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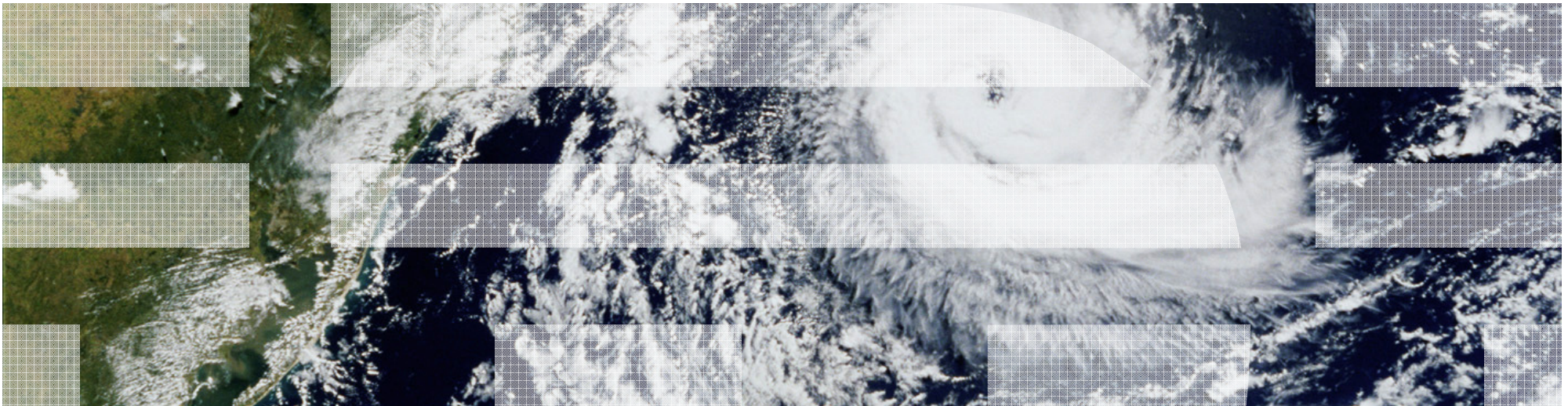
IBM UK

Session 8042

Wednesday, 09:30 AM - 10:30 AM

Hynes, Room 309

# DFSMSrmm: What's new in z/OS V1.12 and z/OS V1.11



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## Agenda

- Ease of Use
- Optimization
- Performance and Scalability
- Availability and RAS



## Summary z/OS DFSMSrmm V1R12

- Ease of Use
  - Retention Limit Reporting (Roll-back to R10 via APAR OA30881)
  - Ignore for duplicate volumes
  - Automation for WTORs in Production and Parallel Running
  - Expiration Override for Volumes
  - ISPF Dialog CLIST option to avoid search results list
- Optimization
  - Copy Export Sample Reports from Export Status and BVIR
- Performance and Scalability
  - All RMM Data Sets EAS Eligible, 'XTIOT' Support
  - IPV6 Support
  - Contribution to z/OS Target of 5% improvement / Release
- Availability and RAS
  - Status Available via Subcommand and API
  - STOP/CANCEL Recovery Improvements
  - PDA Trace Enhanced to trace outside subsystem address space

## Summary z/OS DFSMSrmm V1R11

### ▪ Simplification

- SEARCHVOLUME Subcommand and ISPF dialog supports extended searching
  - Date ranges, actions, options and flag settings
- Report Generator, improving usability, enabling more customization of reports, and simplifying the way that selection information can be specified for DFSMSrmm, DFSMSshm and other DFSMS components.
  - Exploitation of recent changes to DFSORT and ICETOOL
  - Data typing
  - Report type inheritance
- Additional function call based interface will be provided to the DFSMSrmm API
  - supports the return of associated error messages in addition to the error codes.
  - Suitable for high level languages
- VOLUME ADD dialog supports volume type, storage group name, and creation date and time.
- DATASET DISPLAY supports point and shoot to the VRS policies that are being used for the data set
- EDGINERS supports reading and cross-verification of first file label information
- New parmlib options for GDG cycle control and duplicate generation retention
- Sample CBRUXVNL, is enhanced to help avoid customer modification
- Mixed Case Data Set Name Support for Dialog
- No longer a need to redefine VRSEs when location definitions are changed

## Summary z/OS DFSMSrmm V1R11 . . .

- open and industry standards
  - CIM agent and providers support CIM level 2.17 and OpenPegasus 2.8.1
- Availability
  - CDS updates made in test or recovery environments can be repeated against the production RMMplex.
- Scalability & Performance
  - Callers of DFSMSrmm API can request multiple resources returned in a single API call
    - Reduces the overhead of API and command processing
  - Subcommands now limit the number of Rexx special stem variables using .0
  - Subcommand processing enhanced with improved use of resources
  - Exploitation of z/OS Dynamic Exit Facility for all installation exits
- RAS (Maintainability/Quality)
  - VRSEL(OLD) parmlib option is removed
- Migration Health Checks (OA26947)
  - Support GDG, VRSEL(OLD), and Rexx special stem variable migration tasks
- Device Support
  - TS7700 Copy Export Support (OA24970)

## New Function Overview

<i>Function</i> \ <i>z/OS (RMM) release</i>	<i>z/OS V1.12</i>	<i>z/OS V1.11</i>	<i>z/OS V1.10</i>	<i>z/OS V1.9</i>
<i>Retention limit reporting</i>	+	OA30881	OA30881	
<ul style="list-style-type: none"> <li>•Volume Hold</li> <li>•EAS Eligibility</li> <li>•OPENRULE IGNORE</li> <li>•IPv6</li> <li>•AUTOR</li> <li>•Addt. Status commands &amp; RAS enhancements</li> </ul>	+			
<i>Option to turn uppercasing on/off</i>	+	OA32661	OA32661	OA32661
<i>TS7700 1.6 Support , Logical WORM</i>	+	OA28637	OA28637	OA28637
<ul style="list-style-type: none"> <li>•Report generator extensions</li> <li>•Journaling for D/R, EDGUPDT</li> <li>•EDGINERS SCAN</li> </ul>	+	+		
<i>Migration checks for z/OS V1.11+ coexistence</i>	+	OA32028	OA26947 OA32028	OA26947 OA32028
<i>z/OS V1.11+ coexistence</i>	+	N/A	OA25714 OA28232	OA25714 OA28232

+: Support integrated into release base

# Retention limit reporting (V1.12 w/ rollback to V1.10)

## Overview

### **Problem Statement:**

- You want to quickly and easily identify what volumes have triggered the EXPDTDROP or VRSRETAIN threshold

