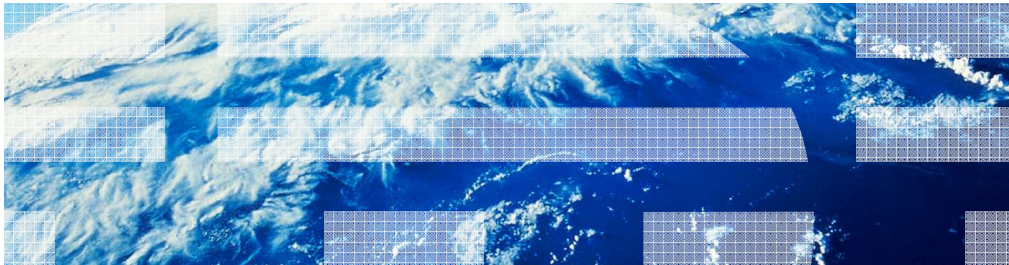


# z/OS V1R13

## DFSMSrmm: Customer requirements



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## Session Objectives

- Present an overview about all the new DFSMSrmm features developed for  
DFSMSrmm - Customer Requirements'
- Show how to use and exploit the new features
- Make clear what the benefits are

## Selective Volume Movement

## Overview

- **Problem Statement / Need Addressed**

- Automated movement avoids moving logical volumes when stacked volume support is enabled. However, many of our customers have non-IBM virtual tape solutions and need another way to prevent volume movement driven by VRSeS.

- **Solution**

- The solution is based on library or location name so that if a library/appliance is not able to support movement of volumes it can be specified in parmlib LOCDEF command.

- **Benefit / Value**

- Improved control over automatic inventory management driven movement.

## Usage & Invocation – Parmlib LOCDEF option AUTOMOVE

▶ LOCDEF – LOCATION ( [ SHELF ] [ system\_managed\_library\_name ] ) →  
 ▶ [ AUTOMOVE ( [ YES ] [ NO ] ) ]

**YES** - DSTORE will initiate automated movement when the required location does not match the current location of the volume. This is the default.

**NO** - DSTORE will not initiate automated movement

## Usage & Invocation – RMM 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 the volume's current location is defined in EDGRMMxx parmlib member with LOCDEF location AUTOMOVE(NO), DSTORE processing does 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.
- Moves requested manually from an AUTOMOVE(NO) location to bin-managed storage locations will not be initiated by DSTORE processing.

## Usage & Invocation – TSO RMM LISTCONTROL

```

Location definitions:
Location Def Mgtype  Ltype  Priority AM Medianames
-----
          N          AUTO    4800   Y
          N          MANUAL  4900   Y
BERLIN   Y  NOBINS  HSTORE  2000   Y  MEDIA3
DISTANT  N          STORE    200   Y
LOCAL    N          STORE    300   Y
MAINZ05  Y  NOBINS  STORE   2000   Y  MEDIA1
MYSYSTEM Y          MANUAL  4900   N
REMOTE   N          STORE    100   Y
SHELF    Y          STORE     2     Y
  
```





## Usage & Invocation – REXX and SFIs

Rexx Name	Description	Type	Length	Value	Commands
LDAM	Automove	Character	1	Y, N	LC LOCDEF

SFI Name	SFI Number	Data Type Identifier	Length	Value	Commands
LDAM	X' 84A100'	3(Bin(8))	9	Automove: 0 = Yes	LC LOCDEF

---

## Session Summary

- RMM provides another way to control automatic movement based on location definition.

## Last Change Details

## Overview

- **Problem Statement / Need Addressed**

- Customer need an easy way to audit changed media,
  - Whenever possible without running EDGAUD audit reports.

- **Solution**

- Last change information is added to all list command outputs and to the dialog for all resources stored in the RMM CDS.

- **Benefit / Value**

- Reduced need to run EDGAUD audit reports.



