Session 09942: DFSMSrmm: What’s new in z/OS V1.13 and z/OS V1.12
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- DFSMSrmm
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- TotalStorage
- z/OS
- zEnterprise

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Agenda

- z/OS Release 13 Enhancements
- Selected z/OS Release 12 Enhancements
- Appendix
Agenda

- z/OS Release 13 Enhancements
  - Selective volume movement
  - More “Last change“ details
  - Last Reference Date for VRS
  - ISPF Navigation Enhancements
  - Show Effective Retention/Expiration Date
  - Search Dataset Extensions
  - TVEXTPURGE Extra Days
  - More information on Expiry Date source
  - Exclude data sets from VRSEL
  - New RETENTIONMETHOD(EXPDT)
  - Enhanced Tape Copy Support
RMM Selective Volume Movement

- This new capability is designed for libraries that contain virtual volumes or other volumes which either cannot be moved or for which you do not want DFSMSrmm to initiate the movement.

- With new LOCDEF operand AUTOMOVE(YES/NO), you can define locations that are not applicable for automated movement.

- When current location of a volume is defined with LOCDEF…AUTOMOVE(NO), DSTORE processing will not set the destination from the required location.

- During inventory management DSTORE, DFSMSrmm validates the current location name for a volume and determines if automated movement is required.
  - If validation fails no movement is initiated.
  - If a location is not defined via LOCDEF on the inventory management system automated movement is started.

- All volumes can be manually moved by RMM subcommands.
Volume Movement: Parmlib LOCDEF option AUTOMOVE

```
LOCDEF LOCATION (system_managed_library_name)

AUTOMOVE (YES NO)
```

**YES**
Volume movement will be attempted by DSTORE processing, if the current location does not match the required location.

**NO**
No automatic volume movement will be attempted.
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More „Last change“ details

- Last change information is added to the TSO list command output
- ISPF List-, Change- and Delete- panels for all resources stored in the RMM CDS
- Reduced need for running EDGAUD audit reports.
- If the most recent change was made by DFSMSrmm processing the ID starts with an asterisk (*).
  - *OAM  DFSMSrmm system managed tape support
  - *HKP  Inventory management
  - *OCE  DFSMSrmm OPEN/CLOSE EOV support
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  - Enhanced Tape Copy Support
Last Reference Date for VRS

- After some time the number of Vital Record Specifications in a customer installation may be grown to a number that is hard to comprehend.
  - Especially no longer used VRS' are hard to identify.

- RMM can now
  - display the VRS last reference date in the dialog, and
  - Allow to sorting / search results by last reference date

- You can now cleanup unused VRS' more easily
Last Reference Date for VRS SEARCHVRS

```
SS
| LASTREFDATE(date_range)
| LASTCHANGEDATE(date_range)
```

```
date_range
| START( start_date relative current_date )
| END( end_date relative current_date )
```
RMM ISPF Panel Updates (1)

<table>
<thead>
<tr>
<th>DFSMSrmm Display Data Set VRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command ==&gt;</td>
</tr>
</tbody>
</table>

- **Data set mask**: 'BACKUP.DB2ISA.*'
- **GDG**: NO
- **Job name mask**: :

<table>
<thead>
<tr>
<th>Count ...</th>
<th>35</th>
<th>Retention type ...</th>
<th>DAYS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay ...</td>
<td>0</td>
<td>While cataloged ...</td>
<td>NO</td>
</tr>
<tr>
<td>Days</td>
<td></td>
<td>Until expired ...</td>
<td>NO</td>
</tr>
</tbody>
</table>

- **Location**: HOME
- **Number in location**: 35
- **Priority**: 0
- **Release options**: 
  - **Next VRS in chain**: :
  - **Expiry date ignore**: NO
  - **Chain Using**: :
  - **Scratch immediate**: NO

<table>
<thead>
<tr>
<th>Owner ...</th>
<th>DBUSER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description ... :</td>
<td></td>
</tr>
<tr>
<td><strong>Last reference</strong>: 2011/07/03 16:33:42 ( YYYY/MM/DD  HH:MM:SS )</td>
<td></td>
</tr>
<tr>
<td><strong>Delete date</strong>: 1999/12/31 ( YYYY/MM/DD )</td>
<td></td>
</tr>
</tbody>
</table>

**Last Change information:**
- **Date**: 2011/07/03
- **Time**: 17:04:00
- **System**: IRD6
- **User change date**: 2011/04/04
- **Time**: 07:43:27
- **User ID**: DBUSER
RMM ISPF Panel Updates (2)

DFSMSrmm Search VRSs

Command ==> ________________________________

Optionally specify one of:
Data set mask ________________________________ GDG . . .
Job name mask __________
Volume serial ______ Retention type ______
VRS name . . _______ While cataloged ___ (Yes or blank for all)
Location . . . . _______ Until expired ___ (Yes or blank for all)
Next VRS in chain _______ Release options:
Chain using . . __________ Expiry date ignore ___ (Yes or No)
Owner . . . . . * __________ Scratch immediate ___ (Yes or No)
Limit . . . . ___ 150 __________ Limit search to first n VRSs. Default is *
Dates ______ Start ______ End ______ Date, date range or relative value
Reference . . 2011/01/01 ______
Changed . . -6M ______
Clist . . . . _______ YES to create a data set, or NO, or blank

DFSMSrmm VRSs (Page 4 of 4) Row 1 to 30 of 150

Command ==> ________________________________ Scroll ==> PAGE

Enter HELP or PF1 for the list of available line commands.
Use the LEFT and RIGHT commands to view other data columns.

Store Last
S Volume/Data set/Name specification Count number reference
-- ------------------------------------------ ---- ----
___ BACKUP.DB2ISA.** ____ 35 35 2011/07/03
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  - Enhanced Tape Copy Support
ISPF Navigation Enhancements

- New primary commands CHAINV and CHAIND display multi-volume and multi-file information.

- 16 Point-and-Shoot fields on Volume display, and 5 Point-and-Shoot fields on Data set display allow for more immediate navigation options.

- To control how P&S fields are displayed:
  - Select the Point-and-Shoot... choice from the Colors pull-down, or
  - Issue the ISPF system command PSCOLOR from any ISPF command line

- Subsequent examples use

<table>
<thead>
<tr>
<th>Panel Element</th>
<th>Color</th>
<th>Intensity</th>
<th>Highlight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point-and-Shoot</td>
<td>YELLOW</td>
<td>HIGH</td>
<td>REVERSE</td>
</tr>
</tbody>
</table>

- to highlight P&S fields
## ISPF Navigation – New Primary Commands CHAIND/CHAINV

The CHAIND command shows all data sets of the multi-volume set.

### DFSMSrmm Data Set Details

<table>
<thead>
<tr>
<th>Command</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data set name</strong></td>
<td>'D109123.B10501.SE0003'</td>
</tr>
<tr>
<td><strong>Volume serial</strong></td>
<td>B10501</td>
</tr>
<tr>
<td><strong>Physical file sequence number</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Owner</strong></td>
<td>BSIN</td>
</tr>
<tr>
<td><strong>Data set sequence number</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>Job name</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Step name</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Program name</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Logical record length</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>Create date</strong></td>
<td>2011/07/05</td>
</tr>
<tr>
<td><strong>Create time</strong></td>
<td>16:45:59</td>
</tr>
<tr>
<td><strong>System id</strong></td>
<td>IRD6</td>
</tr>
<tr>
<td><strong>Block count</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>Total block count</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>Data set size (KB)</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>Percent of volume</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>Expiration date</strong></td>
<td>2011/07/15</td>
</tr>
<tr>
<td><strong>Device number</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Set by</strong></td>
<td>CMD_DEF</td>
</tr>
</tbody>
</table>

### DFSMSrmm Data Sets (Page 1 of 2)

<table>
<thead>
<tr>
<th>S</th>
<th>Data set name</th>
<th>Volume serial</th>
<th>Owner</th>
<th>File seq</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>D109123.B10501.SE0001</td>
<td>B10501</td>
<td>BSIN</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>D109123.B10501.SE0002</td>
<td>B10501</td>
<td>BSIN</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>D109123.B10501.SE0003</td>
<td>B10501</td>
<td>BSIN</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>D109123.B10501.SE0004</td>
<td>B10501</td>
<td>BSIN</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>D109123.B10501.SE0005</td>
<td>B10501</td>
<td>BSIN</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>D109123.B10501.SE0006</td>
<td>B10501</td>
<td>BSIN</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>D109123.B10501.SE0007</td>
<td>B10501</td>
<td>BSIN</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>D109123.B10501.SE0008</td>
<td>B10501</td>
<td>BSIN</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>D109123.B10501.SE0009</td>
<td>B10501</td>
<td>BSIN</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>D109123.B10501.SE0010</td>
<td>B10501</td>
<td>BSIN</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>D109123.B10501.SE0011</td>
<td>B10501</td>
<td>BSIN</td>
<td>11</td>
</tr>
</tbody>
</table>

The CHAINV command shows all volumes of the multi-volume set.
ISPF Navigation Point-and-Shoot Fields

- New point-and-shoot fields are available on the
  - volume and
  - data set display panels
Point-and-Shoot in ISPF GUI Client mode

Example of Point-and-Shoot fields on the Display Volume Details panel (GUI mode)
## List of Point-and-Shoot Volume Fields

<table>
<thead>
<tr>
<th>Field</th>
<th>RMM Dialog displays</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOL1 volser</td>
<td>Volume Details for VOL1 volser</td>
</tr>
<tr>
<td>Rack number</td>
<td>Rack Details</td>
</tr>
<tr>
<td>Set retained</td>
<td>Volume search result list for the volume set</td>
</tr>
<tr>
<td>Expiration date</td>
<td>Dialog User Options (date options)</td>
</tr>
<tr>
<td>Availability</td>
<td>Volume search result list for the volume set</td>
</tr>
<tr>
<td>Owner</td>
<td>Owner Details</td>
</tr>
<tr>
<td>Security</td>
<td>Security Classification Rules for the security level</td>
</tr>
<tr>
<td>Last changed by</td>
<td>Owner Details</td>
</tr>
<tr>
<td>Previous volume</td>
<td>Volume Details for previous volser</td>
</tr>
<tr>
<td>Next volume</td>
<td>Volume Details for next volser</td>
</tr>
<tr>
<td>Volume sequence</td>
<td>Volume search result list for the volume set</td>
</tr>
<tr>
<td>Number of data sets</td>
<td>Data set search result list for all data sets on this volume</td>
</tr>
<tr>
<td>Actions pending</td>
<td>Volume Action Status list</td>
</tr>
<tr>
<td>Location</td>
<td>Location Definitions list</td>
</tr>
<tr>
<td>Bin number</td>
<td>Bin Details</td>
</tr>
<tr>
<td>Product info</td>
<td>Product Details</td>
</tr>
</tbody>
</table>
## Usage & Invocation – List of Point-and-Shoot Data Set Fields

