



Creating DFSMShsm™ reports using DFSMSrmm™ reporter.

Goals

- This presentation will introduce the DFSMSHsm user to DFSMSrmm reporter and generating reports on DFSMSHsm data.
- After viewing this presentation, you should have a working knowledge of generating DFSMSHsm reports with DFSMSrmm reporter.
- A understanding of DFSMSHsm and JCL is a prerequisite to understanding the material presented.

This presentation is intended to introduce the DFSMSHsm user to the DFSMSrmm reporter and to provide a basic understanding of generating reports about DFSMSHsm data. The intended audience is the Storage Administrator and anyone who has a need to run reports on DFSMSHsm activities in the storage enterprise. After viewing this presentation, you should have a working knowledge of the methodology of generating DFSMSHsm reports using DFSMSrmm reporter. However, before starting you should have a working knowledge of DFSMSHsm and JCL to help understand the material presented.

Contents

- Goals
- Session objectives
- Agenda
- Overview
- Usage and invocation, tasks, examples
- Session summary
- Appendix

This presentation includes the goals of the presentation and its objectives, the agenda, an overview of reporting, details about collecting data and running reports, a final summary, and references.

Session objectives

- The objectives of this session is to develop an understanding of the usage of DFSMSrmm reporter in generating customized reports from DFSMShsm data.

The objective of this session is to develop an understanding of the use of DFSMSrmm reporter to generate customized reports from DFSMShsm data found in SMF records and DCOLLECT output.

Agenda

- Collecting report data
- Reporter setup
- Running reports
- Creating your own reports
- Report types

The agenda includes a discussion of two methods of collecting report data, a quick overview of configuring the Reporter through ISMF panels, followed by a step by step illustration of running reports, then a simple demonstration of how to create your own report, and finally some supplementary information about report types and how you can use them.

Overview

- DFSMSrmm reporter is a highly customizable report generator that can be used with any data and mapping macro.
- This presentation discusses the use of the reporter with DFSMShsm reporting data.

DFSMSrmm reporter is a highly customizable report generator that can be used with any data and mapping macro. This presentation covers the use of the reporter with DFSMShsm reporting data, which consists of SMF records having ARCFSR and ARCWWFSR data, and DCOLLECT output data extracted from DFSMShsm CDS records.

DFSMSHsm reports – Collecting data

- DFSMSHsm reports with Report Generator
 - ▶ Available in R1.10
 - ▶ Generated reports can be used on prior release data
- Reports based on
 - ▶ FSR and WWFSR (SMF) data
 - SYS1.MANX/Y (or as defined)
 - ▶ DFSMSHsm CDS data with DCOLLECT
 - OUTDS from IDCAMS DCOLLECT

DFSMSHsm reports can be created using Report Generator and they are available for the first time with release 1.10., but the reports can be run on data from prior releases. In order to run the reports you must have data in the form of ARCFSR and ARCWWFSR records which are part of the SMF data and are usually found in SYS1.MANX or SYS1.MANY datasets or as defined by your installation. DFSMSHSM CDS data is also gathered by IDCAMS DCOLLECT, and its output can be used by the reporter.

DFSMSHsm reports – Collecting data

- Reporting records
- ARCFSR (SYS1.MACLIB)
 - ▶ FSR DS records for DFSMSHsm in SMF form
 - ▶ Converted inline to ARCFSR2 by ARCGFSRC
- ARCWWFSR (SYS1.MACLIB)
 - ▶ WWFSR for ABARS in SMF form
 - ▶ Converted inline to ARCWFSR2 by ARCGWFSC
- ARCGFSRC / ARCGWFSC
 - ▶ Shipped in SYS1.DGTSLIB

The ARCFSR mapping macro can be found in SYS1.MACLIB. This maps the FSR dataset records for DFSMSHsm written in SMF form. When the reporter runs, ARCFSR records are converted inline to ARCFSR2 by a routine ARCGFSRC which is shipped in SYS1.DGTSLIB. Likewise ARCWWFSR records are converted inline to ARCWFSR2 by a routine ARCGWFSC which is also shipped in SYS1.DGTSLIB.

