAMON XE for Storage
Reference

Tivoli OMEGAMON XE for Storage on z/OS Planning and Configuration Guide	SC23-9702-00
Tivoli OMEGAMON XE for Storage on z/OS User's Guide	SC23-9703-02
Tivoli OMEGAMON XE for Storage on z/OS Tuning Guide	SC23-9704-01
Tivoli OMEGAMON XE for Storage on z/OS Troubleshooting Guide	SC23-9705-02