### **Solution:**

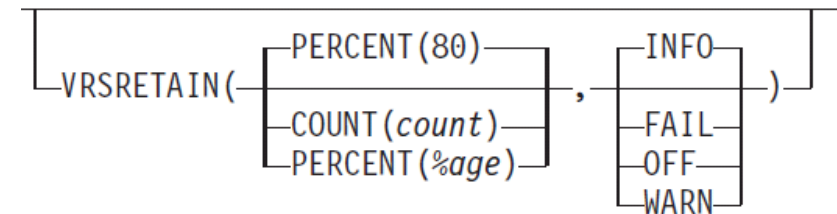
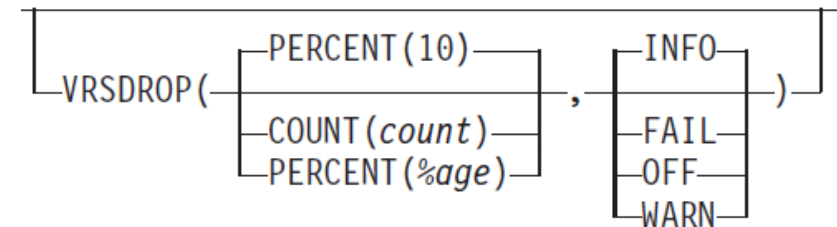
- Using a combination of ACTIVITY file and Extended EXTRACT file records, sample ICETOOL job EDGJACTP can produce detail and summary reports
  - EXPDROP and EXPDROPS,
  - VRSRETN and VRSRETNS
  - of those volumes affected.

### **Benefit:**

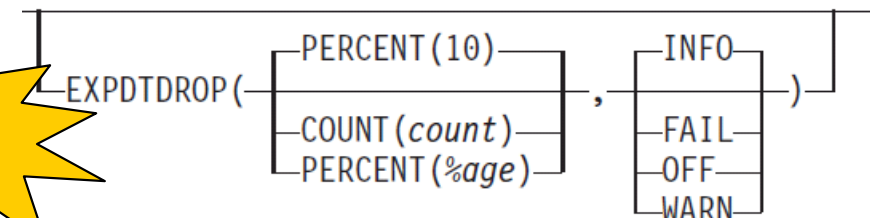
- You will see all affected volume information at a glance

## Safety net: EXPDTDROP / VRSDROP / VRSRETAIN

- **VRSDROP** specifies how many existing VRS-retained volumes may be dropped from vital records retention and the action to be taken by DFSMSrmm.
- **VRSRETAIN** specifies how many newly assigned volumes are to be retained by vital records retention.
  - A newly assigned volume is one that has a volume assignment time that is higher than the run time of the previous VRSEL processing and that is not VRS-retained.
- EXPDTDROP specifies how many existing expiration date retained volumes may be dropped from retention. An EXPDT-retained volume is one that is not VRS-retained and is not newly assigned
  - EXPROC: additional processing may be required



**OA33526**  
required



## Updated ACTIVITY file

- Previous ACTIVITY file records reflect only CDS changes during VRSEL inventory management
- New volume ACTIVITY file records
  - Created only when **VRSRETAIN / EXPDTDROP** action is not set to OFF
  - Created by VRSEL for newly assigned volumes that are
    - retained only by a volume VRS, or
    - retained only because
      - they are in a volume set, another volume in the set is VRS retained by VRSEL processing, and RETAINBY(SET)
  - Created by EXPROC for **EXPDT retained volumes** set to *pending release* because they are expired

## Processing of the RPTTEXT parameter

- If during inventory management
  - the threshold for VRSDROP, VRSRETAIN or EXPDTDROP is reached, and
  - action is set to FAIL
- then
  - DFSMSrmm stops VRSEL processing prior to making CDS updates,
  - any other inventory management processing ends with return code 12,
  - but the report extract is run if requested

## Updated Sample Report EDGJACTP (part 1)

- The new report files created for EXPDTDROP retention limit reporting are:
  - EXPDROP
    - EXPDT retained volumes subject to EXPDTDROP
  - EXPDROPS
    - Summary of EXPDT volumes for EXPDTDROP
- The new report files created for VRSRETAIN retention limit reporting are:
  - VRSRETN
    - Newly assigned volume subject to VRSRETAIN
  - VRSRETNS
    - Summary of newly assigned volumes for VRSRETAIN
- Use Existing Report files for VRSDROP retention limit reporting
  - VRS
    - All VRS status changes to data sets
  - VRSS
    - Summary of retained and drop reasons for data sets

## Updated Sample Report EDGJACTP (part 2)

- The new sample reports requires that the date formats used for the ACTIVITY file and report extract file are the same, and for correct processing requires either **ISO or Julian date format**.
- If you did not include RPTEXT, **you should create a report extract file with extended records as soon as possible** and definitely before any other inventory management functions are used to update the control data set to assure an accurate retention limit reporting.
- EDGJACTP VRSRETN, VRSRETNS, EXPDROP, and EXPDROPS reports provide **good analysis of the processing** that would have been or is performed, regardless whether:
  - it is a trial run or the retention limit trigger action is FAIL so no updates made to the CDS by inventory management and the report extract file reflects the CDS contents at the start of the run, or
  - the report extract reflects the updates made by the inventory management run.

## Sample EXPDTDROP Report

EXPDT retained volumes subject to EXPDTDROP					01/20/09	05:55:21	- 1 -						
Status: RELEASED													
<u>VOLSER</u>	<u>VSEQ</u>	<u>DSNAME</u>	<u>JOENAME</u>	<u>EXPRSN</u>	<u>ASSIGNED</u>	<u>EXPDT</u>	<u>SR</u>	<u>RETDATE</u>	<u>ACTIONS</u>	<u>LOCATION</u>	<u>HOME</u>	<u>DEST</u>	<u>RLS ACT</u>
A22255	1	NOMATCH.DSN5	SSTEINHA	X	12/12/1999	01/01/2009	N	19/02/2008	S EN	ROBBIE	ROBBIE		S EN
A22256	1			X	12/12/1999	31/12/2008	N		O	VAULT	SHELF	SHELF	O
Volumes in this status:					2								
EXPDT retained volumes subject to EXPDTDROP					01/20/09	05:55:21	- 2 -						
Status: NOCHANGE													
<u>VOLSER</u>	<u>VSEQ</u>	<u>DSNAME</u>	<u>JOENAME</u>	<u>EXPRSN</u>	<u>ASSIGNED</u>	<u>EXPDT</u>	<u>SR</u>	<u>RETDATE</u>	<u>ACTIONS</u>	<u>LOCATION</u>	<u>HOME</u>	<u>DEST</u>	<u>RLS ACT</u>
A22257	1	DSN7	SSTEINHA		02/06/1993	PERM	N	12/12/2008		VAULT	ROBBIE		S
A22258	1	DSN7	SSTEINHA		02/06/1993	05/01/1990	Y	12/12/2008		VAULT	ROBBIE		S
Volumes in this status:					2								

Summary of EXPDT retained volumes for EXPDTDROP		01/20/09	05:55:21	- 1 -
<u>Status</u>	<u>VOLUME COUNT</u>			
NOCHANGE	2			
RELEASED	2			