<table>
<thead>
<tr>
<th>Field</th>
<th>RMM Dialog displays</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume serial</td>
<td>Volume Details for volser</td>
</tr>
<tr>
<td>Owner</td>
<td>Owner Details</td>
</tr>
<tr>
<td>Physical file sequence nbr</td>
<td>Data set search result list for all data sets on this volume</td>
</tr>
<tr>
<td>Data set sequence number</td>
<td>Data set search result list for all data sets in the volume set</td>
</tr>
<tr>
<td>Create date</td>
<td>Dialog User Options (Date options)</td>
</tr>
</tbody>
</table>
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Show Effective Retention/Expiration Date

- If a resource is retained by VRS, the results list for volumes or data sets might show retained resources with an expiration date that is already passed.

- RMM will now display the retention date instead of the expiration date in the
  
  - volume search results list
  
  - data set result list
    
  if the volume or data set is VRS retained.

- You can now more easily determine from the search results list why a volume is retained, without viewing the volume and data set details.
Show Effective Retention/Expiration Date

- The Search Volume and Search Dataset dialog results list will show the retention date, when a resource is VRS retained.

- The Search Dataset TSO subcommand will return the REXX variables EDG@RTDT and EDG@RTDJ in any case

- The ‘Search Dataset‘ command issued via API will return the RTDJ SFI (X’88C000’), like it was returned by the ‘Search Dataset Extended‘ command before already
Show Effective Retention/Expiration Date Data Set Search Results Panel

**Panel Help Scroll**

<table>
<thead>
<tr>
<th>S Data set name</th>
<th>Create date</th>
<th>Expiration V</th>
<th>Retn. date</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMMUSER.D10000</td>
<td>10/04/2010</td>
<td>15/04/2010</td>
<td>Y</td>
</tr>
<tr>
<td>RMMUSER.D20000</td>
<td>10/04/2010</td>
<td>15/04/2010</td>
<td></td>
</tr>
<tr>
<td>RMMUSER.D30000</td>
<td>10/04/2010</td>
<td>15/04/2010</td>
<td>Y</td>
</tr>
<tr>
<td>RMMUSER.D40000</td>
<td>10/04/2010</td>
<td>15/04/2010</td>
<td></td>
</tr>
</tbody>
</table>

**Panel Help Scroll**

<table>
<thead>
<tr>
<th>S Data set name</th>
<th>Create date</th>
<th>Expir./ V</th>
<th>Retn. date</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMMUSER.D10000</td>
<td>10/04/2010</td>
<td>11/04/2010</td>
<td>Y</td>
</tr>
<tr>
<td>RMMUSER.D20000</td>
<td>10/04/2010</td>
<td>15/04/2010</td>
<td></td>
</tr>
<tr>
<td>RMMUSER.D30000</td>
<td>10/04/2010</td>
<td>PERMANENT</td>
<td>Y</td>
</tr>
<tr>
<td>RMMUSER.D40000</td>
<td>10/04/2010</td>
<td>15/04/2010</td>
<td></td>
</tr>
</tbody>
</table>
Show Effective Retention/Expiration Date Volume Search Results Panel

**Panel Help Scroll**

<table>
<thead>
<tr>
<th>Volume</th>
<th>Assigned Owner</th>
<th>Expiration Date</th>
<th>R Status</th>
<th>Location</th>
<th>Destination</th>
<th>Tr-Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>V10000</td>
<td>RMMUSER</td>
<td>2010/100</td>
<td>2010/105</td>
<td>MASTER</td>
<td>SHELF</td>
<td>N 0</td>
</tr>
<tr>
<td>V10001</td>
<td>RMMUSER</td>
<td>2010/100</td>
<td>2010/105</td>
<td>VRS</td>
<td>SHELF</td>
<td>N 4</td>
</tr>
</tbody>
</table>

---

**Panel Help Scroll**

<table>
<thead>
<tr>
<th>Volume</th>
<th>Assigned Owner</th>
<th>Expiration Date</th>
<th>R Status</th>
<th>Location</th>
<th>Destination</th>
<th>Tr-Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>V10000</td>
<td>RMMUSER</td>
<td>2010/100</td>
<td>2010/105</td>
<td>MASTER</td>
<td>SHELF</td>
<td>N 0</td>
</tr>
<tr>
<td>V10001</td>
<td>RMMUSER</td>
<td>2010/100</td>
<td>PERMANENT</td>
<td>VRS</td>
<td>SHELF</td>
<td>N 4</td>
</tr>
</tbody>
</table>

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Search Dataset Extensions

- Previously, the SEARCHDATASET subcommand had limited ability for searching on attributes of data sets.

- RMM does now allow to search on more search criteria
  - including many on specific date ranges.

- You can now search more efficiently in a large number of data sets.
Options listed in red were added:
SEARCHDATASET Syntax (2/2)

```
SD
  |   FORCE (YES NO)
  |   CATLG (CATALOG YES NO UNKNOWN)
  |   NODATACLASS
  |   DATACLASS (dataclass_name)
  |   NOSTORAGECLASS
  |   STORAGECLASS (storageclass_name)
  |   NOMANAGEMENTCLASS
  |   MANAGEMENTCLASS (managementclass_name)
  |   NOSTORAGEGROUP
  |   STORAGEGROUP (storagegroup_name)
```
Search Dataset Extensions Examples

- List all data sets that were last read or written a month ago or newer:
  - `SD LASTREFDATE(START(-1M)) OWNER(*) LIMIT(*)`

- List all data sets, of which the last CDS change is 1 year ago or longer and that have no original expiration date set:
  - `SD LASTCHANGEDATE(START(1900/001) END(-1Y)) + NOOEXPDT OWNER(*) LIMIT(*)`

- List all data sets that are retained forever and cataloged:
  - `SD RETDATE(PERMANENT) CATLG(YES) OWNER(*) LIMIT(*)`

- List all data sets, defined with data class “DC000001”, but no storage class:
  - `SD DATACLASS(DC000001) NOSTORAGECLASS OWNER(*) LIMIT(*)`
### DFSMSrmm Data Set Search

Enter fully qualified or partial data set name and job name:

<table>
<thead>
<tr>
<th>Data set name</th>
<th>Job name</th>
<th>Specific or generic name</th>
</tr>
</thead>
</table>

Enter optional parameters to qualify search:

<table>
<thead>
<tr>
<th>Owner</th>
<th>Owner of volumes (Default is your userid)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume serial</td>
<td>YES, For all data sets in the multi-volume set, otherwise NO</td>
</tr>
<tr>
<td>List entire set</td>
<td>YES, NO, or blank for all</td>
</tr>
<tr>
<td>Status</td>
<td>PRIVATE, SCRATCH, or blank for all</td>
</tr>
<tr>
<td>Retained by VRS</td>
<td>YES, NO, or blank for all</td>
</tr>
<tr>
<td>Excluded from VRSSEL</td>
<td>YES, NO, or blank for all</td>
</tr>
</tbody>
</table>

Dates, Start, End, Date, date range or relative value:

<table>
<thead>
<tr>
<th>Create</th>
<th>Relative position on the volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expiration</td>
<td>Limit search to first nnnn data sets</td>
</tr>
<tr>
<td>Reference</td>
<td>YES to create a data set, or NO, or blank</td>
</tr>
<tr>
<td>Read</td>
<td>Specific or generic name</td>
</tr>
<tr>
<td>Write</td>
<td>YES, NO, or blank for all</td>
</tr>
<tr>
<td>Changed</td>
<td>YES, NO, or blank for all</td>
</tr>
<tr>
<td>Physical file seq</td>
<td>Limit search to first nnnn data sets</td>
</tr>
<tr>
<td>Limit</td>
<td>YES to create a data set, or NO, or blank</td>
</tr>
<tr>
<td>Clist</td>
<td>Specific or generic name</td>
</tr>
<tr>
<td>Program name</td>
<td>YES, NO, or blank for all</td>
</tr>
<tr>
<td>Closed by Abend</td>
<td>YES, NO, or blank for all</td>
</tr>
<tr>
<td>Deleted</td>
<td>YES, NO, or blank for all</td>
</tr>
<tr>
<td>BES key index</td>
<td>CA BTE tape encryption key index</td>
</tr>
<tr>
<td>Original EKPD</td>
<td>YES, NO, or a specific date YYYY/MM/DD</td>
</tr>
<tr>
<td>Retention</td>
<td>Data set retained up to YYYY/MM/DD</td>
</tr>
<tr>
<td>Cataloged</td>
<td>YES, NO or UNKNOWN</td>
</tr>
<tr>
<td>Force</td>
<td>Data sets used with FORCE (YES or NO)</td>
</tr>
<tr>
<td>Data class</td>
<td>Data class name or NO</td>
</tr>
<tr>
<td>Storage class</td>
<td>Storage class name or NO</td>
</tr>
<tr>
<td>Management class</td>
<td>Management class name or NO</td>
</tr>
<tr>
<td>Storage group</td>
<td>Storage group name or NO</td>
</tr>
</tbody>
</table>

Also the ISPF panel for SEARCHDATA SET has been enhanced for the new search criteria.
Agenda

- z/OS Release 13 Enhancements
  - Selective volume movement
  - More „Last change“ details
  - Last Reference Date for VRS
  - ISPF Navigation Enhancements
  - Show Effective Retention/Expiration Date
  - Search Dataset Extensions
  - TVEXTPURGE Extra Days
  - More information on Expiry Date source
  - Exclude data sets from VRSEL
  - New RETENTIONMETHOD(EXPDT)
  - Enhanced Tape Copy Support
TVEXTPURGE Extra Days

- If DFSMSHsm tapes are expired by the EDGTVEXT HSM exit, extra days for retention can only be defined with an EXTRADAYS VRS.

