



Data Facility
Hierarchical Storage Manager
Version 2 Release 5.0

LY35-0103-0

Diagnosis Reference Volume 3





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Hierarchical Storage Manager
Version 2 Release 5.0
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First Edition (December 1989)

This is a major revision of LY35-0080-1, which is now obsolete. Significant changes are summarized under "Summary of Amendments." This edition applies to Version 2, Release 5, Modification Level 0 of the Data Facility Hierarchical Storage Manager, Licensed Program 5665-329, and all subsequent releases and modification levels until specified otherwise in new editions or technical newsletters.

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Preface

This publication is a continuation of *Data Facility Hierarchical Storage Manager Version 2 Release 5.0 Diagnosis Reference Volumes 1 and 2* and is intended to help you diagnose Data Facility Hierarchical Storage Manager (DFHSM) problems. It provides overview information as to how DFHSM works and contains some internal product information that is provided as additional guidance for diagnosis. The information in this book must not be used for programming purposes.

Note: Any references to HSM in this book pertain to Version 1 Release 3 or earlier of the Hierarchical Storage Manager.

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Corequisite Books

- *Data Facility Hierarchical Storage Manager Version 2 Release 5.0 Diagnosis Reference Volume 1*, LY35-0101, describes the DFHSM design. This book contains restricted materials of IBM.
- *Data Facility Hierarchical Storage Manager Version 2 Release 5.0 Diagnosis Reference Volume 2*, LY35-0102, describes the DFHSM design. This book contains restricted materials of IBM.
- *Data Facility Hierarchical Storage Manager Version 2 Release 5.0 Diagnosis Reference Volume 4*, LY35-0104, describes the data areas for DFHSM. This book contains restricted materials of IBM.
- *MVS/ESA Library Guide for System Product Version 3*, GC28-1563, which contains a complete listing of the MVS/SP Version 3 publications and their counterparts for the prior version.

Prerequisite Books

You should understand general programming techniques, System/370 and the Data Facility Hierarchical Storage Manager before reading this book. If you need information about DFHSM, read:

- *Data Facility Hierarchical Storage Manager Version 2 Release 5.0 General Information*, GH35-0092, which describes DFHSM.
- *Data Facility Hierarchical Storage Manager Version 2 Release 5.0 System Programmer's Command Reference*, SH35-0083, which describes the space manager, operator, and system programmer commands. It also gives examples of how to use the commands.
- *Data Facility Hierarchical Storage Manager Version 2 Release 5.0 Installation and Customization Guide*, SH35-0084, which describes how to set up and install DFHSM. It contains information about the DFHSM data sets, procedures, and parameter library members, the user exits, the installation verification procedure, and the Version 2.5.0 starter set. It also explains migration and coexistence considerations when you change from HSM Release 3 to DFHSM Version 2.1.0 or when you change from DFHSM Version 2 Release 4.0 to DFHSM Version 2 Release 5.0.
- *Data Facility Hierarchical Storage Manager Version 2 Release 5.0 System Programmer's Guide*, SH35-0085, which describes the functions of DFHSM, the data compaction option, tape considerations, security and protection, using JES3 with DFHSM, and DFHSM procedures.
- *Data Facility Hierarchical Storage Manager Version 2 Release 5.0 User's Guide*, SH35-0093, which describes the DFHSM user tasks, and how to use the DFHSM user commands.

Related Books

The following publications may be helpful to you:

- *Data Facility Hierarchical Storage Manager, Version 2 Release 5.0 Messages*, SH35-0094, which describes the messages issued by DFHSM.
- *Data Facility Hierarchical Storage Manager, Version 2 Release 5.0 Diagnosis Guide*, LY35-0098, which describes how to diagnose failures in DFHSM.
- *Programming Systems General Information*, GC29-2228, which describes how to submit an Authorized Program Analysis Report (APAR).
- *MVS/ESA System Programming Library System Management Facilities (SMF)*, GC28-1819, which describes how to use System Management Facilities.
- *MVS/ESA Basics of Problem Determination*, GC28-1839, and *MVS/ESA Diagnosis System Reference*, LY28-1011, which provides information for use in debugging user or system programs.
- *MVS/ESA Diagnosis Data Areas Volume 1*, LY28-1043, which provides information on MVS data areas.
- *MVS/ESA Diagnosis Data Areas Volume 2*, LY28-1044, which provides information on MVS data areas.
- *MVS/ESA Diagnosis Data Areas Volume 3*, LY28-1045, which provides information on MVS data areas.