DFSMSHsm reports – Collecting data

Reporting records continued

- ARCUTILP (SYS1.MACLIB)
 - ▶ Modified with keywords to map each structure
 - ▶ TYPE=ALL | M | B | C | T
 - TYPE=ALL FOR ALL structures
 - TYPE=M FOR MIGRATE
 - TYPE=B FOR BACKUP
 - TYPE=C FOR DASD CAPACITY PLANNING
 - TYPE=T FOR TAPE CAPACITY PLANNING
 - ▶ No conversion needed as each type is already written uniquely

In R1.10 ARCUTILP, which is used by IDCAMS DCOLLECT and the reporter, has been segmented for reporting purposes. Each segment allows mapping of DCOLLECT written records to create reports. There are four records mapped by defining TYPE=ALL, M, B, C, T which then maps the various records as follows:

TYPE=ALL FOR ALL structures

TYPE=M FOR MIGRATE

TYPE=B FOR BACKUP

TYPE=C FOR DASD CAPACITY PLANNING

TYPE=T FOR TAPE CAPACITY PLANNING

Definition of type is used by reporter when determining which records are selected of the report.

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DFSMSHsm reports - Collecting data

- ▶ Preparation: Gathering data
 - SMF records
 - Dump SYS1.MANX/Y to DS
 - Report on records in DS
 - In-line convert
 - Using previously converted data
 - DCOLLECT data
 - IDCAMS DCOLLECT to DS
 - Report on collected data

To run reports you must prepare by gathering the necessary data. SMF records are normally dumped from SYS1.MANX and or the SYS1.MANY to a dataset. These records are then converted, in-line, by reporter when running reports. It is possible to convert the data once and then use it for multiple reports.

IDCAMS DCOLLECT data is usually sent to a dataset which is then used as input to the reporter without conversion.

DFSMSHsm reports – Collecting data

Preparation: SMF Dump JCL

MVS System Management Facilities (SMF) (S422-7030)

```
//SMFDUMP JOB ,
/* USE D SMF TO SEE DS STATUS
/* USE D SMF,O TO SEE SMF SETTINGS
/* USE SWITCH SMF TO SWAP THE ACTIVE AND INACTIVE DS
/* NOTE OPTIONS = DUMP | CLEAR | ALL
/* ONLY INACTIVE DS CAN BE CLEARED
/* DEFAULT ALL = DUMP AND CLEAR
//DUMPSMF EXEC PGM=IFASMFDP,REGION=512K
//INDD0 DD DSN=SYS1.MANX,DISP=SHR
//INDD1 DD DSN=SYS1.MANY,DISP=SHR
//DUMPOUT DD DSN=DFHSM.EXTRACT,UNIT=SYSALLDA,
// DISP=(NEW,CATLG),SPACE=(CYL,(50,5),RLSE)
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
INDD(INDD0,OPTIONS(DUMP))
INDD(INDD1,OPTIONS(DUMP))
OUTDD(DUMPOUT,TYPE(XXX))
/*
```

This page provides a sample JCL for extracting DFSMSHsm records from SMF. The OUTDD statement will need to be updated with the DFSMSHsm SETSYS SMF type to ensure that the correct records are extracted.

DFSMSHsm reports – Collecting data

Preparation: DCOLLECT JCL

DFSMS Access Method Services for Catalogs (BC26-7394)

```
//DCOLLECT JOB ,
//STEP1 EXEC PGM=IDCAMS
//OUTDS DD DSN=DFHSM.DCOLLECT.DATA,DISP=(NEW,CATLG),
// UNIT=SYSALLDA,
// DCB=(LRECL=644,BLKSIZE=0,RECFM=VB),SPACE=(CYL,(50,2)),
// AVGREC=K
//SYSPRINT DD SYSOUT=A
//MCDS DD DSN=DFHSM.MCDS,DISP=SHR
//BCDS DD DSN=DFHSM.BCDS,DISP=SHR
//SYSIN DD *
DCOLLECT -
OUTFILE(OUTDS) -
MIGRATEDATA -
BACKUPDATA -
CAPD
/*
```

This page provides sample JCL for extracting DFSMSHsm data from the CDS files. See DFSMS Access Methods Services for Catalogs for more information about using IDCAMS DCOLLECT.