## Usage & Invocation

```

Product Number = PR001          Level = V01R01M01  Owner = RMMUSER
Name           = test
Description    =

Last Change information:
Date           = 05/27/2010    Time = 03:38:56    System = EZL0000
User change date = 05/27/2010    Time = 03:38:56    User ID = D008210

No Product volumes

```

Example: "RMM LP PROD01 LEVEL(V01R01M01)"

- Last change information is added to the TSO list command output for all resources stored in the RMM CDS
- Last change information is added to the List-, Change- and Delete-panels for all resources stored in the RMM CDS

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DFSMSrmm: Customer Requirements

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The Last change information fields display details of the most recent change to the record.

Date	Displays the last change date
Time	Displays the last change time
System	Displays the ID of the system on which the last change occurred

User change date Displays the date of the most recent change by a user, other than by a DFSMSrmm internal function

User change time Displays the time of the most recent change by a user, other than by a DFSMSrmm internal function

User ID Displays the ID of the user who caused the most recent change.

If the most recent change was made by DFSMSrmm processing the ID starts with an asterisk (\*). Internal IDs include these values:

- \*OAM - DFSMSrmm system managed tape support
- \*HKP - Inventory management
- \*OCE - DFSMSrmm OPEN/CLOSE EOVS support

## Usage & Invocation – New REXX Variables (1)

Name	Description	Type	Length	Value	Commands
LCDT	Last change Date	Character	10	Date format	LB, LD, LQ, LP, LR, LS, LV ACCESS
LQID	Last change User id	Character	8	User ID, internal values start '**'	LB, LD, LQ, LP, LR, LS, LV ACCESS
LCSI	Last change system ID	Character	8	System ID	LB, LD, LQ, LP, LR, LS, LV ACCESS
LCTM	Last change time	Character	8	8 characters (hh:mm:ss)	LB, LD, LQ, LP, LR, LS, LV ACCESS
LQUD	Last "user" change date	Character	10	Date format	LB, LD, LQ, LP, LR, LS, LV ACCESS
LQUT	Last "user" change time	Character	8	8 characters (hh:mm:ss)	LB, LD, LQ, LP, LR, LS, LV ACCESS

## Usage & Invocation – New REXX Variables (2)

Name	Description	Type	Length	Value	Commands
CRID	Creating user ID	character	8	User ID	LV VOL
DSEQ	Data set sequence number	numeric			+ LV VOL
RLPR	Required location priority	numeric	4	1 - 9999, or blank	LV STORE
OLON	Old loan location	character	8	Location name	LV VOL

## Usage & Invocation – New SFI (1)

SFI Name	SFI Number	Data Type Identifier	Length	Value	Commands
LCDJ	X 841500'	Packed decimal Julian date For nat	12	Last change date	LV ACCESS, S(e), LD, SD(e), LP, SP(e), LS, SS(e), LO, LR, LB
LCID	X 842000'	Character (variable length)	16	Last change user ID Internal values start '**	LV ACCESS, S(e), LD, SD(e), LP, SP(e), LS, SS(e), LO, LR, LB
LCS	X 842500'	Character (variable length)	16	Last change system ID	LV ACCESS, S(e), LD, SD(e), LP, SP(e), LS, SS(e), LO, LR, LB
LCTM	X 843500'	Packed decimal time for nat	12	Last change time	LV ACCESS, S(e), LD, SD(e), LP, SP(e), LS, SS(e), LO, LR, LB
LCUD	X 843600'	Packed decimal Julian date For nat	12	Last „user“ change date	LV ACCESS, S(e), LD, SD(e), LP, SP(e), LS, SS(e), LO, LR, LB
LCUT	X 843700'	Packed decimal time for nat	12	Last „user“ change time	LV ACCESS, S(e), LD, SD(e), LP, SP(e), LS, SS(e), LO, LR, LB



## Usage & Invocation – New SFI (2)

SFI Name	SFI Number	Data Type Identifier	Length	Value	Commands
CRID	X 817900'	Character (variable length)	16	Creating user ID	LV VOL, SM(e)
DSEQ				Data set sequence number	+ LV VOL, SM(e)
RLPR	X 888500'	Binary(32)	12	Required Location Priority	LV STORE, SM(e)
QLON	X 86C100'	Character (variable length)	16	Old Location	LV VOL, SM(e)

---

## Session Summary

- Last change information is added to all list command outputs and to the dialog for all resources stored in the RMM CDS.