- With the new parmlib option
  TVEXTPURGE(EXPIRE(days))
a number of extra days can be defined globally with no additional VRS definition.

>-------+-------------------+--------+
   |         .-RELEASE-          |       |
   | 'TVEXTPURGE(-+-------------------+-)+' |
   |   +-NONE-+-             |       |
   |         .---0---.      |       |
   | 'EXPIRE(-+-days+-)+'   |       |
Agenda

- z/OS Release 13 Enhancements
  - Selective volume movement
  - More „Last change“ details
  - Last Reference Date for VRS
  - ISPF Navigation Enhancements
  - Show Effective Retention/Expiration Date
  - Search Dataset Extensions
  - TVEXTPURGE Extra Days
  - More information on Expiry Date source
  - Exclude data sets from VRSEL
  - New RETENTIONMETHOD(EXPDT)
  - Enhanced Tape Copy Support
More information on Expiry Date source

- Just by looking at the expiration date of the volume or data set it may be hard to understand how it was set:
  - Does it stem from OCE or from VOLCAT, during conversion or export, or did RMM set or change it due to parmlib OPTIONS?

- DFSMSrmm now records details of what event caused the EXPDT to be set or changed.

- You can now easily determine what caused the expiration date to be set or changed.

```
Command ==>  

DFSMSrmm Data Set Details

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data set name</td>
<td>'SAMPLE3.B10001.SEQ002'</td>
</tr>
<tr>
<td>Volume serial</td>
<td>B10001</td>
</tr>
<tr>
<td>Physical file sequence number</td>
<td>2</td>
</tr>
<tr>
<td>Owner</td>
<td>BSIN</td>
</tr>
<tr>
<td>Data set sequence number</td>
<td>0</td>
</tr>
<tr>
<td>Job name</td>
<td></td>
</tr>
<tr>
<td>Step name</td>
<td></td>
</tr>
<tr>
<td>Program name</td>
<td></td>
</tr>
<tr>
<td>DD name</td>
<td></td>
</tr>
<tr>
<td>Create date</td>
<td>2011/07/05</td>
</tr>
<tr>
<td>Create time</td>
<td>16:39:56</td>
</tr>
<tr>
<td>System id</td>
<td>IRDG</td>
</tr>
<tr>
<td>Expiration date</td>
<td>2011/07/15</td>
</tr>
<tr>
<td>Set by</td>
<td>CMD_DEF</td>
</tr>
</tbody>
</table>
```

Device number:     

Record format:     

Logical record length:  

Block size:  

Block count:  

Total block count:  

Data set size (KB):  

Percent of volume:  

More: *
## More information on Expiry Date source

The **Set by** field displays the event that caused the expiration date to be set or changed:

<table>
<thead>
<tr>
<th>Set by</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>blank</td>
<td>Not set</td>
</tr>
<tr>
<td>CMD</td>
<td>Set by TSO subcommand</td>
</tr>
<tr>
<td>CMD_DEF</td>
<td>Default RETPD applied during subcommand processing</td>
</tr>
<tr>
<td>CMD_VOLCAT</td>
<td>EXPDT obtained from VOLCAT during subcommand processing</td>
</tr>
<tr>
<td>OCE_JFCB</td>
<td>EXPDT obtained from EXPDT/RETPD keywords or from dataclass applied during tape recording</td>
</tr>
<tr>
<td>OCE_EXIT</td>
<td>EDG_EXIT100 updated the JFCB EXPDT during tape recording</td>
</tr>
<tr>
<td>OCE_DEF</td>
<td>Default RETPD applied during tape recording</td>
</tr>
<tr>
<td>OCE_MAX</td>
<td>MAXRETPD was used to reduce the requested EXPDT during tape recording</td>
</tr>
<tr>
<td>OCE_VOLCAT</td>
<td>EXPDT obtained from VOLCAT during tape recording</td>
</tr>
<tr>
<td>LCS</td>
<td>EXPDT obtained from VOLCAT for system managed tapes when called from OAM installation exits</td>
</tr>
<tr>
<td>LCS_DEF</td>
<td>Default RETPD applied for system managed tapes when called from OAM installation exits</td>
</tr>
<tr>
<td>TVEXTPURGE</td>
<td>Set as a result of TVEXTPURGE parmlib option</td>
</tr>
<tr>
<td>CNVT</td>
<td>Set during conversion by EDGCNVT</td>
</tr>
<tr>
<td>EXPORT</td>
<td>Set during export processing</td>
</tr>
</tbody>
</table>
EDGRDEXT – Data set name record

... RDTOTAL_BLCNT DS OCL20 Total block count across all vol...
... RDES B DS CL10 Expdt set by
RDU CDATE DS CL10 Last "user" change date of data set record

EDGRVEXT – Volume record

... RVHOLD DS C VOLUME HOLD - Y/N
RVES B DS CL10 Expdt set by
RVUCDATE DS CL10 LAST "USER" CHANGE DATE
RVUCTI ME DS CL6 LAST "USER" CHANGE TIME (HHMMSS)

EDGRXEXT – Extended extract record

... XVHOLD DS C VOLUME HOLD - Y/N
XVES B DS CL10 Expdt set by - of the volume
XDES B DS CL10 Expdt set by - of the data set
XVUCDATE DS CL10 VOLUME LAST "USER" CHANGE DATE
XVUCTIME DS CL6 VOLUME LAST "USER" CHANGE TIME
Agenda

- z/OS Release 13 Enhancements
  - Selective volume movement
  - More „Last change“ details
  - Last Reference Date for VRS
  - ISPF Navigation Enhancements
  - Show Effective Retention/Expiration Date
  - Search Dataset Extensions
  - TVEXTPURGE Extra Days
  - More information on Expiry Date source
  - **Exclude data sets from VRSEL**
  - **New RETENTIONMETHOD(EXPDT)**
  - Enhanced Tape Copy Support
Exclude data sets from VRSEL and RETENTIONMETHOD(EXPDT)

- Previously data in the RMM inventory were managed by dynamic VRS policies. With every housekeeping run the retention for a volume or a data set can change.

- While VRS' are extremely powerful constructs not all data may require that dynamic management
Exclude data sets from VRSEL and RETENTIONMETHOD(EXPDT)

- It is now possible to
  - exclude certain data from VRSEL, or to
  - assign a retention method at the time a tape data set is created.
    - This provides you with a choice of whether data is managed by expiration date or by VRS policies.
- With these capabilities you can
  - reduce VRSEL runtime by eliminating certain types of data from VRSEL processing
  - Effectively achieve Controlling Data set Support When a volume or volume set is VRS retained, and you exclude one or more of the data sets from VRSEL, you can have the volume managed just by those data sets not excluded from VRSEL.
  - Work with simpler retention policies and avoid or reduce batch VRS policy management.
  - The retention information for expiration date retained data can be known when a tape data set is created.

- Note: z/OS releases lower than V1R13 require the PTF for coexistence APAR OA32984 to be installed before exploiting these new functions on V1R13.
Exclude data sets from VRSEL:
RMM CHANGEDATASET and SEARCHDATASET Commands

If VRSELEXCLUDE is changed from NO to YES then:
- the “VRS retained” flag is reset and
- the retention date is set to the current date

For multivolume data sets set VX or evry data set record
Exclude data sets from VRSEL: ISPF Panel Updates

**DFSMSrmm Data Set Details**

- **Data set name**: SAMPLE3.B1G001.SEQ002
- **Volume serial**: B1G001
- **Owner**: BSIN
- **Job name**: 
- **Step name**: 
- **Program name**: 
- **DD name**: 
- **Create date**: 2011/07/05
- **Create time**: 16:39:56
- **System id**: IRRD6
- **Expiration date**: 2011/07/15
- **Set by**: CMD_DEF
- **Original**: YY

**DFSMSrmm Data Set Search**

- **VRSEL exclude**: YES
- **Retention date**: 
- **VRS retained**: NO

Enter fully qualified or partial data set name and job name:

**Data set name**: *

**Job name**: **Specific or generic name**

Enter optional parameters to quality search

- **Owner**: 
- **Volume serial**: BSIN
- **List entire set**: YES
- **Status**: PRIVATE, SCRATCH, or blank for all
- **Retained by VRS**: YES
- **Excluded from VRSEL**: YES
- **Dates**: Start, End
- **Create**: 
- **Expiration**: 
- **Reference**: 
- **Read**: 
- **Write**: 
- **Changed**: 

More: +
Exclude data sets from VRSEL: ISPF Panel Updates Change Data Set

```
EDGPD310 DFSMSrmm Change Data Set Details
Command ==>  

Data set name . . . : 'SAMPLE3.B10001.SEQ001'
Volume serial . . . : B10001    Physical file sequence number . . . : 1
Owner . . . . . . . : DSIN    Data set sequence number . . . . . . : 0

Job name . . . . . . . . : 
Step name . . . . . . . . : 
Program name . . . . . . . : 
DD name . . . . . . . . . : 
Create date . . . . . . . . : 2011/07/05 YYYY/MM/DD
Create time . . . . . . . . : 16:39:56
System id . . . . . . . . : IRD6

Last job name . . . . : 
Last step name . . . : 
Last program name : 
Date last read . . . . . : 
Date last written . . . : 

VRSEL exclude . . . : YES
Retention date . . . : 
VRS retained . . . : NO

More:  +
```
Exclude data sets from VRSEL: Installation Exits Overview

DFSMSrmm
- Allocation & Open Processing
- Return to Scratch
- Media Information during Open

Dynamic Exit Services
- EDG_EXIT100
- EDG_EXIT200
- EDG_EXIT300

Exit Modules
- EDGUX100
- EDGUX200
- EDGUX300
Exclude data sets from VRSEL: Exit Support VRSELEXCLUDE

- A new EDG_EXIT100 option is provided to request overriding DFSMSrmm VRSEL processing for specific data sets as they are created or re-written.