DFSMSHsm reports – Reporter setup

New ISMF Panel Item: Select item G

```

Panel  Help
-----
                ISMF PRIMARY OPTION MENU - z/OS DFSMS V1 R10
Selection or Command ==>

0  ISMF Profile           - Specify ISMF User Profile
1  Data Set               - Perform Functions Against Data Sets
2  Volume                 - Perform Functions Against Volumes
3  Management Class      - Specify Data Set Backup and Migration Criteria
4  Data Class             - Specify Data Set Allocation Parameters
5  Storage Class         - Specify Data Set Performance and Availability
6  Storage Group         - Specify Volume Names and Free Space Thresholds
7  Automatic Class Selection - Specify ACS Routines and Test Criteria
8  Control Data Set      - Specify System Names and Default Criteria
9  Aggregate Group       - Specify Data Set Recovery Parameters
10 Library Management    - Specify Library and Drive Configurations
11 Enhanced ACS Management - Perform Enhanced Test/Configuration Management
C  Data Collection       - Process Data Collection Function
G  Report Generation - Create Storage Management Reports
L  List                  - Perform Functions Against Saved ISMF Lists
P  Copy Pool             - Specify Pool Storage Groups for Copies
R  Removable Media Manager - Perform Functions Against Removable Media
X  Exit                  - Terminate ISMF
Use HELP Command for Help; Use END Command or X to Exit.

```

ISMF Primary panel has a new option in R1.10 G: Report Generation. Select this option to enter the reporter panels.

DFSMSHsm reports – Reporter setup

Report Generator Panel – 0 Setup

Panel Help

DFSMSrmm Report Generator

Option ==>

- 0 OPTIONS - Specify dialog options and defaults
- 1 REPORT - Work with reports
- 2 REPORT TYPE - Work with report types
- 3 REPORTING TOOL - Work with reporting tools
- X EXIT - Exit DFSMSrmm dialog

Enter selected option or END command. For more info., enter HELP or PF1.

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Select zero, options, to set up report generator.

DFSMShsm reports – Reporter setup

Options panel

```
Panel  Help
                                     DFSMSrmm Dialog Options Menu
Option ==>

1  USER      - Specify processing options
2  SORT      - Specify list sort options
3  REPORT    - Specify report options

Enter selected option or END command. For more info., enter HELP or PF1.
```

The options menu has 3 selections.

Option 1 Sets up basics and must be done by all users at least one first time.

Option 2 Specifies sort information for RMM report users.

Option 3 Specifies Report options.

DFSMSHsm reports – Reporter setup

User options panel

```

Panel  Help

                                DFSMSrmm Dialog User Options

Command ==>

Date format . . . . . JULIAN          ( American, European, Iso or Julian )
Time zone . . . . . LOCAL            ( zone offsetHH:MM:SS )
Confirm deletes . . . YES            ( Yes or No )
Processing option . . F              F - Foreground, B - Background
Eject option . . . . C              C - Convenience, B - Bulk
Variable reuse . . . . Y            Y - Yes, N - No

Job statement information:-
====> //HSMREPT JOB ,CLASS=A,MSGCLASS=H.MSGLEVEL(1,1)
====> /**
====> /**
====> /**

Enter END command to save changes, or CANCEL to end without saving.

```

On the USER options panel, at a minimum add a JCL job card in the "Job statement information" field. This will be used by all jobs created and submitted by the report generator. If you do not provide the job card, reporter generator will provide a default job card when reports are generated.

DFSMSHsm reports – Reporter setup

Sort options panel -- this panel applies to RMM specific reports

Panel Help

DFSMSrmm Dialog Sort Options Menu

Option ==>

- 1 DATA SET - Specify data set list sort options
- 2 PRODUCT - Specify product list sort options
- 3 RACK - Specify rack list sort options
- 4 VOLUME - Specify volume list sort options
- 5 VRS - Specify vital record specifications list sort options

Enter selected option or END command. For more info., enter HELP or PF1.

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The sort panel is included for reference. It can be bypassed when creating reports for DFSMSHsm. It is used when generating reports for DFSMSrmm. Running reports on DFSMSrmm is similar to running reports for DFSMSHsm but is not covered in this presentation.

DFSMSHsm reports – Reporter setup

Report options panel

```
Panel  Help

                                DFSMSrmm Report Options

Command ===>

Report definition libraries:
  User . . . . . 'USER001.REPORT.LIB'
  Installation . . . . . 'TEAM001.REPORT.LIB'
  Product . . . . . 'SYS1.SAMPLIB'

User report JCL library . . 'USER001.REPORT.JCL'

DFSMSrmm allocates user libraries if they do not exist.
```

On the Report Options panel, add the names of libraries containing reports and the target datasets for the JCL. The dataset name entries, except for installation, will be filled in by reporter and allocated if they do not exist. Installation reports are those created locally and provided to the user.

Section

DFSMSHsm reports – Running reports

Reports – now that you have done all the preparation and setup, it is time to run some reports.