## VRS Last Reference Date

## Overview

- **Problem Statement / Need Addressed**

- 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.

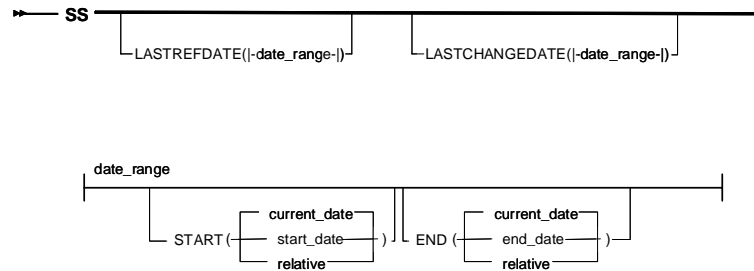
- **Solution**

- Display the VRS last reference date in the dialog and provide sorting of search results by it.

- **Benefit / Value**

- The user can now quickly and easily cleanup unused VRS'.

## Usage & Invocation – SEARCHVRS subcommand



Two new operands were added to the Search VRS command:

LASTREFDATE, LASTCHANGEDATE

The last reference date of the vital record specification record means the date of the last VRSEL run, when this VRS was used to retain a data set or volume.

The last change date of the vital record specification record means the date, when this VRS was created or updated the last time.

Use the operand to specify a date range for your search. A date\_range consists of a start date and an end date. Each date can be an absolute date in either yyyy/ddd or yyddd format, or it can be a relative value from which DFSMSrmm calculates the date.

START(start\_date)

You can optionally specify a starting date. If you omit the date the current date is used. The search is performed inclusive of the start date.

END(end\_date)

You can optionally specify an ending date. If you omit the date the current date is used. The search is performed inclusive of the end date.

The dates are considered as local dates and not subject to time zone conversion.

A relative value is specified as a negative number of days, months or years.

-0 means the current day, current month, current year.

-nD means the date is n days before the current date

-nM means the date is n months before the current month and the current

## Usage & Invocation – RMM ISPF Panel Updates (1)

```

EDGPV110          DFSMSrmm Display Data Set VRS
Command ==>

Data set nask . . : 'RMMUSER ***'          GDG . : NO
Job name nask . . :

Count . . . . . : 99999                    Retention type . . . . . : CYCLES
Delay . . . . . : 0 Days                    While cataloged . . . . . : YES
                                           Until expired . . . . . : NO

Location . . . . . : HOME
Number in location : 99999
Priority . . . . . : 0

Next VRS in chain . . :                    Release options:
Chain using . . . . . :                    Expiry date ignore . . . . : NO
                                           Scratch immediate . . . . . : NO

Owner . . . . . : RMMUSER
Description . . . . . :
Last reference . . : 02/18/2010 17:23:51 ( MM DD/YYYY HH:MM:SS )
Delete date . . . . : 12/31/1999 ( MM DD/YYYY )
  
```

DFSMSrmm Display Data Set VRS Panel Updates

The Last change information fields display details of the most recent change to the record.

- Date                    Displays the last change date
- Time                    Displays the last change time
- System                  Displays the ID of the system on which the last change occurred

User change date    Displays the date of the most recent change by a user, other than by a DFSMSrmm internal function

User change time    Displays the time of the most recent change by a user, other than by a DFSMSrmm internal function

User ID                Displays the ID of the user who caused the most recent change.

If the most recent change was made by DFSMSrmm processing the ID starts with an asterisk (\*). Internal IDs include these values:

- \*OAM    - DFSMSrmm system managed tape support
- \*HKP    - Inventory management
- \*OCE    - DFSMSrmm OPEN/CLOSE EOV support

## Usage & Invocation – RMM ISPF Panel Updates (2)

```

EDGPV010                DFSMSrmm Search VRSs
Command ==>

Optionally specify one of:
Data set mask _____ GDG . . . .
Job name mask _____ ( Yes or Nb )
Volume serial _____ Retention type _____
VRS name . . . . . While cataloged ___ ( Yes or blank for all )
                               Until expired ___ ( Yes or blank for all )
Location . . . . . Release options:
Next VRS in chain _____ Expiry date ignore ___ ( Yes or Nb )
Chain using . . . . . Scratch immediate ___ ( Yes or Nb )
Owner . . . . .
Limit . . . . . Limit search to first n VRSs. Default is *
Date . . . . . Start . . . . . End . . . . . Date, date range or relative value
Reference . . . . .
Change . . . . .
Dist . . . . . YES to create a data set, or NO or blank

Enter HELP or PF1 for the list of available line commands
  
```

DFSMSrmm Search VRS Panel Updates

The Last change information fields display details of the most recent change to the record.