- The data set VRSELEXCLUDE attribute is set for all data sets on volumes managed by the EXPDT retention method, and is not affected by this support. If a data set is already retained as a vital record, the vital record attribute is reset and the retention date set to the current date.

- Copy the sample EDGUX100 exit module and use the copy as a base for your exit module.
  - Only perform your processing if the PL100_CAN_VRSELEXCLUDE bit is on.
  - Set PL100_SET_VRSELEXCLUDE bit to B'1' for data sets. If you do not request VRSELEXCLUDE the default for the retention method will be used.
    
    If the installation exit sets PL100_SET_VRSELEXCLUDE then any VRS management value set in PL100_VRS is ignored.

    - You do not need to set the PL100_SET_VRSELEXCLUDE bit when you also request to set the retention method to EXPDT: DFSMSrmm always sets the VRSELEXCLUDE attribute for data sets managed by the EXPDT retention method.

- Make any other changes required such as setting the retention method when creating the first file on the tape, or clearing the EXPDT.
Exclude data sets from VRSEL: EDG_EXIT100 Sample VX Table

The sample EDGUX100 exit module includes an example of setting the VRSELEXCLUDE attribute.

- The order in which the table entries are listed is important because the exit scans the table until it finds the first entry where the job name, data set name and program name masks match the current request. You can change the priority of matching by changing the order of the table entries.

```
VXTAB    DS    0F                  START OF VRSELEXCLUDE TABLE
SPACE 1
DC    CL8'**'              JOBNAME
DC    CL44'RMMUSER.VX.*'  DATA SET NAME
DC    CL8'**'              PROGRAM NAME
SPACE 1
DC    CL8'VX END'         END OF VX TABLE MARKER
```
Migration & Coexistence

- There are no migration concerns introduced by this support.

- Standard coexistence recognizes and supports:
  - Data set level VRSELEXCLUDEVRSEL processing on releases below z/OS V1.01 skips these data sets
Agenda

- z/OS Release 13 Enhancements
  - Selective volume movement
  - More „Last change“ details
  - Last Reference Date for VRS
  - ISPF Navigation Enhancements
  - Show Effective Retention/Expiration Date
  - Search Dataset Extensions
  - TVEXTPURGE Extra Days
  - More information on Expiry Date source
  - Exclude data sets from VRSEL
  - New RETENTIONMETHOD(EXPD)
  - Enhanced Tape Copy Support
A new parmlib options RETENTIONMETHOD(EXPDT) allows to set the system-wide default retention method for new tape volume sets created during OCE processing, and for tape volumes added to the DFSMSrmm CDS.

OPTION Command: RETENTIONMETHOD

```
>---+------------------------------------------+-->
|                     .-VRSEL--------.   | '---
'|---RETENTIONMETHOD---(------------------------+)---'
| '-RM-----------------'   '-EXPDT--------'
```
What's new in z/OS DFSMSrmm V1.13

RETENTIONMETHOD(RETENTIONMETHOD): RMM Parmlib Option (2)

- **VRSEL**
  - Specify VRSEL to set the default retention method for new tape volume sets to be VRSEL. This option enables DFSMSrmm inventory management to attempt to match data sets and volumes to VRSes, and if a match is found, to determine if the data set or volumes is to be retained by VRS.
  - The VRSEL retention method is controlled by all the other VRS related options in parmlib including OPTION RETAINBY MOVEBY.

- **EXPDT**
  - Specify EXPDT to set the default retention method for new tape volume sets to be based on EXPDT. Data sets and volumes managed by this retention method are never processed by VRSEL inventory management.
  - The EXPDT retention method manages at the volume level: each volume is considered separately for expiration, and each file on a volume can increment the volume expiration date.
  - All files of a multi volume data set on a volume set managed by the EXPDT retention method have the same expiration date and time.
  - When you specify the EXPDT retention method the DFSMSrmm inventory management EXPROC processing always attempts to return volumes to scratch on the same run as the volume is released (Note: this is as if the SCRATCHIMMEDIATE attribute is set for the volume).

- Default: RETENTIONMETHOD(VRSEL)

- Use parmlib RETENTIONMETHOD(EXPDT) only once you want to switch the default retention method to EXPDT.
RM(EXPDT): ADDVOLUME subcommand

Use this operand to set the retention method for a tape volume set. Specify this operand for the first volume in a multi-volume sequence. All other volumes added to the set assume the same retention method.

Specify **VRSEL** to set the retention method for a tape volume set to be VRSEL. This option enables DFSMSrmm inventory management to attempt to match data sets and volumes to VRSes, and if a match is found, to determine if the data set or volumes are to retained by VRS.

Specify **EXPDT** to set the retention method for a tape volume set to be based on EXPDT. Data sets and volumes managed by this retention method are never processed by VRSEL inventory management.

Default: RETENTIONMETHOD as specified or defaulted to in parmlib.
RM(EXPDT): CHANGEVOLUME subcommand

```
>---CV---+------------------------------------------+-->
 |                   .VRSEL-------.   | '---
'---RETENTIONMETHOD---(+-------------------+-)---'
'---RM-----------------'   '---EXPDT--------'
```

**RETENTIONMETHOD|RM(VRSEL|EXPDT)**

- Use this operand for any volume to set the retention method for a tape volume set. Specify this operand only for the first volume in a volume set. All other volumes in the set assume the same retention method.

- Specify **VRSEL** to set the retention method for a tape volume set to be VRSEL. This option enables DFSMSrmm inventory management to attempt to match data sets and volumes to VRSes, and if a match is found, to determine if the data set or volumes are to retained by VRS.

- Specify **EXPDT** to set the retention method for a tape volume set to be based on EXPDT. Data sets and volumes managed by this retention method are never processed by VRSEL inventory management.

- **RETENTIONMETHOD** is mutually exclusive with PREVVOL and NOPREVVOL operands.
RM(EXPDT): SEARCHVOLUME subcommand

Use this operand to restrict the returned volumes based on the retention method.

- Specify VRSEL to select volumes with the VRSEL retention method.
- Specify EXPDT to select volumes with the EXPDT retention method.
## RM(EXPDT): LISTCONTROL OPTION Output

```
EDGPC200 RMM System Options Display
Command ==> R

Parmlib suffix : 02
Operating mode : PROTECT

Data sets:
  Control . . . : BRMM.MASTER.CDS
  Journal . . . : BRMM.MASTER.JOURNAL
  CDS id . . . . : I
  Catalog SYSSID : N

Data set default:
  Journal threshold . : 50 %
  Journal transaction : NO

SMF:
  System id . . . . : IRD6
  Audit . . . . . . : 248
  Security . . . . : 249

Retention method : VRSEL
Retention period:
  Default . . . : 10
  Maximum . . . : NOLIMIT
  Catalog . . . .: 12 hours

Report options:
  Lines per page . . : 54
  Date format . . . : JULIAN
```

RM(VRSEL) remains the default.
RM(EXPDT): EDG_EXIT100 Retention Method Support

- You can use the EDG_EXIT100 installation exit to set the retention method to be used for new tape data. When you create a new tape volume set, or rewrite an existing set from the first file you can override the system default retention method.

```
ENT1ST DS 0F
* start of RDS entries
   EDGCVRSG DSN=RMMUSER.RMEXPDT.*,                    X
      RM=EXPDT,                                         X
      RO=NO,                                           X
      RETPD=5                                           
   EDGCVRSG DSN=*,                                     X
      RM=NONE,                                         X
      RO=NO,                                           X
      RETPD=5                                           
* start of keyword dates from EDGC5LDR
   EDGCVRSG KEYDATE=98010,                             X
      VRVAL=D98010                                      
   EDGCVRSG KEYDATE=99000,                             X
      VRVAL=D99000                                      
   EDGCVRSG KEYDATE=99010,                             X
      VRVAL=D99010                                      
   EDGCVRSG KEYDATE=99110,                             X
      VRVAL=D99110                                      
   EDGCVRSG KEYDATE=99201,                             X
      VRVAL=D99201                                      
ENTLAST EDGCVRSG DSN='*', RO='NO'
```
RM(EXPDT): Expiry Date Equalization

- RMM maintains a consistent data set expiration date and time for data sets on EXPDT-managed volumes at these times:

  - During O/C/EOV processing.
    The expiration time is rounded up to the next whole hour.
    - Minimize I/O to the RMM CDS.
    - This is done for the first data set record of a data set, and only incremented again when data set creation continues onto a new volume and current time exceeds the rounded value.
    - The ASSIGN time remains unchanged

  - When you specify EXPDT/RETPD on ADDDATASET or CHANGEDATASET subcommands.

  - During CHANGEVOLUME PREVVOL

  - When the retention method of the volume set is changed from VRSEL to EXPDT
■ **VRSEL retention method**
  – Data sets on volumes managed by the VRSEL retention method are unchanged.

■ **EXPDT retention method**
  – All files of a multi volume data set on a volume set managed by RM(EXPDT) have the same expiration date and time.

![Diagram of data set expiration dates and times]

<table>
<thead>
<tr>
<th>Dsn1</th>
<th>Dsn2</th>
<th>Dsn2</th>
<th>Dsn3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exp.time=07.00.00.0</td>
<td>Exp.time=09.00.00.0</td>
<td>Exp.time=09.00.00.0</td>
<td>Exp.time=10/05/2011</td>
</tr>
<tr>
<td>Exp.time=16.00.00.0</td>
<td>Exp.time=09.00.00.0</td>
<td>Exp.time=09.00.00.0</td>
<td>Exp.time=16.00.00.0</td>
</tr>
</tbody>
</table>
RM(EXPDT): Retention Method Considerations

- You **do not need** to run VRSEL processing unless any volumes are defined with the VRSEL retention method.
  - Only **EXPROC processing is required** to handle expiration of all volumes managed by the EXPDT retention method.

- EXPROC processing provides a summary of volumes by retention method. See the MESSAGE file example below.

- The expiration date of volumes is set during OPEN processing, so for volumes managed by the EXPDT retention method no special considerations exist for open data sets – they are managed based on the volume EXPDT.