# An Example of VRSRETAIN Report

Newly assigned volumes subject to VRSRETAIN										01/20/09	05:55:21	- 1 -			
Status: RETAINED															
D A T A S E T				D A T A S E T		V R S	V O L U M E		JOB MASK	VRS TYPE	VRS	RETAIN REASON	FILE COUNT	IN SET	
VOLSER	FSEQ	DSNAME	JOBNAME	RETAINED	DROP PRIM	REASON 2nd.	PRIMARY VRS								
VOL1	1	RMMUSER.DSN11		Y			RMMUSER.*		D			DATASET	3	N	
VOL1	2	RMMUSER.DSN12		N	W		RMMUSER.*		D			IMPLICIT	3	N	
VOL1	3	RMMUSER.DSN13		Y			RMMUSER.*		D			DATASET	3	N	
VOL2	1	D046059.DSN21		N	W		D046059.*		D	VOL2		VOLUME	2	N	
VOL2	2	D010155.DSN22								VOL2		VOLUME	2	N	
VOL6	1	D046059.DSN61		N	D		D046059.*		D			SET	1	Y	
VOL7	1	D077077.DSN71										IMPLICIT	2	Y	
VOL7	2	D077077.DSN72		Y			D077077.DSN72		D			DATASET	2	Y	
data sets in this status:				8											
Newly assigned volumes subject to VRSRETAIN										01/20/09	05:55:21	- 2 -			
Status: NOTRETAINED															
D A T A S E T				D A T A S E T		V R S	V O L U M E		JOB MASK	VRS TYPE	VRS	RETAIN REASON	FILE COUNT	IN SET	
VOLSER	FSEQ	DSNAME	JOBNAME	RETAINED	DROP PRIM	REASON 2nd.	PRIMARY VRS								
VOL3	1	RMMUSER.DSN31	STEINHA	N	W		RMMUSER.*		D				1	Y	
VOL4	1	D010155.DSN41											2	Y	
VOL4	2	RMMUSER.DSN42		N	W		RMMUSER.*		D				2	Y	
VOL5	1	D010155.DSN51											3	N	
VOL5	1	D010155.DSN52											3	N	
VOL5	1	D010155.DSN53											3	N	
data sets in this status:				6											

Summary of newly assigned volumes for VRSRETAIN										01/20/09	05:55:21	- 1 -
Status	VOLUME COUNT											
RETAINED	4											
NOTRETAINED	3											

## OPENRULE IGNORE (V1.12)

- Ignore processing for specific volser request (read and write)
  - The external/vision volser is used to identify the mounted volume

Library	OPENRULE for		Result in	
	requested volser	VOL1 volser	V1R11	V1R12
Non-system managed (SHELF)	IGNORE	ACCEPT	requested volser ignored (at file validation)	requested volser ignored (at mount verification)
	ACCEPT	IGNORE	VOL1 volser ignored, <b>LBL ERR VOL1</b>	accepted
System managed (ATL)	IGNORE	ACCEPT	requested volser ignored (at file validation)	requested volser ignored (at mount verification)
	ACCEPT	IGNORE	VOL1 volser ignored, <b>613-1C requested volser</b>	accepted

## WTOR Automation

- Problem addressed:
  - Missing or incorrect operator replies
    - Impact production tape processing
- Solution
  - Exploit new Automated Reply Support in PARMLIB
    - AUTOR00
      - Includes a subset of key WTOR Replies for RMM
    - AUTORRM
      - Includes Suggested replies for Production use
    - AUTORRP
      - Includes Suggested replies for Parallel Running
      - Keep RMM Running while migrating to RMM

## WTOR Automation ...

### ■ Example:

```
/*-----*/  
/* EDG2103D PERMANENT JOURNAL ERROR - REPLY "R" TO RETRY, "I" TO */  
/* IGNORE, "D" TO DISABLE OR "L" TO LOCK */  
/* reply "DISABLE" and notify Tech Support to run EDGHSKP BACKUP */  
/* to re-enable the journal. */
```

**MSGID(EDG2103D) DELAY(30s) REPLY(L)**

```
/*-----*/  
/* EDG2106D JOURNAL AND CONTROL DATASET DO NOT MATCH - REPLY "C" TO */  
/* CANCEL, "D" TO DISABLE OR "L" TO LOCK */  
/* reply LOCK and notify Tech Support to run EDGHSKP BACKUP */  
/* to re-enable the journal. */
```

**MSGID(EDG2106D) DELAY(30s) REPLY(L)**

```
/*-----*/  
/* EDG2120D ALLOCATED JOURNAL IS TOO BIG - REPLY "C" TO CANCEL, */  
/* "D" TO DISABLE OR "U" TO USE MAXIMUM ALLOWED SIZE */  
/* reply "U" to use maximum allowable size */
```

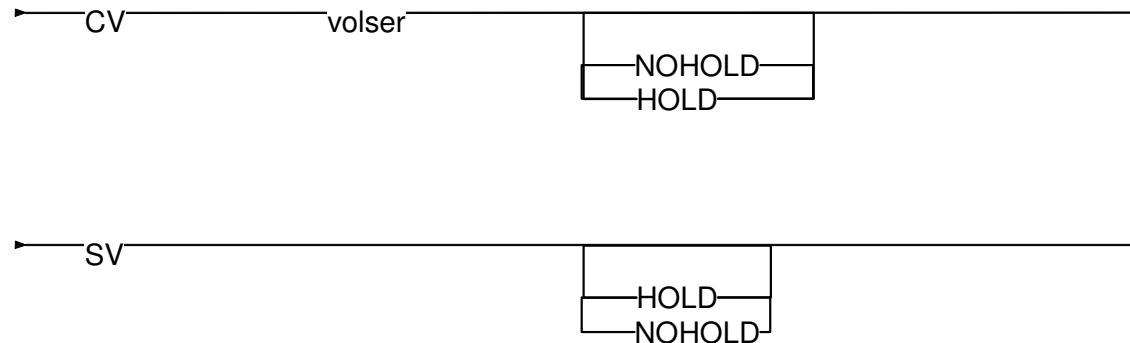
**MSGID(EDG2120D) DELAY(30s) REPLY(U)**

## Expiration Override

- Problem
  - Difficult to determine how data sets and volumes are retained
  - Setting EXPDT(99365) might not force retention
  - Changing policies or EXPDT causes loss of actual retention policy
- Solution
  - New Subcommand to prevent expiration
  - Existing policy and retention is unchanged

## Expiration Override ...

- Subcommand Changes:



- Setting using the dialog
  - New 'HY' and 'HN' line commands
- When HOLD attribute is set:
  - Unable to RELEASE the volume
  - EXPROC prevents expiration

## New Report Generator sample report EDGGAHLD

Held volumes by volume Serial

- 1 -

2009/10/20

Extract file was created on 2009/10/20 at 052041

Volume	Dataset name	Vol seq	DSN seq	Creating jobname
-----	-----	----	----	-----
A06933	USER1.DATASET1	1	1	RMMUSER
A06934	USER1.DATASET2	1	1	RMMUSER
A06935	USER1.DATASET3	1	1	RMMUSER

Removable Media Manager

05:20:49

DSN date created	DSN time created	Vol exp date	Vol date read	Vol date write	Retention date	Volume Status	Location
-----	-----	-----	-----	-----	-----	-----	-----
2009/12/01	043425	2009/12/01	2009/10/20	2009/10/20		MASTER	SHELF
2009/12/01	043425	2009/12/01	2009/10/20	2009/10/20		MASTER	SHELF
2009/12/01	043425	2009/12/01	2009/10/20	2009/10/20		MASTER	SHELF