DFSMSHsm reports – Running reports

Report Generator Panel - 1

Panel Help

DFSMSrmm Report Generator

Option ==>

- 0 OPTIONS - Specify dialog options and defaults
- 1 **REPORT** - **Work with reports**
- 2 REPORT TYPE - Work with report types
- 3 REPORTING TOOL - Work with reporting tools
- X EXIT - Exit DFSMSrmm dialog

Enter selected option or END command. For more info.,
enter HELP or PFl.

The main feature is 1, Report, where sample reports can be viewed, modified, and created.

DFSMSHsm reports – Running reports

Reports supplied by DFSMSHsm

```

Panel  Help
                                DFSMSrmm Report Definitions          Row 1 to 31 of 40
Command ==>                                Scroll ==> CSR
The following line commands are valid: A,D,G,J,L,M,N,S, and T
S Name      Report title                Report type                User id
-----
ARCGAB01    ABARS ABACKUP Statistics              DFSMSHsm ABARS Report     HSM
ARCGAR01    ABARS ARECOVER Statistics             DFSMSHsm ABARS Report     HSM
ARCGDB01    DCOLLECT BACKUP DATA                 DFSMSHsm DCOLLECT BACKUP  HSM
ARCGDD01    DCOLLECT DASD CAPACITY PLANNIN        DFSMSHsm DCOLLECT DASD CAP HSM
ARCGDM01    DCOLLECT MIGRATION DATA              DFSMSHsm DCOLLECT MIGRATION HSM
ARCGDT01    DCOLLECT TAPE CAPACITY PLANNIN        DFSMSHsm DCOLLECT TAPE CAP HSM
ARCGS001    Statistics for DFSMSHsm                DFSMSHsm FSR-SMF Records  HSM
ARCGS002    Statistics for Backup                   DFSMSHsm FSR-SMF Records  HSM
ARCGS003    Statistics for Migration                 DFSMSHsm FSR-SMF Records  HSM
ARCGS004    Statistics for Recall                   DFSMSHsm FSR-SMF Records  HSM
ARCGS005    Statistics for Recovery                  DFSMSHsm FSR-SMF Records  HSM
ARCGS006    Statistics for Volume Dump              DFSMSHsm FSR-SMF Records  HSM
ARCGS007    Statistics for Restore from Du          DFSMSHsm FSR-SMF Records  HSM
ARCGS008    Statistics for FRBACKUP                 DFSMSHsm FSR-SMF Records  HSM
ARCGS009    Statistics for FRRecover                 DFSMSHsm FSR-SMF Records  HSM
ARCGS010    DFSMSHsm Thrashing Report              DFSMSHsm FSR-SMF Records  HSM
  
```

Notice there are two WWFSR reports for ABARS, four DCOLLECT reports, and ten FSR reports provided. These can be used as the foundation for custom user reports or run as is. ARCGS004 was modified slightly to create ARCGC010, which demonstrates how easily new reports can be created.

Enter S by any report to view or modify the contents.

DFSMSHsm reports – Running reports

Report Definition Panel

```

Panel  Help

                                DFSMSrmm Report Definition - ARCGS001      Row 1 to 26 of 80
Command ===>                                Scroll ===> CSR
Report title . . . Statistics for DFSMSHsm
Report footer . . .
Reporting tool . : ICETOOL                                Report width: 209

Use END to save changes or CANCEL
Select a field name with S to specify a field selection criterion

S CO SO  Field name           Column header text           CW  Len Typ
-----
G  1A FSR2HOST                HOSTID                        6   2   C
1  2A FSR2TYPE                FUNC (hex)                   10  1   B
*  2  3A FSR2DATR              DATE                         8   8   C
3  4A FSR2DSN                 DSN OR CP NAME              44  44   C
4      FSR2FVOL                SOURCE                        6   6   C

```

After entering S on the previous panel by a given report, the report definition panel is displayed.

This screen shows the fields selected for this report in the CO column. This column also sets the order displayed in the report.

Additionally, a field may create a grouping as shown here by entering 'G' under CO . Each data group will be separated by the unique value found in a 'G' field.

The search criteria column S indicates fields which must have a given value before the record is selected. The next slide has more on defining search criteria.

Finally the sorted order is defined under SO.

As already mention, these reports may be changed to create custom reports.

Note the macro ARCFSR2 has 80 fields but only 15 are used for this report.