- EXPROC processing currently remains to be date-sensitive only (i.e., not time sensitive)

- Volumes containing data sets closed by ABEND processing or which are DELETED are handled as if no special ABEND/DELETED VRS had been defined. i.e. All retention is based only on the volume EXPDT.

- Volumes managed by the EXPDT retention method are included only in the EXPDTRDROP limit. VRSRETAIIN and VRSDROP limits apply only to volumes managed by VRSEL retention method.

<table>
<thead>
<tr>
<th>Return Code</th>
<th>Reason Code</th>
<th>Message Number</th>
<th>Issuing Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>266</td>
<td>3363</td>
<td>CV, AV</td>
<td>Retention method can only be specified for the first volume in a set</td>
</tr>
</tbody>
</table>
## RM(EXPDT): Authorization

<table>
<thead>
<tr>
<th>Define the resource</th>
<th>To Control the</th>
</tr>
</thead>
<tbody>
<tr>
<td>STGADMIN.EDG.CV.RM&lt;sub&gt;minlength&lt;/sub&gt;</td>
<td>Updating of retention method. SupportingCV RETENTIONMETHOD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>When you Define</th>
<th>With Access</th>
<th>Then</th>
</tr>
</thead>
<tbody>
<tr>
<td>STGADMIN.EDG.CV.RM&lt;sub&gt;minlength&lt;/sub&gt;</td>
<td>Entity not defined</td>
<td>Based on STGADMIN.EDG.MASTER access.</td>
</tr>
<tr>
<td></td>
<td>UPDATE</td>
<td>Allows any volume to be updated</td>
</tr>
</tbody>
</table>

*UPDATE Based on STGADMIN.EDG.MASTER access.*
## RM(EXPDT): New EDGJRPT/EDGRRPTE Report 18

### Inventory of Data Set Names by Volume Retention Method EXPDT

<table>
<thead>
<tr>
<th>Data Set Name</th>
<th>Volume</th>
<th>Vol-</th>
<th>DSN-</th>
<th>Creating</th>
<th>Create</th>
<th>Create Volume</th>
<th>DSN</th>
<th>V</th>
<th>EXPDT Set by</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMMUSER.D16002</td>
<td>A16002</td>
<td>1</td>
<td>1</td>
<td>2010/123</td>
<td>081146</td>
<td>2010/133</td>
<td>Y</td>
<td></td>
<td>CMD_DEF</td>
</tr>
<tr>
<td>RMMUSER.D16003</td>
<td>A16003</td>
<td>2</td>
<td>1</td>
<td>2010/129</td>
<td>081147</td>
<td>2010/135</td>
<td>Y</td>
<td></td>
<td>CMD</td>
</tr>
<tr>
<td>RMMUSER.D16004.DS1</td>
<td>A16004</td>
<td>3</td>
<td>1</td>
<td>BERNDS</td>
<td>2010/129</td>
<td>081147</td>
<td>2010/134</td>
<td>Y</td>
<td>CMD</td>
</tr>
<tr>
<td>RMMUSER.D16004.DS2</td>
<td>A16004</td>
<td>3</td>
<td>2</td>
<td>BERNDS</td>
<td>2010/129</td>
<td>081147</td>
<td>2010/111</td>
<td>Y</td>
<td>CMD</td>
</tr>
</tbody>
</table>

End of Report. 4 Entries listed

### Inventory of Data Set Names by Volume Retention Method VRSEL

<table>
<thead>
<tr>
<th>Data Set Name</th>
<th>Volume</th>
<th>Vol-</th>
<th>DSN-</th>
<th>Creating</th>
<th>Create</th>
<th>Create Volume</th>
<th>DSN</th>
<th>V</th>
<th>Exp Date</th>
<th>Exp Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>BERNDS.DATASET</td>
<td>A16007</td>
<td>1</td>
<td>1</td>
<td>2010/123</td>
<td>081146</td>
<td>2010/240</td>
<td>N</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BERNDS.DATASET</td>
<td>A16006</td>
<td>1</td>
<td>1</td>
<td>2010/129</td>
<td>081147</td>
<td>2010/250</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BERNDS.DATASET</td>
<td>A16006</td>
<td>1</td>
<td>2</td>
<td>2010/129</td>
<td>081150</td>
<td>2010/240</td>
<td>N</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RMMUSER.D16001.A</td>
<td>A16001</td>
<td>1</td>
<td>1</td>
<td>TEST</td>
<td>2010/123</td>
<td>081146</td>
<td>PERMANENT</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>RMMUSER.D16001.B</td>
<td>A16001</td>
<td>1</td>
<td>2</td>
<td>TEST</td>
<td>2010/123</td>
<td>081146</td>
<td>PERMANENT</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>RMMUSER.D16001.C</td>
<td>A16001</td>
<td>1</td>
<td>3</td>
<td>TEST</td>
<td>2010/123</td>
<td>081146</td>
<td>PERMANENT</td>
<td>N</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>RMMUSER.D16005</td>
<td>A16005</td>
<td>1</td>
<td>1</td>
<td>2010/129</td>
<td>081147</td>
<td></td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

End of Report. 7 Entries listed
### RM(EXPDT): New EDGJRPT/EDGRRPTE Report 18

**DFSMSrmm**

**DATE**  
2010/129

**Inventory of Data Set Names by Volume Retention Method EXPDT**

<table>
<thead>
<tr>
<th>Data Set Name</th>
<th>Volume</th>
<th>Vol-</th>
<th>DSN-</th>
<th>Creating</th>
<th>Create</th>
<th>Create Volume</th>
<th>DSN</th>
<th>V</th>
<th>EXPDT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Serial</td>
<td>Seq.</td>
<td>Seq.</td>
<td>Jobname</td>
<td>Date</td>
<td>Time</td>
<td>Exp. Date</td>
<td>Exp. Date</td>
<td>X</td>
</tr>
<tr>
<td>RMMUSER.D16002</td>
<td>A16002</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2010/123</td>
<td>081146</td>
<td>2010/133</td>
<td>2010/128</td>
<td>Y</td>
</tr>
<tr>
<td>RMMUSER.D16003</td>
<td>A16003</td>
<td>2</td>
<td>1</td>
<td></td>
<td>2010/129</td>
<td>081147</td>
<td>2010/135</td>
<td>2010/135</td>
<td>Y</td>
</tr>
<tr>
<td>RMMUSER.D16004.DS1</td>
<td>A16004</td>
<td>3</td>
<td>1</td>
<td>BERNDS</td>
<td>2010/129</td>
<td>081147</td>
<td>2010/134</td>
<td>2010/099</td>
<td>Y</td>
</tr>
<tr>
<td>RMMUSER.D16004.DS2</td>
<td>A16004</td>
<td>3</td>
<td>2</td>
<td>BERNDS</td>
<td>2010/129</td>
<td>081147</td>
<td>2010/134</td>
<td>2010/111</td>
<td>Y</td>
</tr>
</tbody>
</table>

End of Report. 4 Entries listed

**DFSMSrmm INTERNAL USE ONLY**

**DATE**  
2010/129

**Inventory of Data Set Names by Volume Retention Method VRSEL**

<table>
<thead>
<tr>
<th>Data Set Name</th>
<th>Volume</th>
<th>Vol-</th>
<th>DSN-</th>
<th>Creating</th>
<th>Create</th>
<th>Create Volume</th>
<th>DSN</th>
<th>V</th>
<th>VRSEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Serial</td>
<td>Seq.</td>
<td>Seq.</td>
<td>Jobname</td>
<td>Date</td>
<td>Time</td>
<td>Ret. Date</td>
<td>Ret. Date</td>
<td>X</td>
</tr>
<tr>
<td>BERNDS.DATASET</td>
<td>A16007</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2010/123</td>
<td>081146</td>
<td>2010/240</td>
<td>2010/240</td>
<td>N</td>
</tr>
<tr>
<td>BERNDS.DATASET</td>
<td>A16006</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2010/129</td>
<td>081147</td>
<td>2010/250</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>BERNDS.DATASET</td>
<td>A16006</td>
<td>1</td>
<td>2</td>
<td></td>
<td>2010/129</td>
<td>081150</td>
<td>2010/250</td>
<td>2010/240</td>
<td>N</td>
</tr>
<tr>
<td>RMMUSER.D16001.A</td>
<td>A16001</td>
<td>1</td>
<td>1</td>
<td>TEST</td>
<td>2010/123</td>
<td>081146</td>
<td>PERMANENT</td>
<td>PERMANENT</td>
<td>N</td>
</tr>
<tr>
<td>RMMUSER.D16001.B</td>
<td>A16001</td>
<td>1</td>
<td>2</td>
<td>TEST</td>
<td>2010/123</td>
<td>081146</td>
<td>PERMANENT</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>RMMUSER.D16001.C</td>
<td>A16001</td>
<td>1</td>
<td>3</td>
<td>TEST</td>
<td>2010/123</td>
<td>081146</td>
<td>PERMANENT</td>
<td>PERMANENT</td>
<td>N</td>
</tr>
<tr>
<td>RMMUSER.D16005</td>
<td>A16005</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2010/129</td>
<td>081147</td>
<td></td>
<td></td>
<td>N</td>
</tr>
</tbody>
</table>

End of Report. 7 Entries listed
RM(EXPDT): EDGJACTP Report

■ VRSRETN Report
  – A new data column is added to include the data set VRSEXCLUDE attribute.
  – Note that the VRSRETN and VRSRETNS reports are produced only for volumes that are managed by the VRSEL retention method.