## Authorization

Define the resource	To Control the
STGADMIN.EDG.CV.HOLD. <i>volser</i> STGADMIN.EDG.CV.NOHOLD. <i>volser</i>	Use of the CHANGEVOLUME with HOLD/NOHOLD


When you define	With Access	Then
STGADMIN.EDG.CV. <i>hold.volser</i>  <b>Note:</b> RACF profile must not contain generic characters prior to 'hold.volser'	Entity not defined	CONTROL access to STGADMIN.EDG.MASTER is required
	NONE	No authority is granted to use CV HOLD/NOHOLD
	UPDATE	You are permitted to set and reset the volume HOLD attribute

## Dialog CLIST Processing Option

```
EDGP@CLS                      DFSMSrmm CLIST Processing
Command ===>

Enter optional prefix and suffix values
Prefix . . . . . 'RMM LV '
Returned text depending on resource being searched
Suffix . . . . . ' ALL'

Enter optional fully qualified or partial data set information for CLIST
Data set name . . . . .
Expected data set size                      records
Extend existing CLIST                      YES, NO or blank

View search results      NO  YES, NO or blank

Press ENTER to CONTINUE, or END to RETURN.
```

If you choose **View search results: NO** (which is the default),  
the search result list is not displayed

## EDGINERS SCAN (V1.11)

### **Problem Statement / Need Addressed:**

- The DFSMSrmm tape utility EDGINERS performs initialization and erasure of tapes. For tape label read and display another utility like DITTO / File Manager has to be used.

### **Solution**

- EDGINERS is updated to support the [reading of tape label information and cross-verification](#) with the records defined in the DFSMSrmm control data set.

### **Benefit**

- New function SCAN helps with identifying and managing tapes, that come from other systems or are in a problem state.
- A single utility fulfills your needs around tape labeling.

## Tape Label Scan

SCAN is a new **SYSIN command** for EDGINERS **manual** processing.

JCL Job step to scan a tape label :

```
//SCAN      EXEC PGM=EDGINERS
//SYSPRINT DD SYSOUT=*
//TAPE      DD UNIT=(unit, ,DEFER)
//SYSIN      DD *
    SCAN VOLUME(A22201)
```

### SYSIN command

#### Syntax:

►►—— SCAN ——— VOLUME ( *volser* ) ———►◄

**VOLUME** is the only valid operand and is required.

## Tape Label Scan Output

Message **EDG6679I** and **EDG6683I** in SYSPRINT file:

EDG6679I SCAN RESULTS:

\* \* \* \* Device 1B30, TAPE, VOLSER=A22203

VOL1 label = VOL1A22203

3

-----  
Data set 0001 1...5...10...15...20...25...30...35...40...45...50...55...60...65...70...75...80

HDR1 label = HDR1G.H1234567.J12345A2220300010001000100008297000000 000000IBMZLA

HDR2 label = HDR2F000800008000SSTEINHA/WRITE3 B 00

\* Tape mark

-----  
LBL volser Dsname Vsq Dseq Crdate Jobname Step RECF LRECL BLKSZ  
On volume AL A22203 G.H1234567.J12345 001 00001 2008/297 SSTEINHA WRITE3 FB 80 80  
Mismatch(\*) \*  
RMM data AL A22203 D046059.LONG.AL44.DSN3.NOGDG.H1234567.J12345 001 00001 2008/001 SSTEINHA WRITE3 FB 80 80

EDG6683I MISMATCH ON Crdate



The display of the **label information** is almost the same as DITTO/File Manager tape scan up to first tape mark.

## Tape Label Scan Output

EDG6679I SCAN RESULTS:

\* \* \* \* Device 1B30, TAPE, VOLSER=A22203

VOL1 label = VOL1A22203 3

-----  
Data set 0001 1...5...10...15...20...25...30...35...40...45...50...55...60...65...70...75...80

HDR1 label = HDR1G.H1234567.J12345A222030001000100008297000000 000000IBMZLA

HDR2 label = HDR2F000800008000SSTEINHA/WRITE3 B 00

\* Tape mark

	LBL	volser	Dsname	Vsq	Dseq	Crdate	Jobname	Step	RECF	LRECL	BLKSZ
On volume	AL	A22203		G.H1234567.J12345	001	00001	2008/297	SSTEINHA WRITE3	FB	80	80
			Mismatch(*)				*				
RMM data	AL	A22203	D046059.LONG.AL44.DSN3.NOGDG.H1234567.J12345	001	00001	2008/001	SSTEINHA WRITE3	FB	80	80	80

- **Summary information** enables the label information and DFSMSrmm information to be compared
- Displayed for SL, AL or RMNL labels (standard labels)
- RMM volser is RVVOLSER or for duplicate volumes RVVOL1
- Differences are highlighted by an \*
- Label contains only last 17 characters of data set name

## Tape Label Scan output on z/OS console

Operator will see partial results:  
Multi-line message **EDG6682I** on console  
and system log

```
07.15.50 STC00038  EDG6682I  SCAN RESULTS (TRUNCATED): FOR FULL DETAILS -
REFER TO SYSPRINT
* * * * Device 1B30, TAPE, VOLSER=A22203
VOL1A22203
-----
1...5...10...15...20...25...30...35...40...45...50...55...60...65...70.
HDR1G.H1234567.J12345A2220300010001000100008297000000 000000IBMZLA
HDR2F000800008000SSTEINHA/WRITE3      B      00
      * Tape mark
-----
LBL volser Dsname                      Vsq Dseq  Crdat
AL  A22203                      G.H1234567.J12345 001 00001 2008/
      Mismatch(*)                      *
AL  A22203 D046059.LONG.AL44.DSN3.NOGDG.H1234567.J12345 001 00001 2008/

07.15.50 STC00038  EDG6683I  MISMATCH ON Crdate
```

WTOR Scan command produces a **truncated output** because of the console message length limits,  
the complete output is available via EDG6679I in SYSPRINT file.