- Date                    Displays the last change date
- Time                    Displays the last change time
- System                  Displays the ID of the system on which the last change occurred

User change date    Displays the date of the most recent change by a user, other than by a DFSMSrmm internal function

User change time    Displays the time of the most recent change by a user, other than by a DFSMSrmm internal function

User ID                Displays the ID of the user who caused the most recent change.

If the most recent change was made by DFSMSrmm processing the ID starts with an asterisk (\*). Internal IDs include these values:

- \*OAM    - DFSMSrmm system managed tape support
- \*HKP    - Inventory management
- \*OCE    - DFSMSrmm OPEN/CLOSE EOVS support

## Usage & Invocation – RMM ISPF Panel Updates (3)

EDGPV050		DFSMSrmm VRSs ( Page 4 of 4)		Row 1 to 2 of 2
Command ==>				Scroll ==> PAGE
Enter HELP or FF1 for the list of available line commands. Use the LEFT and RIGHT commands to view other data columns.				
S	Volume/Data set/Name specification	Count	Store number	Last reference
-----	-----	-----	-----	-----
	A0000*	10	10	2010/ 01/ 27
	RMMUSER **	99999	99999	2009/ 12/ 14

DFSMSrmm VRS Search Result Panel Updates

The Last change information fields display details of the most recent change to the record.

- Date                    Displays the last change date
- Time                    Displays the last change time
- System                  Displays the ID of the system on which the last change occurred

User change date    Displays the date of the most recent change by a user, other than by a DFSMSrmm internal function

User change time    Displays the time of the most recent change by a user, other than by a DFSMSrmm internal function

User ID                Displays the ID of the user who caused the most recent change.

If the most recent change was made by DFSMSrmm processing the ID starts with an asterisk (\*). Internal IDs include these values:

- \*OAM    - DFSMSrmm system managed tape support
- \*HKP    - Inventory management
- \*OCE    - DFSMSrmm OPEN/CLOSE EOVS support





## Usage & Invocation – REXX and SFI Updates

Name	Description	Type	Length	Value	Commands
DLR	Date last referenced	Character	10	Date format	+SS
DLRJ	Date last Referenced Julian	Character	8	Julian date format	+SS
TLR	Time last referenced	Character	6	hh:mm:ss	+SS

SFI Name	SFI Number	Data Type Identifier	Length	Value	Commands
DLR	X'823000'	Packed decimal Julian date Format	12	Date last referenced	+SS
TLR	X'8A6800'	Packed decimal Time format	12	Time last referenced	+SS

---

## Session Summary

- The VRS last reference date is displayed in the dialog and provide sorting of search results by it, so the user can now quickly and easily cleanup unused VRSeS.

## Display Navigation Enhancements

## Overview

- **Problem Statement / Need Addressed**

- No fast path command exists to display multi-volume and multi-file lists.
- Only very few Point-and-Shoot fields exist in the RMM dialog.

- **Solution**

- The 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 are implemented.

- **Benefit / Value**

- Quicker and easier navigation in the RMM dialog

## Usage & Invocation – New Primary Command CHAIND

```

EDGPD110          DFMSrmm Data Set Details          Multi-Volume
Command ==> CHAIND

Data set name . . . : 'D016216.MULTI.VOLUME.DS34'
Volume serial . . . : A11586          Physical file sequence number . . . : 1
Owner . . . . . : RMMUSER          Data set sequence number . . . . . : 2
                                           More:      +
Job name . . . . . : $$ANOMA1
Step name . . . . . : WRITE2          Record format . . . . . : FB
. . .
  