DFSMSHsm reports – Running reports

Report Criteria panel

```

Panel  Help

                                DFSMSrmm Report Criteria - ARCGS001          Row 1 to 2 of 2
Command ==>                                Scroll ==> CSR

Report title : Statistics for DFSMSHsm

Use END to save changes or CANCEL
The following line commands are valid: B,D,N,P,R,T, and I (for details)
Comparison operators: EQ =, NE <>, GT >, GE >=, LT <, LE <=, IN, BW, SE, SN
Conjunction: AND, OR, AND(, )AND

S Field name           Op Compare value(s)                               Conj Len Typ
-----
FSR2DATR              BW &TODAY - 7 Days,&TODAY                               8  C
FSR2RTY               EQ X'FF'                                               1  B

```

After entering S on the previous panel in the “S” column by any field, the report criteria panel is displayed.

The search criteria, in this case, is SMF records of type x'FF' (which may be different for your DFSMSHsm), and records created between today and 7 days ago. This will then create a report which includes all DFSMSHsm records created in the last week. You will now exit this panel and the previous panel, so you can return to the Report Definitions Panel to continue creating a report.

DFSMSHsm reports – Running reports

Report Generation panel - G

```

Panel  Help
                                DFSMSrmm Report Generation - ARCGS001
Command ==>
Enter or change the skeleton variables for the generated JCL:
Input data set . . . . 'DFHSM.EXTRACT.REFORMAT'

Date format . . . . . YYYYDDD
(American, European, Iso, Julian, or free form)
Required if you use variable dates (&TODAY) in your selection criteria.

Create report data . . Y (Y/N)
Choose Y if you want an extract step included into your generated JCL.

Additional skeleton variables, if an extract step is included:
Skeleton Variable_1 . . X'FF'
Skeleton Variable_2 . . DFHSM.EXTRACT
Skeleton Variable_3 . .
The skeleton selection depends on the reporting macro . . . : ARCFSR2
                                and macro keyword . . . :
Enter END command to start the report generation or CANCEL

```

Having selected reporting data and selection criteria, you will enter “G” on the Report Definitions panel which causes the report generation panel to be displayed. This panel is key in generating the correct jcl for your report.

Input data set is the source of records for the report and must be made up of ARCFSR2, or ARCWFSR2 records previously converted, or ARCUTILP records created by DCOLLECT.

Date format YYYYDDD is specific to HSM FSR and WWFSR records and must be added.

Create report data: When ‘Y’ tells Reporter that Skeleton_Variable_2 has source data ARCFSR or ARCWWFSR that must be converted to ARCFSR2 or ARCWFSR2. If this is true, the Skeleton_Variable_1 must provide the SMF record type as defined in DFSMSHsm command SETSYS SMF. This step will create the temporary dataset named in Input data set. This can be changed to a non temporary dataset by modifying the generated JCL. Using a non temporary dataset allows preserving input dataset for other reports and avoiding the conversion step.

Create report data: When ‘N’ tells Reporter to use the dataset named in ‘Input data set’ without conversion. For example DCOLLECT data does not need conversion.

Once this page is completed you will return to the report definitions panel to enter a command to view the generated JCL.

DFSMSHsm reports – Running reports

Report Definitions panel – J (1)

```

File Edit Edit_Settings Menu Utilities Compilers Test Help
EDIT      USER001.REPORT.JCL(ARCGS001) - 01.01      Columns 00001 00080
Command ==>                               Scroll ==> CSR
***** ***** Top of Data *****
000001 //HSMREPT JOB ,CLASS=A,MSGCLASS=H.MSGLEVEL(1,1)
000002 /**
000003 //*****
000004 /*** SKELETON MEMBER EDGSGICE
000005 /*** TAILORED BY THE RMM REPORT GENERATOR
000006 //*****
000007 //ARCFSRC EXEC PGM=SORT
000008 //*****
. . .
000017 //*****
000018 /**
000019 /*** FUNCTION - THIS JCL CONVERTS ARCFSR SMF RECORDS TO ARCFSR2 *
000020 /** RECORDS TO BE USED AS INPUT FOR REPORT GENERATOR *
000021 /**
000022 /*** METHOD OF ACCESS *
000023 /** - INCLUDED AS AN EXTRACT STEP WHEN GENERATING REPORTS *
000024 /**
000025 /*** Change History: *
000026 /**
000027 /** $P0=HSMRPR,Z1A,072307,THMB: NEW CONVERSION SKELETON @PRA*

```

On the report definitions panel we entered J by a given report, and the generated JCL is opened for edit.