## Agenda

- Ease of Use
- Optimization
- Performance and Scalability
- Availability and RAS



## Copy Export Reporting (V1.12)

### *TS7700 Virtualization Engine*

- Use EDGJCEXP sample job to generate reports about copy exported data combining information from
  - TS7700 library
    - BVIR or Export status file
  - DFSMSrmm extended extract records
- Reports are provided sorted
  1. by data set name
  2. by logical volume serial number
  3. by stacked volume serial number



# Copy Export Reporting Overview

## Export Status File

Stacked Volume  
Serial Number

Logical Volume  
Serial Number

Date / Time  
of Copy Export

***** Top of Data *****									
EXPORT STATUS 02									
HYD861	A02085	,00,						,00000007	,00000007
HYD862	A02081	,00,						,00000004	,00000004
HYD864	A02082	,00,						,00000005	,00000005
HYD865	A02082	,00,						,00000006	,00000006
HYD866	A02083	,00,						,00000008	,00000008
HYD867	A02084	,00,						,0000000A	,0000000A
HYD868	A02085	,00,						,0000000B	,0000000B
HYD869	A02085	,00,						,00000009	,00000009
PHYSICAL VOLUMES WITH EXPORTED STATUS 01									
AVOL	POOL	FM	MBYTES	%UTL	MED	COPY	EXPORTED	TIME	
A02075	12	5	0	0	5		2009-10-29-07.04.44		
A02076	12	5	0	0	5		2009-10-29-07.38.39		
A02077	12	5	0	0	5		2009-10-29-07.47.21		
A02078	12	5	0	0	5		2009-11-02-00.19.02		
A02082	12	5	0	0	5		2009-11-02-04.29.54		
A02080	12	5	0	0	5		2009-11-02-04.46.11		
A02081	12	5	0	0	5		2009-11-02-05.04.28		
A02083	12	5	0	0	5		2009-11-02-06.09.16		
A02084	12	5	0	0	5		2009-11-02-06.29.02		
A02085	12	5	1	1000	5		2009-11-03-07.39.13		
***** Bottom of Data *****									

# Overview

## ■ BVIR - Volume Map

Stacked Volume  
Serial Number

Logical Volume  
Serial Number

\*\*\*\*\* Top of Data \*\*\*\*

VTS BULK VOLUME DATA REQUEST  
VOLUME MAP  
11/03/2009 03:22:06 VERSION 02  
S/N: 3484G LIB ID: 3484A

PHYSICAL	LOGICAL	P/B	ORDER	PART	SIZE
A02032	HYD869	B	000001	1 OF 1	0.00 M
A02032	HYD880	B	000002	1 OF 1	0.00 M
A02037	HYD864	B	000001	1 OF 1	0.00 M
A02037	HYD865	B	000002	1 OF 1	0.00 M
A02037	HYD862	B	000003	1 OF 1	0.00 M
A02037	HYD866	B	000004	1 OF 1	0.00 M
A02037	HYD868	B	000005	1 OF 1	2.35 M
A02037	HYD867	B	000006	1 OF 1	0.00 M
A02037	HYD861	B	000007	1 OF 1	0.00 M
A02037	HYD880	B	000002	1 OF 1	1.00 M
A02073	HYD697	P	000001	1 OF 1	237.86 M
A02073	HYD511	P	000002	1 OF 1	0.00 M
A02073	HYD504	P	000003	1 OF 1	313.75 M
A02073	HYD804	P	000004	1 OF 1	0.00 M
A02073	HYD711	P	000005	1 OF 1	24.15 M
A02073	HYD713	P	000006	1 OF 1	24.15 M
A02073	HYD715	P	000007	1 OF 1	24.16 M

## Overview

- BVIR - Physical Volume Status Pool xx

Stacked Volume  
Serial Number

Volume  
status

\*\*\*\*\* Top of Data \*\*\*\*\*

VTB BULK VOLUME DATA REQUEST

PHYSICAL VOLUME STATUS POOL 12

10/30/2009 01:26:27 VERSION 02

S/N: 3484G LIB ID: 3484A

A02075	12	EMPTY	COPY_EXPORTED	1970-01-01-00.00.00.000000	2009-10-29-16.50.05.000
A02076	12	EMPTY	COPY_EXPORTED	1970-01-01-00.00.00.000000	2009-10-29-16.50.05.000
A02077	12	FULL	COPY_EXPORTED	1970-01-01-00.00.00.000000	2009-10-28-16.50.06.0000
A02078	12	FILLING	READ-WRITE	1970-01-01-00.00.00.000000	2009-10-28-16.50.06.0000
A02079	12	EMPTY	READ-WRITE	1970-01-01-00.00.00.000000	2009-10-29-16.50.05.000000
A02080	12	EMPTY	READ-WRITE	1970-01-01-00.00.00.000000	2009-10-29-16.50.05.000000
A02081	12	EMPTY	READ-WRITE	1970-01-01-00.00.00.000000	2009-10-29-16.50.05.000000

\*\*\*\*\* Bottom of Data \*\*\*\*\*

# Overview

## ■ EDGJCEXP Report – sorted by data set

Copy Exported Data Sets

- 1 -

12/08/2009

03:30:21

based on Bulk Volume Information Retrieval data

DATA SET INFORMATION

DATA SET NAME	CREATE DATE	CREATE TIME	REC FM	BLK SIZE	RETENTION DATE	EXPIRATION DATE	PHYSICAL FILE	V SEQ	R
BERNDS.EXPIRED.HYD868	2009/338	082750	F	80	2009/353	2009/341	1	Y	
BERNDS.EXPIRED.HYD880	2009/337	150732	F	80	2009/352	2009/340	1	Y	
BERNDS.MULTI.VOLUME.DS1	2009/338	082524	FB	80	2009/353	2009/341	1	Y	
BERNDS.MULTI.VOLUME.DS1	2009/338	082524	FB	80	2009/353	2009/341	1	Y	

LOGICAL VOLUME INFO

VOLSER	VOLSEQ	REQUIRED LOCATION	EXPIRATION DATE
HYD868	1	MAZ2	2009/341
HYD880	1	MAZ2	2009/341
HYD862	1	MAZ2	2009/341
HYD861	1	MAZ2	2009/341

STACKED VOLUME INFO

VOLSER	CURRENT LOCATION	DESTI NATION	IN TRAN	RETENTION DATE	V R
A02039	ATL3484F	MAZ1	Y	2020/001	Y
A02039	ATL3484F	MAZ1	Y	2020/001	Y
A02039	ATL3484F	MAZ1	Y	2020/001	Y
A02039	ATL3484F	MAZ1	Y	2020/001	Y

COPY EXPORT INFO

EXPORT DATE	EXPORT TIME
2009/338	083938
2009/338	083938
2009/338	083938
2009/338	083938

## Overview

### ▪ EDGJCEXP Report – sorted by logical volume

Copy Exported Data Sets By Logical Volume

- 1 -

12/08/2009

03:30:22

based on Bulk Volume Information Retrieval data

Logical Volume Info: HYD861 1 MAZ2 2009/341

DATA SET INFORMATION

DATA SET NAME	CREATE DATE	CREATE TIME	REC FM	BLK SIZE	RETENTION DATE	EXPIRATION DATE	PHYSICAL FILE	V SEQ	R
BERNDS.MULTI.VOLUME.DS1	2009/338	082524	FB	80	2009/353	2009/341	1	Y	
BERNDS.SEC14.HYD861	2009/338	082527	F	80	2009/353	2009/341	2	Y	
BERNDS.SEC14.HYD861	2009/338	082638	F	80	2009/353	2009/341	3	Y	
BERNDS.SEC14.HYD861	2009/338	082749	F	80	2009/353	2009/341	4	Y	