```

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

```

EDGPD020          DFMSrmm Data Sets (Page 1 of 2)          Row 2 to 5 of 5
Command ==>          Scroll ==> PAGE
Volume           File
S Data set name          serial Owner      seq
-----
D016216.MULTI.VOLUME.DS123      A11582 RMMUSER  1
D016216.MULTI.VOLUME.DS123      A11583 RMMUSER  1
D016216.MULTI.VOLUME.DS34      A11583 RMMUSER  2
D016216.MULTI.VOLUME.DS34      A11586 RMMUSER  1
***** Bottom of data *****
  
```

### CHAINDATASET

- Can be provided on the Display Data Set Details **or** on the Display Volume Details panel.
- Can be abbreviated to **CHAIND** or any other matching abbreviation.
- Shows the Search result list for all **data sets** of the multi-volume / multi-file set.

### CHAINVOLUME

- Can be provided on the Display Data Set Details **or** on the Display Volume Details panel.
- Can be abbreviated to **CHAINV** or any other matching abbreviation.
- Shows the Search result list for all **volumes** of the multi-volume set.

### CHAIN: depends on the panel

- Can be provided on the Display Data Set Details **or** on the Display Volume Details panel.
- Entered on the Display **Data Set Details** panel the Search result list for all **data sets** of the multi-volume / multi-file set appears.
- Entered on the Display **Volume Details** panel the Search result list for all **volumes** of the multi-volume set appears.

## Usage & Invocation – New Primary Command CHAINV

```

EDGPT110          DFSMSrmm Volume Details - All1583      Multi-Vol/Multi-File
Command ==>> CHAINV

Volume . . . . . : All1583      VOL1 volser :      Rack number :
Media name . . . . : 3480              Status . . : MASTER
                                           More:      +
Volume type . . . . : PHYSICAL      Stacked count . . . . . : 0
WorldWide ID . . . . :              Worm . . . : NO
Retention date . . . :              Expiration date . . . . . : 2010/320
. . .
  
```

The primary command CHAINV shows all volumes of the multi-volume set:

```

EDGPT020          DFSMSrmm Volumes (Page 1 of 2)          Row 1 to 4 of 4
Command ==>>          Scroll ==>> PAGE
  Volume           Assigned  Expiration S          Dest-  Tr-  Data
S  serial Owner    date      date      R Status Location ination  ans sets
-----
  All1585 RMMUSER  2010/320  2010/320  MASTER SHELF          N  1
  All1582 RMMUSER  2010/320  2010/320  MASTER SHELF          N  1
  All1583 RMMUSER  2010/320  2010/320  MASTER SHELF          N  2
  All1586 RMMUSER  2010/320  2010/320  MASTER SHELF          N  1
***** Bottom of data *****
  
```

### CHAINDATASET

- Can be provided on the Display Data Set Details **or** on the Display Volume Details panel.
- Can be abbreviated to **CHAIND** or any other matching abbreviation.
- Shows the Search result list for all **data sets** of the multi-volume / multi-file set.

### CHAINVOLUME

- Can be provided on the Display Data Set Details **or** on the Display Volume Details panel.
- Can be abbreviated to **CHAINV** or any other matching abbreviation.
- Shows the Search result list for all **volumes** of the multi-volume set.

### CHAIN: depends on the panel

- Can be provided on the Display Data Set Details **or** on the Display Volume Details panel.
- Entered on the Display **Data Set Details** panel the Search result list for all **data sets** of the multi-volume / multi-file set appears.
- Entered on the Display **Volume Details** panel the Search result list for all **volumes** of the multi-volume set appears.