■ EXPDROP Report
  – A new data column is added to include the retention method
What's new in z/OS DFSMSrmm V1.13

**RM(EXPDT): EDGJACTP VRSRTTN Report**

Newly assigned volumes subject to VRSRETAIN 01/20/09 05:55:21 - 1 -

Status: RETAINED

<table>
<thead>
<tr>
<th>DATASET</th>
<th>DATASET</th>
<th>VRS</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOLSER</td>
<td>FSEQ</td>
<td>DSNNAME</td>
<td>JOBNAME</td>
</tr>
<tr>
<td>A22251</td>
<td>1</td>
<td>RMMUSER.DSN1</td>
<td>N</td>
</tr>
<tr>
<td>A22252</td>
<td>1</td>
<td>RMMUSER.DSN20</td>
<td>N</td>
</tr>
<tr>
<td>A22253</td>
<td>1</td>
<td>D046059.DSN01</td>
<td>Y</td>
</tr>
<tr>
<td>A22253</td>
<td>1</td>
<td>DSN02</td>
<td>Y</td>
</tr>
<tr>
<td>A22253</td>
<td>3</td>
<td>D046059.DSN03</td>
<td>N</td>
</tr>
<tr>
<td>VOL001</td>
<td>1</td>
<td>First.data.set</td>
<td>F1J</td>
</tr>
<tr>
<td>VOL001</td>
<td>2</td>
<td>Second.data.set</td>
<td>F1J</td>
</tr>
<tr>
<td>VOL002</td>
<td>1</td>
<td>Second.data.set</td>
<td>F1J</td>
</tr>
<tr>
<td>VOL002</td>
<td>2</td>
<td>third.data.set</td>
<td>F1J</td>
</tr>
</tbody>
</table>

Data sets in this status: 10

Newly assigned volumes subject to VRSRETAIN 01/20/09 05:55:21 - 2 -

Status: NOTRETAINED

<table>
<thead>
<tr>
<th>DATASET</th>
<th>DATASET</th>
<th>VRS</th>
<th>VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOLSER</td>
<td>FSEQ</td>
<td>DSNNAME</td>
<td>JOBNAME</td>
</tr>
<tr>
<td>A22250</td>
<td>1</td>
<td>D046059.WCATALOG</td>
<td>SSEINHA</td>
</tr>
<tr>
<td>A22256</td>
<td>1</td>
<td>DSN6</td>
<td>N</td>
</tr>
<tr>
<td>NO0001</td>
<td>1</td>
<td>ANOTHER.DSET</td>
<td>WOODY1</td>
</tr>
<tr>
<td>NO0001</td>
<td>2</td>
<td>YET.ANOTHER</td>
<td>WOODY2</td>
</tr>
</tbody>
</table>

Data sets in this status: 4
OPTION RM

- Use the OPTION statement to specify the defaults for DFSMSrmm options which affect volume and data set attributes during conversion.

- Supported options:
  
  RM - Specify the **default** retention method. You can override the default retention method at the volume set level by setting the appropriate flags in the ‘L record’. See the EDGCLREC mapping: LVRMVRS, LVRMEXP.

- When you specify the RM option you must select one of the following retention methods:
  
  - **VRSEL**: Specify VRSEL as the default retention method for all volume sets.
  - **EXPDT**: Specify EXPDT to set the default retention method for volume sets to be based on EXPDT. Data sets and volumes managed by this retention method are never processed by VRSEL inventory management.

  - The EXPDT retention method manages at the volume level: each volume is considered separately for expiration, and each file on a volume can increment the volume expiration date.

- Default: OPTION RM VRSEL
RM(EXPDT): Conversion EDGĆNV̂T Sample JCL

```plaintext
// EDGĆNV̂T EXEC PGM=EDGĆNV̂T
// SYSDUMP DD SYSOUT=*  
// SYSPR̂INT DD SYSOUT=*  
// SYSOUT DD SYSOUT=*  
// SPACE=(80, (1, 1), RLSE), UNIT=SYSDA  
// DSN=DD46059. RM EDGĆNV̂T. SYSOUT. DATA  
// VR̂SAMDS DD D̂D SYSOUT, CATLG, LRECL=80, RECFM=FB,  
// SPACE=(80, (10, 5), RLSE), UNIT=SYSDA,  
// DSN=DD46059. RM EDGĆNV̂T. VR̂SAMDS. DATA  
// DEXIT̂CT DD D̂D SYSOUT, SHR, D̂SN=DD46059. RM EDGCśLV̂D. DEXIT̂CT. DATA  
// DD SYSOUT, SHR, D̂SN=DD46059. RM EDGĆNSL. DEXIT̂CT. DATA  
// LI BLI ST DD D̂D SYSOUT, CATLG, LRECL=1000, RECFM=VB,  
// SPACE=(TRK (1, 1), RLSE), UNIT=SYSDA,  
// DSN=DD46059. RM EDGĆNV̂T. LI B̂LIX̂ST. DATA  
// OMĂLI ST DD D̂D SYSOUT, CATLG, LRECL=400, RECFM=VB,  
// SPACE=(TRK (1, 1), RLSE), UNIT=SYSDA,  
// DSN=DD46059. RM EDGĆNV̂T. OMĂLI ST. DATA  
// BI LI ST DD D̂D SYSOUT, CATLG, LRECL=256, RECFM=VB,  
// SPACE=(TRK (1, 1), RLSE), UNIT=SYSDA,  
// DSN=DD46059. RM EDGĆNV̂T. BI LI ST. DATA  
// VR̂SLI ST DD D̂D SYSOUT, CATLG, LRECL=256, RECFM=VB,  
// SPACE=(TRK (1, 1), RLSE), UNIT=SYSDA,  
// DSN=DD46059. RM EDGĆNV̂T. VR̂SLI ST. DATA  
// SYSIN DD *  
OPTI ON RM EXPD T  
LÔCODE VAÛLT1 BI NS  
LÔCODE VAÛLT2 BI NS  
IF VMÊDI A EQÛALS TAPE1600 THEN MEDI ANAME EQUÂLS REELS
```
Agenda

- z/OS Release 13 Enhancements
  - Selective volume movement
  - More „Last change“ details
  - Last Reference Date for VRS
  - ISPF Navigation Enhancements
  - Show Effective Retention/Expiration Date
  - Search Dataset Extensions
  - TVEXTPURGE Extra Days
  - More information on Expiry Date source
  - Exclude data sets from VRSEL
  - New RETENTIONMETHOD(EXPDT)
  - Enhanced Tape Copy Support
Enhanced Tape Copy Support

- Tape copy applications could previously use RMM subcommands to update data set and volume meta data after a copy is completed.
  - BUT not all data set and volume attributes could be copied via RMM subcommands.
  - Retention of the source and target data sets is subject to VRS processing and results were not always predictable.

- A new data set subcommand option COPYFROM, does now support copying all applicable attributes and controlling the retention of the source data set.
  - Using installation exit EDG_EXIT100 option tape copy applications can avoid issuing the subcommands needed for copying data set attributes.

- Whether by using subcommands or the user exit copied data sets can now inherit all required attributes
  - Even without the copy application knowing what all the attributes are
Enhanced Tape Copy Support: RMM CHANGEDATASET

- If you specify any other CHANGEDATASET operands
  - the COPYFROM operand is processed first,
  - then the additional operands.
  Therefore additional operands can specify data that overrides the copied attributes.

- Example:
  COPYFROM(RETPD(0) VX)
  copies data set and sets the source data set to pending release
Enhanced Tape Copy Support: Authorization

<table>
<thead>
<tr>
<th>Define the resource</th>
<th>To Control the</th>
</tr>
</thead>
<tbody>
<tr>
<td>STGADMIN.EDG.CD.COPYFROM.\texttt{dsname} \texttt{minlength}</td>
<td>Copying of data set attributes from data set \texttt{dsname} to another data set, and to affect the retention of the source data set.</td>
</tr>
</tbody>
</table>

\texttt{minlength}

If you use a generic profile, the minimum nongeneric profile name checked for by DFSMSrmm is ‘STGADMIN.EDG.CD.’

<table>
<thead>
<tr>
<th>When you Define</th>
<th>With Access</th>
<th>Then</th>
</tr>
</thead>
<tbody>
<tr>
<td>STGADMIN.EDG.CD.COPYFROM.\texttt{dsname}</td>
<td>Entity not defined</td>
<td>Based on STGADMIN.EDG.MASTER access.</td>
</tr>
<tr>
<td>READ</td>
<td></td>
<td>You are permitted to copy attributes and update retention for identically named data sets.</td>
</tr>
<tr>
<td>UPDATE</td>
<td></td>
<td>You are permitted to copy attributes and update retention for any two data set records.</td>
</tr>
</tbody>
</table>
Enhanced Tape Copy Support:
Copying Data Set Attributes

- After copying the data set attributes, all data set records of the target data set make the data set appear to be the original.

- DFSMSrmm copies all attributes that are not related to the physical aspects of the data set, volume and tape drive.

- Attributes related to retention are subject to update by the next run of inventory management. The intention is that the copied data set will be retained in the same way as the source data set.

- After the attributes are copied there will be no trace of the copy application or the batch job used to perform the copy because all target data set attributes reflect the creation and use of the source data set.
  - The “last change” information of the target data set is updated during command processing to reflect that the command was processed.
# Enhanced Tape Copy Support: Data Set Attributes Not Copied