STACKED VOLUME INFO

COPY EXPORT INFO

VOLSER	CURRENT LOCATION	DESTI NATION	IN TRAN	RETENTION DATE	V R	EXPORT DATE	EXPORT TIME
A02039	ATL3484F	MAZ1	Y	2020/001	Y	2009/338	083938
A02039	ATL3484F	MAZ1	Y	2020/001	Y	2009/338	083938
A02039	ATL3484F	MAZ1	Y	2020/001	Y	2009/338	083938
A02039	ATL3484F	MAZ1	Y	2020/001	Y	2009/338	083938

## Overview

- EDGJCEXP Report – sorted by stacked volume

Copy Exported Data Sets By Stacked Volume		- 1 -	12/08/2009	03:30:22				
based on Bulk volume Information Retrieval data								
Stacked Volume Info: A02039 ATL3484F MAZ1 Y 2020/001 Y 2009/338 083938								
LOGICAL VOLUME INFO								
REQUIRED EXPIRATION								
VOLSER	VOLSEQ	LOCATION	DATE					
HYD861	1	MAZ2	2009/341					
HYD861	1	MAZ2	2009/341					
HYD861	1	MAZ2	2009/341					
HYD861	1	MAZ2	2009/341					
DATA SET INFORMATION								
DATA SET NAME	CREATE DATE	CREATE TIME	REC FM	BLK SIZE	RETENTION DATE	EXPIRATION DATE	PHYSICAL FILE	V SEQ R
BERNDS.MULTI.VOLUME.DS1	2009/338	082524	FB	80	2009/353	2009/341	1	Y
BERNDS.SEC14.HYD861	2009/338	082527	F	80	2009/353	2009/341	2	Y
BERNDS.SEC14.HYD861	2009/338	082638	F	80	2009/353	2009/341	3	Y
BERNDS.SEC14.HYD861	2009/338	082749	F	80	2009/353	2009/341	4	Y

## Agenda

- Ease of Use
- Optimization
- Performance and Scalability
- Availability and RAS



## EAV and XTLOT Support (V1.12)

- Prior to z/OS V1.12:
  - The DFSMSrmm journal is not EAS eligible
  - Only the DFSMSrmm CDS is EAS eligible
  - No XTLOT, uncaptured UCB, DSAB above support
- With z/OS V1.12 and above:
  - Any of the data sets used by or created by DFSMSrmm processing can be in EAS
    - Exception: 'prefix.EXEC.RMM.CLIST' when created automatically by SEARCH subcommand processing
  - DFSMSrmm journal is now EAS eligible
    - Only [when not shared with a z/OS release below z/OS V1R12](#)
  - Support for dynamically allocated files with XTLOT, uncaptured UCB, DSAB above

## IPV6 Support for Client/Server (V1.12)

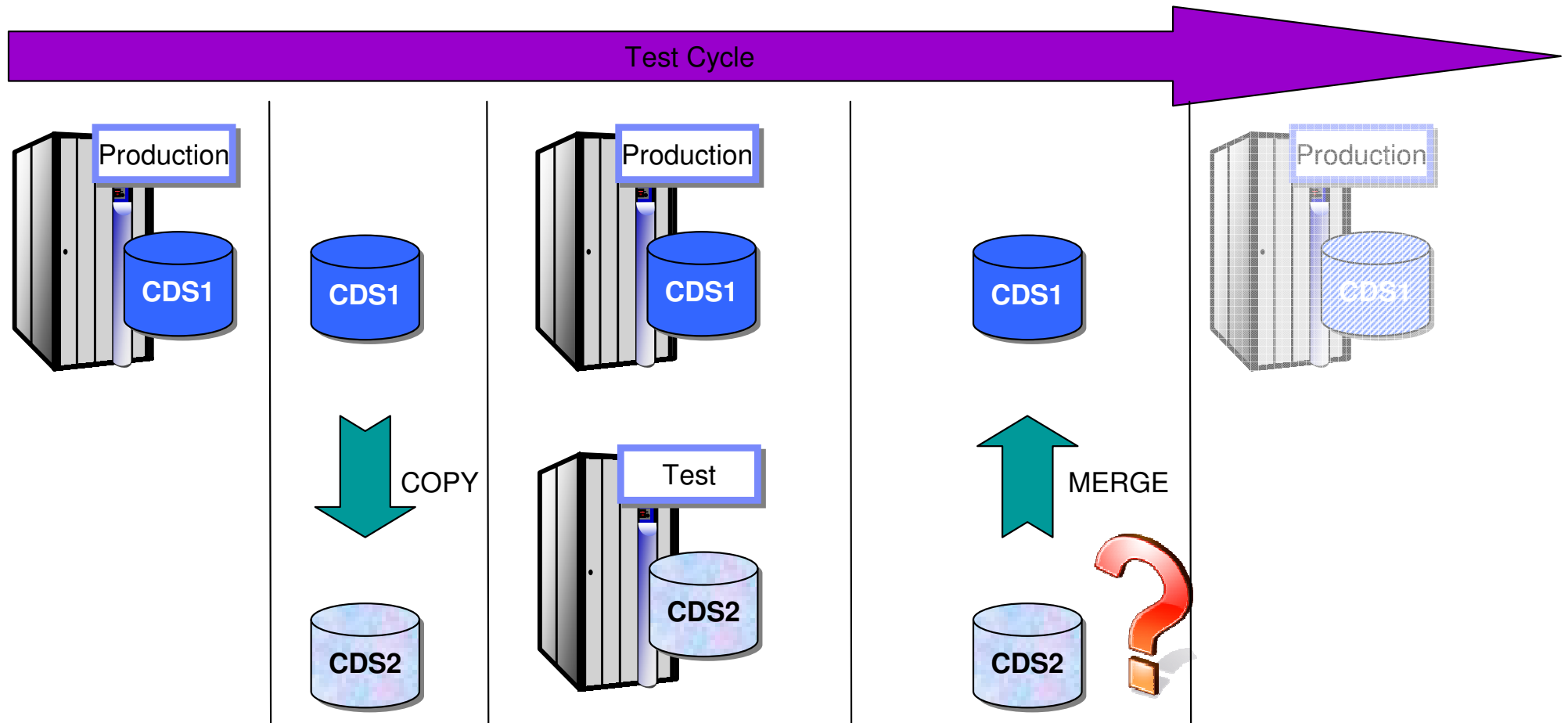
- DFSMSrmm prior to V1R12 release is an IPV4 enabled application
- DFSMSrmm on V1R12 and later releases is an *IPV6 enabled* application and supports both IPV4 and IPV6 sockets
  - Continue to use IPV4 on all systems, or
  - Run a mixed environment with one or more V1R12 systems running IPV6 and lower supported releases using IPV4
    - Once all systems are V1R12 you have the choice to move all systems to IPV6
    - In a mixed environment dual-mode IP stacks are required

## Agenda

- Ease of Use
- Optimization
- Performance and Scalability
- Availability and RAS