Notice that the report JCL has the job card we defined previously. The conversion JCL will also be visible if it was selected at generation time.

DFSMShsm reports – Running reports

Report Definitions Panel – J (continued 2)

```

File Edit Edit_Settings Menu Utilities Compilers Test Help
EDIT      USER001.REPORT.JCL(ARCGS001) - 01.01          Columns 00001 00080
Command ==>                                         Scroll ==> CSR
000032 //SYSPRINT DD  SYSOUT=*
000033 //SORTIN  DD  DISP=SHR,
000034 //          DSN=DFHSM.EXTRACT
000035 //SORTOUT DD  DISP=(NEW,PASS),
000036 //          UNIT=SYSALLDA,
000037 //          LIKE=DFHSM.EXTRACT,
000038 //          DSN=DFHSM.EXTRACT.REFORMAT
000039 //MSGOUT1 DD  SYSOUT=*
000040 //SYSOUT  DD  SYSOUT=*
000041 //SYSIN   DD  *
000042 OPTION VLSHRT,VLSCMP
000043 INCLUDE COND=((6,1,BI,EQ,X'FF'), DFSMSHSM FSR
000044             AND,(43,1,CH,NE,X'0F'),
000045             AND,(43,1,CH,NE,X'10'))
000046 RECORD TYPE=V
000047 INREC IFTHEN=(WHEN=INIT,
000048             BUILD=(1,18, 1 FM 1 x 18 - CH FSRHDR
000049             19,8,      19 FM 19 x 8 - CH FSRJBN

```

Scrolling through the JCL you can see that the datasets named as Input data set and Skeleton_Variable_2 previously are source and target ds of the conversion part of the JCL.

Also note the 'DISP=(NEW,PASS)' can be changed here to create a non temporary DS, if you want to save the converted output.

Finally, note that the include statement has the x'value' from Skeleton_Variable_1 which should match your HSM SETSYS SMF.

DFSMShsm reports – Running reports

Report Definitions panel – J (continued 3)

```

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT      USER001.REPORT.JCL(ARCGS001) - 01.01          Columns 00001 00080
Command ==>>>                                         Scroll ==>> CSR
000179 /*******
000180 /*** DATE CALCULATION STEP
000181 /*** COMPARE VALUES CONTAINING ARE CALCULATED BASED ON RUN DATE
000182 /*******
000183 //DATECONV EXEC PGM=IKJEFT01,PARM='$EDGRGDAT'
000184 //SYSPROC DD DISP=SHR,DSN=SYS1.SEDGEXEL
000185 //SYSPRINT DD SYSOUT=*
000186 //DATEFMT DD *
000187 DATE PATTERN:YYYYDDDD
000188 //INCLIN DD *
000189 OPTION VLSHRT,VLSCMP
000190 INCLUDE COND=(((161,8,CH,GE,C'&TODAY-007D'),
000191             AND,
000192             (161,8,CH,LE,C'&TODAY-000D')),
000193             AND,
000194             (6,1,CH,EQ,X'FF'))
000195 INREC FIELDS=(1,4,
000196             369,2,C' ',

```

Continuing to Scroll through the JCL, note the date form in the sample report and the selection criteria are part of the generated JCL.

DFSMSHsm reports – Running reports

Report Definitions panel – J (continued 4)

```

File Edit Edit_Settings Menu Utilities Compilers Test Help
EDIT      USER001.REPORT.JCL(ARCGS001) - 01.01          Columns 00001 00080
Command ==>                                         Scroll ==> CSR
000240 //WRITE1 EXEC PGM=ICETOOL,REGION=0M
000241 //SYSPRINT DD SYSOUT=*
000242 //TOOLMSG DD SYSOUT=*
000243 //DFSMSG DD SYSOUT=*
000244 //INDD DD DSN=DFHSM.EXTRACT.REFORMAT,
000245 // DISP=SHR
000246 //OUTDD DD SYSOUT=*
000247 //TEMP DD UNIT=SYSALLDA,SPACE=(TRK,(5,25))
000248 //TOOLIN DD *
000249 SORT FROM(INDD) TO(TEMP) USING(INCL)
000250 DISPLAY FROM(TEMP) LIST(OUTDD) -
000251 TITLE('Statistics for DFSMSHsm') -
000252 PAGE DATE(4MD/) TIME -
000253 HEADER('FUNC(hex)') ON(8,1,HEX) -
000254 HEADER('DATE') ON(10,8,CH) -
000255 HEADER('DSN OR CP NAME') ON(19,44,CH) -
000256 HEADER('SOURCE') ON(64,6,CH) -
000257 HEADER('TARGET') ON(71,6,CH) -

```

Finally as you Scroll through the JCL you see the Input data set, whether created as a temporary dataset by the conversion JCL or is a pre-existing dataset, is used by the reporter when extracting data for the report. The OUTDD card can optionally be changed to a dataset to save the report. For further changes see the DFSMSrmm Reporting. When satisfied with the JCL, submit the job and view the output. A sample report output is not provided in this presentation, but is left as an exercise.