Enhanced Tape Copy Support: Data Set Attributes Not Copied

<table>
<thead>
<tr>
<th>Command operand</th>
<th>Extract file field</th>
<th>REXX Variable/SFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>dname</td>
<td>RDDDSNAME</td>
<td>EDG@DSN</td>
</tr>
<tr>
<td>VOLUME</td>
<td>RDVOLSER</td>
<td>EDG@VOL</td>
</tr>
<tr>
<td>SEQFILESEQ</td>
<td>RDDSNSEQ</td>
<td>EDG@FILE</td>
</tr>
<tr>
<td>LABELNUMBER</td>
<td>RDLABNO</td>
<td>EDG@SEQ</td>
</tr>
<tr>
<td>TOTALBLKCOUNT</td>
<td>RDTOTAL_BLKCNT</td>
<td>EDG@BLKT</td>
</tr>
<tr>
<td>PERCENT</td>
<td>RDPERCENT</td>
<td>EDG@DPCT</td>
</tr>
<tr>
<td>DEVNUM</td>
<td>RDUUNITAD</td>
<td>EDG@DEV</td>
</tr>
<tr>
<td>LRECL</td>
<td>RDRECL</td>
<td>EDG@LRECL</td>
</tr>
<tr>
<td>RECFM</td>
<td>RDRECFM</td>
<td>EDG@RCFM</td>
</tr>
<tr>
<td>BLKSIZE</td>
<td>RDBLKSZ</td>
<td>EDG@BLKS</td>
</tr>
<tr>
<td>BLKCOUNT</td>
<td>RDBLKCNT</td>
<td>EDG@BLKC</td>
</tr>
<tr>
<td>owner</td>
<td>RDOWNDSN</td>
<td>EDG@OWN</td>
</tr>
<tr>
<td>data set size</td>
<td>RDDSSIZE, RDSIZE</td>
<td>EDG@DS56</td>
</tr>
<tr>
<td>catalog status</td>
<td>RDCAT</td>
<td>EDG@CTLG</td>
</tr>
<tr>
<td>storage group</td>
<td>RDSGNAME</td>
<td>EDG@SC</td>
</tr>
<tr>
<td>DATACLASS</td>
<td>RDCNAME</td>
<td>EDG@SG</td>
</tr>
<tr>
<td>start block ID</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>end block ID</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>last device number</td>
<td>RDLDEVN</td>
<td>EDG@LDEV</td>
</tr>
<tr>
<td>BESKEY</td>
<td>RDBESKEY</td>
<td>EDG@BESK</td>
</tr>
<tr>
<td>VRSELEXCLUDE</td>
<td>RDVEX</td>
<td>EDG@VEX</td>
</tr>
<tr>
<td>Note: This attribute is not copied unless both the source and target volumes are managed by RM(VRSEL)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ABEND</td>
<td>RDABEND</td>
<td>EDG@ABEND</td>
</tr>
<tr>
<td>Note: This attribute is not copied unless it is set. The source setting is merged with the target setting.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Enhanced Tape Copy Support: Installation Exit Support

- A new EDG_EXIT100 option is provided to notify RMM that the data set being created is being copied from another.

- During OPEN processing the exit can identify the source data set from which RMM will obtain all existing data set attributes which will be used for the new data set.
  