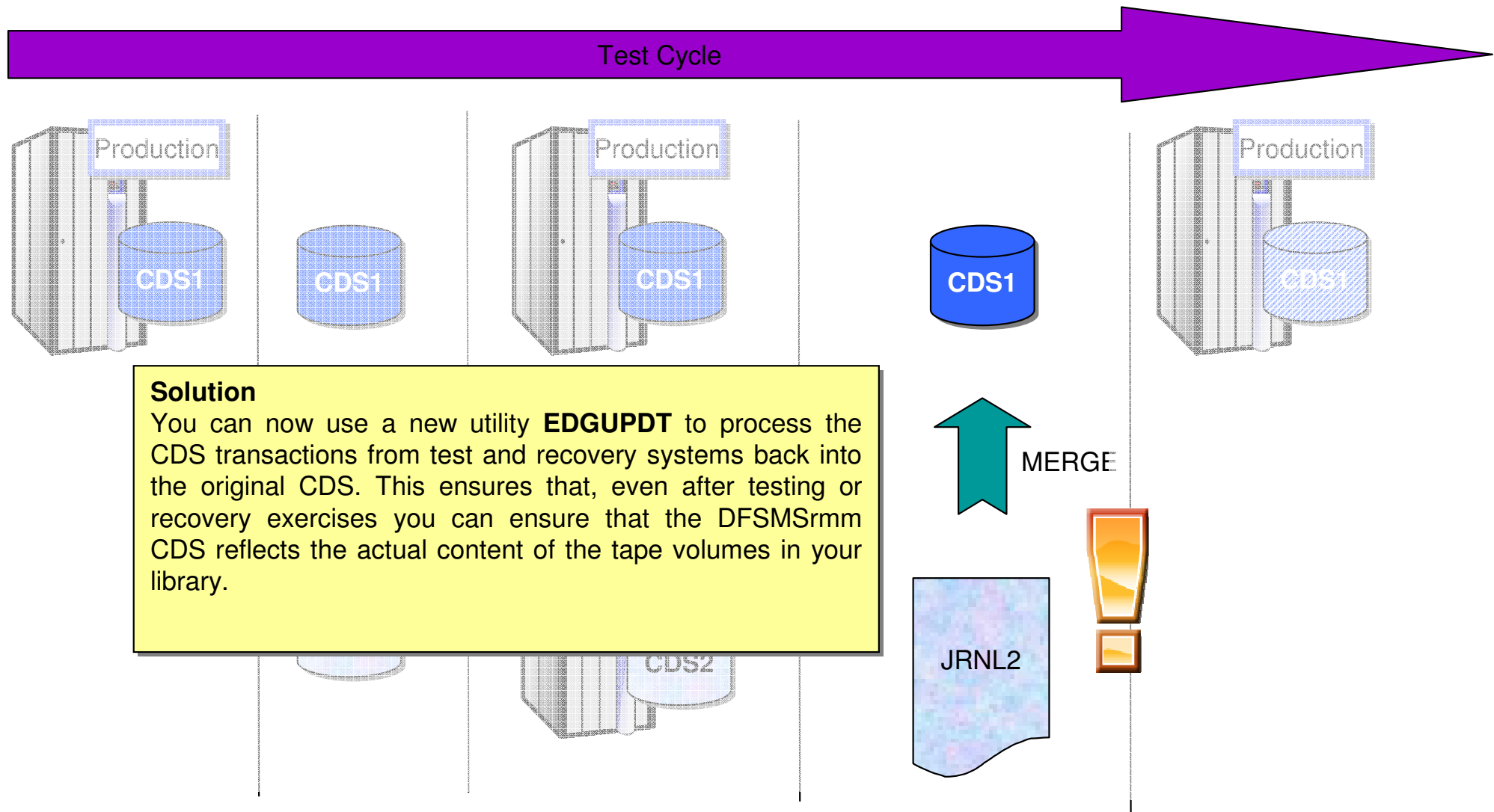


## Test & Recovery with Production CDS (V1.11)

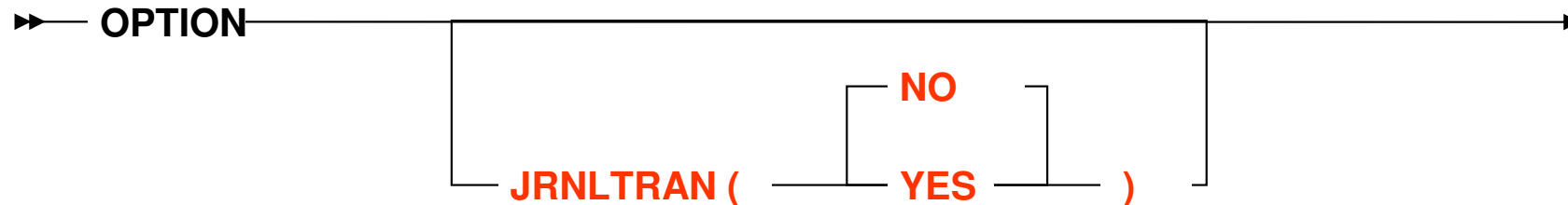


**Problem:** When a copy or backup of the CDS is used in a test or recovery environment there is no way to easily reflect the changes made to the records in the CDS back to the original CDS.

# Test & Recovery with Production CDS



## Parmlib Option Changes



### JRNLTAN(NO|YES)

Use the JRNLTAN operand to specify whether the unchanged copy of a record is journalled as well as the updated copy.

- When JRNLTAN(YES) is specified additional journal records are written to the journal file. The additional record is a pre-update copy of the record being updated.
- You should only set this option on a test or recovery system when you plan to exploit the EDGUPDT utility to duplicate record updates back in the production CDS.
- As a result of using this option you should plan on providing up to 30% more journal data set space to accommodate the additional records.

The default is JRNLTAN(NO).

## EDGUPDT Invocation

Sample JCL :

```
//UPDATE    EXEC PGM=EDGUPDT, PARM=UPDATE  
//SYSPRINT DD SYSOUT=*  
//JOURNAL   DD DISP=SHR, DSN=TEST.SYSTEM.JRNL
```