DFSMSHsm reports – Running reports

Summary

- Running report
 - ▶ Issue SUB from J – Edit and manually submit
 - ▶ Issue SUB from RG JCL library
- View report
 - ▶ SDSF
 - ▶ Output DS

In summary, the report can be run by issuing SUB after the line command “J” displays the JCL in edit, or the JCL can be submitted from the reporter JCL library as defined in the setup panels. The report can be viewed in the output of the JCL or in an output dataset if one was defined.

Section

Creating a custom report

Now that you have run a report, how do you change a report to create a custom user report?

DFSMSHsm reports – Custom report

Creating a DS Thrashing Report from Recall report

```

Panel Help
          DFSMSrmm Report Definition - ARCGS004   Row 1 to 26 of 80
Command ==>                                     Scroll ==> CSR

Report title . . . Statistics for Recall
Report footer . .
Reporting tool . : ICETOOL                       Report width: 200
Use END to save changes or CANCEL
Select a field name with S to specify a field selection criterion

S CO SO  Field name          Column header text          CW Len Typ
-----
*  1  1A FSR2DATR           DATE                        8  8  C
   2      FSR2TIMR          TIME REQ                   8  4  B
   3  3A FSR2TIME          TIME COMP                   9  4  B
   4  2A FSR2DSN           DSN                        44 44  C
s  5      FSR2AGE           AGE                         3  2  B
   6      FSR2TVOL          TARGET                      6  6  C
   7      FSR2BYTR          KB READ                     7  4  N
   8      FSR2BYTW          KB WRITE                    8  4  N

```

ARCGS010, a thrashing report, was created from ARCGS004 by adding a new selection criteria. Report definition ARCGS004 was selected, and a new criteria added by entering line command "S" by FSR2AGE.

DFSMSHsm reports – Custom report

Creating a DS Thrashing Report from the supplied Recall report

```

Panel Help
DFSMSrmm Report Criteria - ARCGS004 Row 1 to 4 of 4
Command ==> Scroll ==> CSR

Report title : Statistics for Recall

Use END to save changes or CANCEL
The following line commands are valid: B,D,N,P,R,T, and I (for details)
Comparison operators: EQ =, NE <>, GT >, GE >=, LT <, LE <=, IN, BW, SE, SN
Conjunction: AND, OR, AND(, )AND

S Field name      Op Compare value(s)      Conj Len Typ
-----
FSR2DATR          BW &TODAY - 7 Days,&TODAY  AND(  8  C
FSR2TYPE          EQ X'04'                  OR    1  B
FSR2TYPE          EQ X'05'                  )AND  1  B
FSR2AGE           LE X'0002'                 2    B
  
```

The criteria panel opens where you add the thrashing criteria, in this case datasets recalled two days or less after migrate. So any recall occurring within two days of migration will be included in the report. Datasets will show up in the report multiple times, if recalled multiple times.

DFSMSHsm reports – Custom report

Summary

- Reports can be run as provided
 - ▶ Date criteria may need adjustment
 - ▶ Reports are provided as a foundation for creating user defined reports
 - ▶ DCOLLECT reports require IDCAMS
 - DCOLLECT be run first to generate source data
 - ▶ HSM Requires FSR and WWFSR (SMF) records be converted before use

Reports can be run as provided, but date criteria most likely will need adjustment. Reports are provided as a foundation for creating user defined reports. DCOLLECT reports require IDCAMS DCOLLECT be run first to generate source data and HSM Requires FSR and WWFSR records be converted before use, but the conversion is easily done inline.

Section

Understanding report types

Another area worth mentioning is Report Types. Report types are the foundation or the outline of the records used in creating reports.