## Usage & Invocation – Point-and-Shoot Fields

- New point-and-shoot fields are determined on the volume and on the data set display panel.
- To control how P&S fields are displayed, either select the Point-and-Shoot... choice from the Colors pull-down, or issue the ISPF system command PSCOLOR from any ISPF command line

```

EDGPD110                                DFSMSRmm Data Set Details
Command ==>

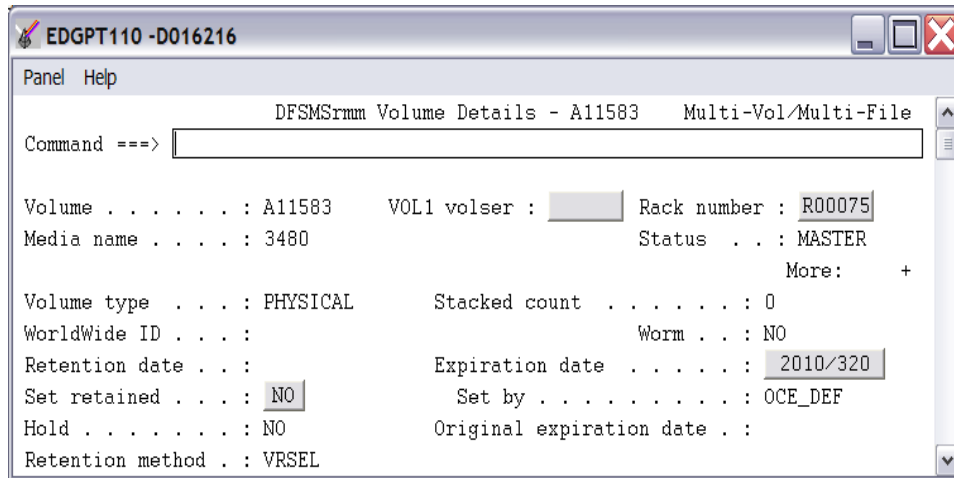
Data set name . . . : 'D016216.MULTI.VOLUME.DS34'
Volume serial . . . : A11596           Physical file sequence number . . . : 1
Owner . . . . . : RMMUSER           Data set sequence number . . . . . : 2
                                                More: +

Job name . . . . . : $$ANOMA1
Step name . . . . . : WRITE2           Record format . . . . . : FB
Program name . . . . : TAPEIO         Block size . . . . . : 80
DD name . . . . . : TAPE              Logical record length : 80
Create date . . . . . : 12/06/2010 MM/DD/YYYY Block count . . . . . : 10
Create time . . . . . : 02:34:00      Total block count . . . : 20
System id . . . . . : SYSTEM1         Data set size (KB) . . . : 1
                                                Percent of volume . . . : 0
Expiration date . . : 12/06/2010 MM/DD/YYYY Device number . . . . : 0911
Set by . . . . . : OCE_DEF
Original . . . . . : MM/DD/YYYY
:
  
```

DFSMSRmm Data Set Details Panel with Point-and-Shoot Fields

**Hint:** The ISPF system command PSCOLOR from any ISPF command line allows to customize the color, intensity and highlighting of the point-and-shoot fields.

## Usage & Invocation – Point-and-Shoot in GUI mode



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





## Usage & Invocation – List of Point-and-Shoot Volume Fields

<b>Field</b>	<b>RMM Dialog displays</b>
VOL1 volser	Volume Details for VOL1 volser
Rack number	Rack Details
Set retained	Volume search result list for the volume set
Expiration date	Dialog User Options (date options)
Availability	Volume search result list for the volume set
Owner	Owner Details
Security	Security Classification Rules for the security level
Last changed by	Owner Details
Previous volume	Volume Details for previous volser
Next volume	Volume Details for next volser
Volume sequence	Volume search result list for the volume set
Number of data sets	Data set search result list for all data sets on this volume
Actions pending	Volume Action Status list
Location	Location Definitions list
Bin number	Bin Details
Product info	Product Details



## Usage & Invocation – List of Point-and-Shoot Data Set Fields

<b>Field</b>	<b>RMM Dialog displays</b>
Volume serial	Volume Details for volser
Owner	Owner Details
Physical file sequence nbr	Data set search result list for all data sets on this volume
Data set sequence number	Data set search result list for all data sets in the volume set
Create date	Dialog User Options (Date options)

## Session Summary

- The 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 are implemented.
- This allows quicker and easier navigation in the RMM dialogs.

## Appendix - References

### Books and References

- DFSMSrmm Managing and Using Removable Media SC26-7404-12
- DFSMSrmm Application Programming Interface SC26-7403-11
- DFSMSrmm Implementation & Customization Guide SC26-7405-12
- DFSMSrmm Diagnosis Guide GY27-7619-11
- DFSMSrmm Reporting SC26-7406-11



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