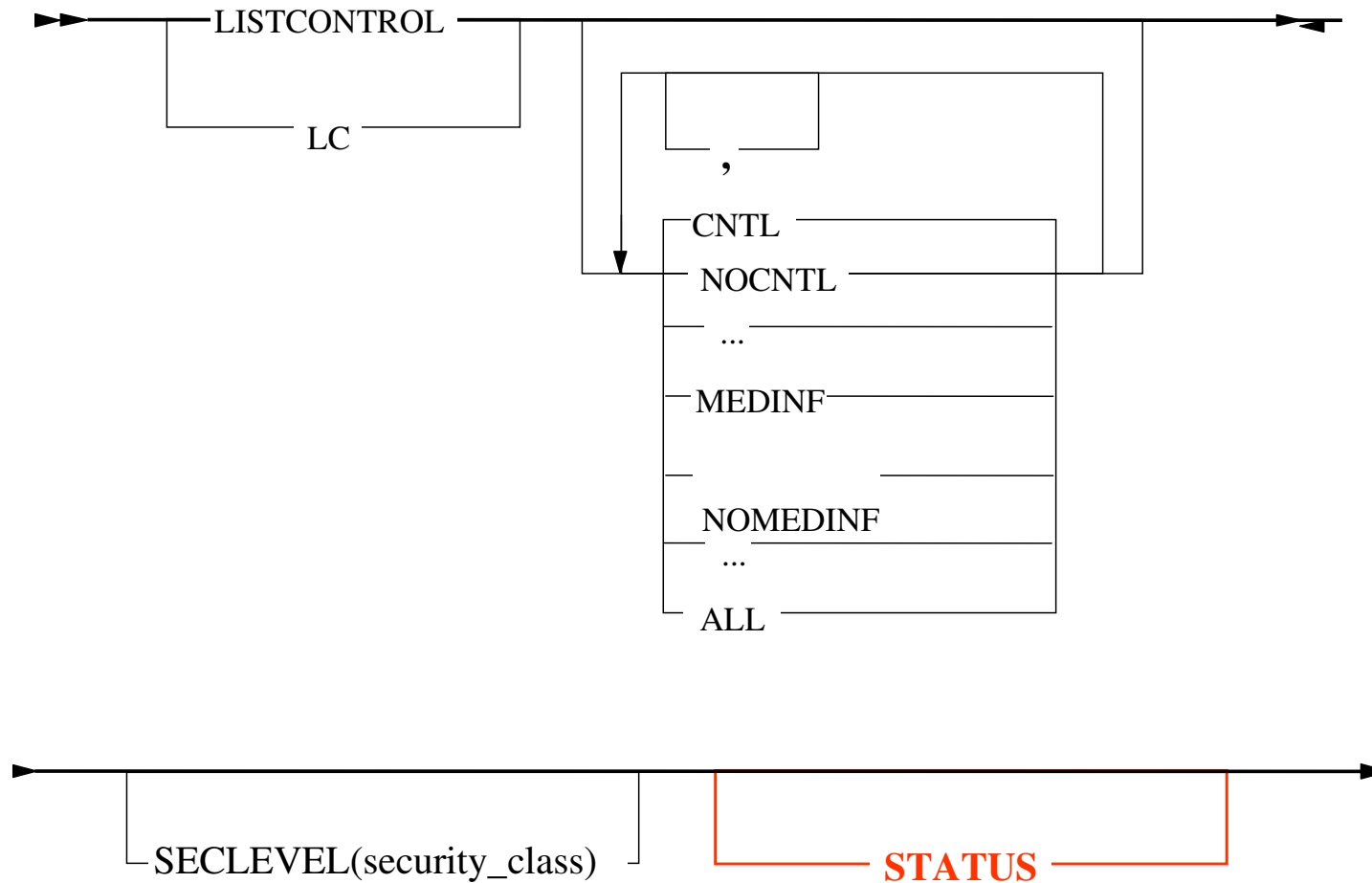
Sample JCL including target date and time :

```
//UPDATE    EXEC PGM=EDGUPDT, PARM=UPDATE  
//SYSPRINT DD SYSOUT=*  
//JOURNAL   DD DISP=SHR, DSN=TEST.SYSTEM.JRNL  
//          DD DISP=SHR, DSN=TEST.JRNL(0)  
//SYSIN     DD *  
UPDATE TARGETDATE(2009/123,12:30:00)  
/*
```

## Status Available via Subcommand and API

- In addition to the MODIFY operator command you can now use
  - RMM LC STATUS subcommand
  - new ISPF panel to retrieve information about the DFSMSrmm subsystem requests, and task status
    - The information returned is very similar to the results of the operator QUERY ACTIVE command.
- **RMM LC STATUS** can be issued
  - using TSO
  - The RMM API, HLL API
  - Web service
  - Using CIM clients
- Use the **CONTROL STATUS** fastpath command in the rmm dialog to view rmm status
  - Enables simple use of Hold, Release and Cancel operator commands to change task status

## RMM LC STATUS Command



## “Control Status” Panel

EDGPC00 Panel:

Allows to Hold, Release and Cancel

Panel Help

EDGPCC00 DFSMSrmm Status Row 1 to 2 of 2  
Command ==> Scroll ==> CSR

DFSMSrmm status . . ACTIVE Journal ENABLED Server listener . . ACTIVE

### Task Commands

Local tasks . . . . 5 Active 2 Held 3 Active . .  
Server tasks . . . 2 Active 2 Held 0 HSKP . . .  
Queued requests . . 0 Nowait 0 Catalog 0 New . . .  
Debug . . . . . DISABLED PDA trace level 1,2,3,4  
Last reserve . . . 06:16:45 Outstanding Y New held :

The following commands are valid: C,H, and R or 'ENTER' to refresh

S	Function	System	Task Name	Started	Token	S	IP	Status
R	ADD	EZU34	JOB	RMMUSERS	06:15:49	0060000B	H	Read < 06:17:09
H	HSKP		JOB	RMMHSKP	04:23:22	00200003		

## STOP/CANCEL Improvements (V1.12)

### ▪ Previously:

- When DFRMM STOP/shutdown processing is delayed
  - EDG0154I SHUTDOWN OF DFSMSrmm DELAYED BY ANOTHER ADDRESS SPACE  
is issued and DFRMM waits for those users to complete their processing. The operator must use the D GRS command to determine the users which cause the delay
- When DFRMM is cancelled during ESTAE processing, the cleanup of running and queued requests may not be completed successfully
  - This potentially leaves users of DFSMSrmm services waiting forever

### ▪ With V1.12:

- DFRMM shutdown now issues an additional message to list the job names of the address spaces preventing shutdown
- DFSMSrmm subsystem interface processing now correctly detects that DFRMM is or has been stopped
  - Fails incomplete and unprocessed requests for the reason 'DFSMSrmm is not active'

```
EDG0154I SHUTDOWN OF DFSMSrmm DELAYED BY ANOTHER ADDRESS SPACE
EDG0155I ADDRESS SPACE LIST BY JOBNAME:
      jobname1 job2      job3      j4      mikesj

      NUMBER OF JOB NAMES DELAYING SHUTDOWN =      5
```

## PDA Trace Record

TIME	USECS	ID	AS/TCB	MOD	LOGIC	CALLER	ARCPRPDO	LEVEL=	-OW1
96319									
121050.389472		01	D18E15		OCEOV	ENTR	OCEXT		
			+R13ADDR=	+0	06447000			.....	
			ASID/JOB=	+0	0240C4C6 D9D4D4F1 C1			..DFRMM1.....	
			DATA=	+0	D3D6C3D2 60			LOCK-.....	

AS/TCB value            D18E15

D1        indicates it is a trace record from a JOB  
 E3        TSU address space  
 E2        STC  
 x'00'     for RMM Subsystem address space

ASID/JOB=            0240C4C6D9D4D4F1C1            \*..DFRMM1.....\*

shows the 2 byte ASID and the 8 character job name

Thank you!

धन्यवाद

Hindi

多謝

Traditional Chinese

ขอบคุณ

Thai

Спасибо

Russian

Gracias

Spanish

Thank You

English

شكراً

Arabic

Obrigado

Brazilian Portuguese

多谢

Simplified Chinese

Danke

German

Bedankt

Dutch

Grazie

Italian

Merci

French

நன்றி

Tamil

ありがとうございました

Japanese

감사합니다

Korean