  - RMM EOV processing ensures that the attributes are copied to all new data set records when the output data set becomes a multi-volume data set.

```plaintext
PL100_CAN_COPYFROM     EQU X'08'
PL100_SET_COPYFROM     EQU X'04'
PL100_COPYFROM_DSN     DS CL44
PL100_COPYFROM_VOLSER  DS CL6
PL100_COPYFROM_DSEQ    XL4
PL100_COPYFROM_OWNER   DS CL8 ...```
Enhanced Tape Copy Support: Installation Exit Exploitation

- **Dynamic Exit Available since z/OS V1R11**
  - Add exit module dynamically prior to the first copy
    - Pass source data set key via exit - Dsname, file sequence, volser
    - Select required retention method and VRSELEXCLUDE for target via exit
    - During OPEN &CLOSE the attributes are copied from source to target Data Set record
    - Physical attributes are set based on volume and drive used
  
  - Delete exit module at end of processing / all copies completed

- Your copy application must communicate with your exit module

- When processing successful use the RMM API to:
  - Issue RMM commands for source data sets and volumes, for example:
    
    RMM DV volser RELEASE
    or
    RMM CV volser RETENTIONMETHOD(EXPDT) RETPD(4)
    or
    RMM CD sourcedsn VOLUME(sv) SEQ(ss) VRSELEXCLUDE(YES)
Agenda

- z/OS Release 13 Enhancements
- Selected z/OS Release 12 Enhancements
- Appendix
What’s new in z/OS DFSMSrmm V1.13

Support for TS1140

- DFSMSrmm Support provided via
  - APAR OA35804 (zOS V1.10)
  - APAR OA33958 (z/OS V1.11 – V1.12)
  - z/OS V1.13

- DFSMSrmm support in z/OS V1.10 and V1.11 is a subset of the SUPPORT available with V1.12 and above

<table>
<thead>
<tr>
<th>z/OS V1.10 and above provides</th>
<th>In addition, z/OS V.12 and above provides</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ New Media Types</td>
<td>▪ New maximum values for</td>
</tr>
<tr>
<td>▪ New Recording Formats</td>
<td>– BLKCOUNT</td>
</tr>
<tr>
<td>▪ Changed RMM commands:</td>
<td>– TOTALBLKCOUNT</td>
</tr>
<tr>
<td>– ADDVOLUME</td>
<td>▪ New volume and data set attributes</td>
</tr>
<tr>
<td>– CHANGEVOLUME</td>
<td>▪ LISTVOLUME output; LISTDATASET output</td>
</tr>
<tr>
<td>– SEARCHVOLUME</td>
<td>▪ RMM ISPF Dialog</td>
</tr>
<tr>
<td></td>
<td>▪ REXX and API SFIs</td>
</tr>
<tr>
<td></td>
<td>▪ Reporting</td>
</tr>
</tbody>
</table>
### New Media Types and Recording Modes

<table>
<thead>
<tr>
<th>Media Type</th>
<th>Alias</th>
<th>Full Media Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDIA11</td>
<td>EATC</td>
<td>IBM Enterprise Advanced Tape Cartridge 3592.</td>
</tr>
<tr>
<td>MEDIA12</td>
<td>EAWTC</td>
<td>IBM Enterprise Advanced WORM Tape Cartridge 3592.</td>
</tr>
<tr>
<td>MEDIA13</td>
<td>EAETC</td>
<td>IBM Enterprise Advanced Economy Tape Cartridge 3592.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recording Format</th>
<th>Description</th>
<th>Valid with media types</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFMT4</td>
<td>Data is written to the volume in EFMT4 format.</td>
<td>Existing: EXTC, EXWTC, New: EATC, EAWTC, EAETC</td>
</tr>
<tr>
<td>EEFMT4</td>
<td>Data is written to the volume in encrypted EFMT4 format.</td>
<td>Existing: EXTC, EXWTC, New: EATC, EAWTC, EAETC</td>
</tr>
</tbody>
</table>

- New types and recording formats can be used with ADDVOLUME, CHANGEVOLUME, SEARCHVOLUME commands.
Larger counts and new attributes

- Larger block counts
  - BLKCOUNT can be now up to 4294967295 (10 characters).
    - ADDDATASET and CHANGEDATASET
  - TOTALBLKCOUNT can be now up to 18446744073709551615 (20 characters)
    - CHANGEDATASET

- New attributes
  - VOLUME
    - Physical space Used
    - Compression
  - DATASET
    - Physical Size
    - Compression

\[
\text{Compression} = \frac{\text{ApplicationBytesWritten}}{\text{DeviceBytesWritten}}
\]

- Due to granularity of data the compression value for smaller data sets may not be meaningful
- 0.00 displayed when no ration can be computed
Summary of 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
Safety net: EXPDTDROP / VRSDROP / VRSRETAIN

- **VRSDROP** to 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

![Diagram of VRSDROP]

VRSDROP

- **PERCENT(count)**
- **COUNT(count)**
- **PERCENT(%age)**
- **INFO**
- **FAIL**
- **OFF**
- **WARN**

![Diagram of VRSRETAIN]

VRSRETAIN

- **PERCENT(count)**
- **COUNT(count)**
- **PERCENT(%age)**
- **INFO**
- **FAIL**
- **OFF**
- **WARN**

![Diagram of EXPDTDROP]

EXPDTDROP

- **PERCENT(count)**
- **COUNT(count)**
- **PERCENT(%age)**
- **INFO**
Sample VRSRETAIN Report

Newly assigned volumes subject to VRSRETAIN

<table>
<thead>
<tr>
<th>VOLSER</th>
<th>FSEQ</th>
<th>DSNNAME</th>
<th>JOBNM</th>
<th>RETAINED</th>
<th>PRIMARY VRS</th>
<th>VOLUME</th>
<th>JOB NAMK</th>
<th>TYPE</th>
<th>RETAIN</th>
<th>REASON</th>
<th>COUNT</th>
<th>SET</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOL1</td>
<td>1</td>
<td>DK0USER_DSN11</td>
<td>Y</td>
<td></td>
<td>DK0USER.*</td>
<td>D</td>
<td>DATASET</td>
<td>3</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOL1</td>
<td>2</td>
<td>DK0USER_DSN12</td>
<td>N</td>
<td></td>
<td>DK0USER.*</td>
<td>D</td>
<td>INELICIT</td>
<td>3</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOL1</td>
<td>3</td>
<td>DK0USER_DSN13</td>
<td>V</td>
<td></td>
<td>DK0USER.*</td>
<td>D</td>
<td>DATASET</td>
<td>3</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOL2</td>
<td>1</td>
<td>D046059_DSN21</td>
<td>N</td>
<td></td>
<td>D046059.*</td>
<td>D</td>
<td>VOL2</td>
<td>2</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOL2</td>
<td>2</td>
<td>D010155_DSN22</td>
<td>N</td>
<td></td>
<td>D046059.*</td>
<td>D</td>
<td>VOL2</td>
<td>2</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOL7</td>
<td>1</td>
<td>D077077_DSN71</td>
<td>N</td>
<td></td>
<td>D046059.*</td>
<td>D</td>
<td>SET</td>
<td>1</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOL7</td>
<td>2</td>
<td>D077077_DSN72</td>
<td>Y</td>
<td></td>
<td>D077077_DSN72</td>
<td>D</td>
<td>DATASET</td>
<td>2</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Data sets in this status: 6

Newly assigned volumes subject to VRSRETAIN

<table>
<thead>
<tr>
<th>VOLSER</th>
<th>FSEQ</th>
<th>DSNNAME</th>
<th>JOBNM</th>
<th>RETAINED</th>
<th>PRIMARY VRS</th>
<th>VOLUME</th>
<th>JOB NAMK</th>
<th>TYPE</th>
<th>RETAIN</th>
<th>REASON</th>
<th>COUNT</th>
<th>SET</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOL1</td>
<td>1</td>
<td>DK0USER_DSN11</td>
<td></td>
<td>STEINHA</td>
<td>DK0USER.*</td>
<td>D</td>
<td>1</td>
<td>Y</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOL1</td>
<td>2</td>
<td>D010155_DSN41</td>
<td>N</td>
<td></td>
<td>DK0USER.*</td>
<td>D</td>
<td>2</td>
<td>V</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOL5</td>
<td>1</td>
<td>D010155_DSN51</td>
<td>N</td>
<td></td>
<td>DK0USER.*</td>
<td>D</td>
<td>3</td>
<td>N</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOL5</td>
<td>2</td>
<td>D010155_DSN52</td>
<td>N</td>
<td></td>
<td>DK0USER.*</td>
<td>D</td>
<td>3</td>
<td>N</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Data sets in this status: 6

Summary of newly assigned volumes for VRSRETAIN

<table>
<thead>
<tr>
<th>Status</th>
<th>VOLUME COUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>RETAINED</td>
<td>4</td>
</tr>
<tr>
<td>NOTRETAINED</td>
<td>3</td>
</tr>
</tbody>
</table>
OPENRULE IGNORE (V1.12)

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

<table>
<thead>
<tr>
<th>Library</th>
<th>OPENRULE for</th>
<th>Result in</th>
<th>Library</th>
<th>OPENRULE for</th>
<th>Result in</th>
</tr>
</thead>
<tbody>
<tr>
<td>requested volser</td>
<td>VOL1 volser</td>
<td>V1R11</td>
<td>requested volser ignored</td>
<td>V1R12</td>
<td></td>
</tr>
<tr>
<td>Non-system managed (SHELF)</td>
<td>IGNORE</td>
<td>ACCEPT</td>
<td>requested volser ignored</td>
<td>ACCEPT</td>
<td>accepted</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(at file validation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACCEPT</td>
<td>IGNORE</td>
<td>VOL1 volser ignored, LBL ERR VOL1</td>
<td></td>
<td>accepted</td>
</tr>
<tr>
<td>System managed (ATL)</td>
<td>IGNORE</td>
<td>ACCEPT</td>
<td>requested volser ignored</td>
<td>ACCEPT</td>
<td>accepted</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(at file validation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACCEPT</td>
<td>IGNORE</td>
<td>VOL1 volser ignored, 613-1C requested volser</td>
<td></td>
<td>accepted</td>
</tr>
</tbody>
</table>
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

- **Subcommand Changes:**
  
  ![Subcommand Diagram]

  - Setting using the dialog
    - New ‘HY’ and ‘HN’ line commands
  - When HOLD attribute is set:
    - Unable to RELEASE the volume
    - EXPROC prevents expiration
Dialog CLIST 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
Copy Export processing (V1.12)

- 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

- **EDGJCEXP Report – sorted by dataset**

<table>
<thead>
<tr>
<th>DATA SET INFORMATION</th>
<th>- 1 -</th>
<th>12/08/2009 03:30:21</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DATA SET NAME</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BERNDS.EXPIRED.HYD880</td>
<td>2009/337</td>
<td>150732 F 80 2009/352 2009/340 1 Y</td>
</tr>
<tr>
<td>BERNDS.MULTI.VOLUME.DS1</td>
<td>2009/338</td>
<td>082524 FB 80 2009/353 2009/341 1 Y</td>
</tr>
<tr>
<td>BERNDS.MULTI.VOLUME.DS1</td>
<td>2009/338</td>
<td>082524 FB 80 2009/353 2009/341 1 Y</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LOGICAL VOLUME INFO</th>
<th>STACKED VOLUME INFO</th>
<th>COPY EXPORT INFO</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOLSER  VOLSEQ LOCATION DATE</td>
<td>VOLSER LOCATION NATION</td>
<td>EXPORT DATE EXPORT TIME</td>
</tr>
<tr>
<td>HYD868  1 MAZ2 2009/341</td>
<td>A02039 ATL3484F MAZ1</td>
<td>Y 2020/001 Y 2009/338 083938</td>
</tr>
<tr>
<td>HYD880  1 MAZ2 2009/341</td>
<td>A02039 ATL3484F MAZ1</td>
<td>Y 2020/001 Y 2009/338 083938</td>
</tr>
<tr>
<td>HYD862  1 MAZ2 2009/341</td>
<td>A02039 ATL3484F MAZ1</td>
<td>Y 2020/001 Y 2009/338 083938</td>
</tr>
<tr>
<td>HYD861  1 MAZ2 2009/341</td>
<td>A02039 ATL3484F MAZ1</td>
<td>Y 2020/001 Y 2009/338 083938</td>
</tr>
</tbody>
</table>
**EDGJCEXP Report – sorted logical volume**

<table>
<thead>
<tr>
<th>DATA SET INFORMATION</th>
<th>CREATE DATE</th>
<th>CREATE TIME</th>
<th>FM</th>
<th>SIZE</th>
<th>RETENTION DATE</th>
<th>EXPIRATION DATE</th>
<th>PHYSICAL VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>BERNDS.MULTI.VOLUME.DS1</td>
<td>2009/338</td>
<td>082524</td>
<td>FB</td>
<td>80</td>
<td>2009/353</td>
<td>2009/341</td>
<td>1 Y</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STACKED VOLUME INFO</th>
<th>COPY EXPORT INFO</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOLSER</td>
<td>LOCATION</td>
</tr>
<tr>
<td>A02039</td>
<td>ATL3484F</td>
</tr>
<tr>
<td>A02039</td>
<td>ATL3484F</td>
</tr>
<tr>
<td>A02039</td>
<td>ATL3484F</td>
</tr>
<tr>
<td>A02039</td>
<td>ATL3484F</td>
</tr>
</tbody>
</table>
Overview

- EDGJCEXP Report – sorted stacked volume
Agenda

- z/OS Release 13 Enhancements
- Selected z/OS Release 12 Enhancements
- Appendix
### Summary of z/OS DFSMSrmm V1R13

+: Support integrated into release base

<table>
<thead>
<tr>
<th>Function</th>
<th>z/OS V1.13</th>
<th>z/OS V1.12</th>
<th>z/OS V1.11</th>
<th>z/OS V1.10</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRSELEXCLUDE &amp; RM(EXPDT)</td>
<td>+</td>
<td>OA32984 (Toleration)</td>
<td>OA32984 (Toleration)</td>
<td>OA32984 (Toleration)</td>
</tr>
<tr>
<td>TS1140 Support</td>
<td>+</td>
<td>OA33958</td>
<td>OA33958</td>
<td>OA35804</td>
</tr>
<tr>
<td>• Selective volume movement</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>• More „Last change“ details</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Last Reference Date for VRS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• ISPF Navigation Enhancements</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Show Effective Retention/Expiration Date</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Search Dataset Extensions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• TVEXTPURGE Extra Days</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• More information on Expiry Date source</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Enhanced Tape Copy Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retention limit reporting</td>
<td>+</td>
<td>+</td>
<td>OA30881</td>
<td>OA30881</td>
</tr>
<tr>
<td>Volume Hold</td>
<td>+</td>
<td>+</td>
<td>OA30436 (Honor Volume Hold)</td>
<td>OA30436 (Honor Volume Hold)</td>
</tr>
<tr>
<td>• EAS Eligibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• OPENRULE IGNORE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• IPv6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• AUTOR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Addt. Status commands &amp; RAS enhancements</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option to turn uppercasing on/off</td>
<td>+</td>
<td>+</td>
<td>OA32661</td>
<td>OA32661</td>
</tr>
<tr>
<td>TS7700 1.6 Support, Logical WORM</td>
<td>+</td>
<td>+</td>
<td>OA28637</td>
<td>OA28637</td>
</tr>
</tbody>
</table>
Important APAR and Enhancements Provided In the Service Stream

- **OA34036**
  - The “volume hold” flag –newly introduced with z/OS V1.12- will be honored on R10, R11

- **OA31661**
  - Additional option to control uppercasing of dataset names. The default is to convert to upper case (R9-R11)

- **OA32754, OA33498**
  - In a client/server configuration the client may hang after a network error (R9-R12)
  - Or a loop issuing EDG0356E SERVER COMMUNICATION ERROR messages may occur

- **OA33876 (currently open, R11)**
  - TS7700 COPY EXPORT related fixes and documentation updates
  - Fixes to address problems until microcode fix level is available
## Summary of z/OS DFSMSrmm V1R12

+: Support integrated into release base

<table>
<thead>
<tr>
<th>Function</th>
<th>z/OS (RMM) release</th>
<th>z/OS V1.12</th>
<th>z/OS V1.11</th>
<th>z/OS V1.10</th>
<th>z/OS V1.9</th>
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<tbody>
<tr>
<td>Retention limit reporting</td>
<td></td>
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<tr>
<td>Volume Hold</td>
<td></td>
<td>+</td>
<td>OA30436</td>
<td>OA30436</td>
<td></td>
</tr>
<tr>
<td>• EAS Eligibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• OPENRULE IGNORE</td>
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<tr>
<td>• IPv6</td>
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<tr>
<td>• AUTOR</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>• Addt. Status commands &amp; RAS enhancements</td>
<td></td>
<td>+</td>
<td></td>
<td></td>
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<tr>
<td>Option to turn uppercasing on/off</td>
<td></td>
<td>+</td>
<td>OA32661</td>
<td>OA32661</td>
<td>OA32661</td>
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<tr>
<td>TS7700 1.6 Support, Logical WORM</td>
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<td>+</td>
<td>OA28637</td>
<td>OA28637</td>
<td>OA28637</td>
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<tr>
<td>• Report generator extensions</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Journaling for D/R, EDGUPDT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• EDGINERS SCAN</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Migration checks for z/OS V1.11+ coexistence</td>
<td></td>
<td>+</td>
<td>OA32028</td>
<td>OA26947</td>
<td>OA26947</td>
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<td></td>
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<td>OA26947</td>
<td>OA32028</td>
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<td>N/A</td>
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</tbody>
</table>
Where to go for more information on DFSMSrmm

- DFSMSrmm Homepage: http://www.ibm.com/systems/storage/software/sms/rmm
  - DFSMSrmm Enhancements: https://www.ibm.com/support/docview.wss?q1=T1010391&rs=0&uid=isg3T1010391

- z/OS V1.12 DFSMS library:
  http://www.ibm.com/systems/z/os/zos/bkserv/r12pdf/#dfsms, especially
  - DFSMSrmm Managing and Using Removable Media
  - DFSMSrmm Implementation and Customization Guide


- Contact the DFSMSrmm team: DFSMSrmm@de.ibm.com
Thank you!