DFSMSHsm reports – Report types

Reports types supplied by DFSMSHsm

<u>Name</u>	<u>Description</u>
ARCGWFSR	DFSMSHsm ABARS Report
ARCGDBCK	DFSMSHsm DCOLLECT BACKUP
ARCGDDSD	DFSMSHsm DCOLLECT DASD CAP
ARCGDMIG	DFSMSHsm DCOLLECT MIGRATION
ARCGDTAP	DFSMSHsm DCOLLECT TAPE CAP
ARCGFSR2	DFSMSHsm FSR-SMF Records

Report Types provided by DFSMSHsm as the outline of for creating reports are

ARCGWFSR DFSMSHsm ABARS Report
 ARCGDBCK DFSMSHsm DCOLLECT BACKUP
 ARCGDDSD DFSMSHsm DCOLLECT DASD CAPACITY
 ARCGDMIG DFSMSHsm DCOLLECT MIGRATION
 ARCGDTAP DFSMSHsm DCOLLECT TAPE CAPACITY
 ARCGFSR2 DFSMSHsm FSR-SMF Records

DFSMSHsm reports – Report types

Report Generator Panel - 2

```
Panel  Help
                                     DFSMSrmm Report Generator
Option ==>

0  OPTIONS          - Specify dialog options and defaults
1  REPORT           - Work with reports
2  REPORT TYPE     - Work with report types
3  REPORTING TOOL  - Work with reporting tools
X  EXIT            - Exit DFSMSrmm dialog
Enter selected option or END command. For more info., enter HELP or PF1.

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```

Report Type has predefined types based on the macros supplied in SYS1.MACLIB so that you can build new and different reports.

DFSMShsm reports – Report types

Report Types Panel

```

Panel Help
DFSMSrmm Report Types Row 2 to 7 of 32
Command ==> Scroll ==> CSR

The following line commands are valid: A,C,D,L,M,R, and S

S Name Description
-----
ARCGWFSR DFSMSHsm ABARS Report
Macro library . . : 'SYS1.MACLIB'
Applicable macros : ARCWFSR2
Input data set. . : 'DFHSM.EXTRACT.ABARS.REFORMAT'
ARCGDBCK DFSMSHsm DCOLLECT BACKUP
Macro library . . : 'SYS1.MACLIB'
Applicable macros : ARCUTILP
Input data set. . : 'DFHSM.DCOLLECT.DATA'
ARCGDSD DFSMSHsm DCOLLECT DASD CAP
Macro library . . : 'SYS1.MACLIB'
Applicable macros : ARCUTILP
Input data set. . : 'DFHSM.DCOLLECT.DATA'
ARCGDMIG DFSMSHsm DCOLLECT MIGRATION
Macro library . . : 'SYS1.MACLIB'
Applicable macros : ARCUTILP
Input data set. . : 'DFHSM.DCOLLECT.DATA'
ARCGDTAP DFSMSHsm DCOLLECT TAPE CAP
Macro library . . : 'SYS1.MACLIB'
Applicable macros : ARCUTILP
Input data set. . : 'DFHSM.DCOLLECT.DATA'
ARCGFSR2 DFSMSHsm FSR-SMF Records
Macro library . . : 'SYS1.MACLIB'
Applicable macros : ARCFSR2
Input data set. . : 'DFHSM.EXTRACT.REFORMAT'

```

Report types supplied by HSM should be sufficient for all reports, but users can modify or add their own. HSM has supplied types for all currently provided macros. Line commands M and L are new to R1.10 and allow viewing the source macros and the results of assembly for troubleshooting.

DFSMSHsm reports – Session summary

- Reports can run using the supplied examples use generate, edit, submit
- Supplied examples can be modified to create new reports
- Entirely new reports can be created based on the supplied report types

Finally in summary: Reports are run using the supplied examples by using generate, edit, and submit. Supplied examples can be modified to create new reports for your installation, and entirely new reports can be created based on the supplied report types

DFSMSHsm reports – Appendix

DFSMSrmm Reporter information can be found in
DFSMSrmm Reporting - SC26-7406-08

Details on DFSMSHsm use of Reporter can be found in
DFSMSHsm Installation and Customization Guide – SC35-0418-08

DCOLLECT information can be found in
DFSMS Access Methods Services for Catalogs – SC26-7394-08

DFSMSrmm Reporter information can be found in DFSMSrmm Reporting - SC26-7406-08

Details on DFSMSHsm use of Reporter can be found in DFSMSHsm Installation and Customization Guide – SC35-0418-08

IDCAMS DCOLLECT information can be found in DFSMS Access Methods Services for Catalogs – SC26-7394-08

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