- *MVS/ESA Diagnosis Data Areas Volume 4*, LY28-1046, which provides information on MVS data areas.
- *MVS/ESA Diagnosis Data Areas Volume 5*, LY28-1047, which provides information on MVS data areas.
- *MVS/ESA Diagnosis Special Analysis Techniques*, LY28-1840, which provides additional information on debugging programs.
- *MVS/ESA Diagnosis Using Dumps and Traces*, LY28-1843, which provides additional information on debugging programs.
- *MVS/ESA JCL User's Guide*, GC28-1830, which describes how to use dynamic allocation and other job management services.
- *MVS/DFP Version 3 Release 2 Managing VSAM Data Sets*, SC26-4568, which describes the codes in messages about VSAM errors.
- *MVS/DFP Version 3 Release 2 Managing Non-VSAM Data Sets*, SC26-4557, which provides information on data set password protection.
- *MVS/DFP Version 3 Release 2 General Information*, GC26-4552, which provides an overview of MVS/DFP functions.
- *MVS/DFP Version 3 Release 2 Diagnosis Guide*, LY27-9570, which provides information on diagnosing MVS/DFP errors.
- *MVS/DFP Version 3 Release 2 Diagnosis Reference*, LY27-9571, which provides information on diagnosing MVS/DFP errors.
- *Resource Access Control Facility (RACF) General Information Manual*, GC28-0722, which describes how to use RACF.
- *TSO/E Version 2 Programming Guide*, SC28-1874, and *TSO/E Version 2 Programming Services*, SC28-1875, which describe how to write TSO command processors.
- *MVS/DFP Version 3 Release 2 System Programming Reference*, SC26-4567, provides information on return codes and reason codes.
- *MVS/DFP Version 3 Release 2 Macro Instructions for VSAM Data Sets*, SC26-4569, provides information on VSAM return codes.
- *MVS/DFP Version 3 Release 2 Macro Instructions for Non-VSAM Data Sets*, SC26-4558, provides data management macro instructions for QSAM, BSAM, BDAM, BPAM, and ISAM. This publication also provides information on return codes.
- *MVS/DFP Version 3 Release 2 Utilities*, SC26-4559, describes the utility programs available for program, device, and data management.
- *MVS/DFP Version 3 Release 2 Access Method Services for the Integrated Catalog Facility*, SC26-4562, provides information on return codes.
- *MVS/DFP Version 3 Release 2 Access Method Services for VSAM Catalogs*, SC26-4570, provides information on return codes.

SML Books

- *MVS/ESA Storage Management Library Storage Management Reader's Guide*, SC26-4658
- *MVS/ESA Storage Management Library Focus on Storage Management*, SC26-4655
- *MVS/ESA Storage Management Library Leading an Effective Storage Administration Group*, SC26-4658
- *MVS/ESA Storage Management Library Migration Planning Guide*, SC26-4659
- *MVS/ESA Storage Management Library Managing Storage Pools*, SC26-4656
- *MVS/ESA Storage Management Library Managing Data Sets and Objects*, SC26-4657
- *MVS/ESA Storage Management Library Storage Management Documentation Samples*, GV26-1022

DFDSS Books

- *Data Facility Data Set Services General Information*, GC26-4123, introduces you to DFDSS and helps in evaluating its use. It is primarily directed to data processing management.
- *Data Facility Data Set Services User's Guide*, SC26-4388, gives guidance on how to use DFDSS.
- *Data Facility Data Set Services Reference*, SC26-4389, describes DFDSS command syntax.
- *Data Facility Data Set Services Messages*, SC26-4390, lists DFDSS messages.
- *Data Facility Data Set Services Diagnosis Guide*, LY27-9538, tells how to diagnose errors you may encounter while using DFDSS.
- *Data Facility Data Set Services/Interactive Management Facility Installation Planning Guide*, SC26-4129, tells what to consider when planning for and installing DFDSS/ISMF.

Summary of Changes

DFHSM Version 2 Release 5.0

This book contains descriptions of Secondary Address Space flow of control from module to module. All of the modules in this volume are “object code only,” and are not described in detail.

This edition of the DFHSM Diagnosis Reference has been restructured into four volumes.

Information regarding data areas has been moved to *Data Facility Hierarchical Storage Manager Version 2 Release 5.0 Diagnosis Reference Volume 4, LY35-0104*.

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Introduction

DFHSM Aggregate Backup and Recovery Support (ABARS) enables an installation to create backup versions of aggregates that can be recovered later. An aggregate may be any combination of data sets that are to be treated as a separate entity.

Aggregate backup is the process of creating backup versions of the aggregates.

Aggregate recovery is the process of restoring aggregates that were backed up by aggregate backup.

These functions are started by commands.

Aggregate backup and recovery runs as a task in its own dedicated address space, the ABARS secondary address space. Aggregate backup and recovery communicates requests between the DFHSM primary address space and the ABARS secondary address space. Up to 15 secondary address spaces may be used concurrently.

How Aggregate Backup and Recovery Gets and Returns Control

The cross-memory subcomponent acts as the communication interface between the DFHSM primary address space and the ABARS secondary address space utilized by aggregate backup and recovery. The cross-memory subcomponent sends requests for services from the DFHSM primary address space and the secondary address space. Figure 1 illustrates the cross-memory communication link between the primary address space and the secondary address space.

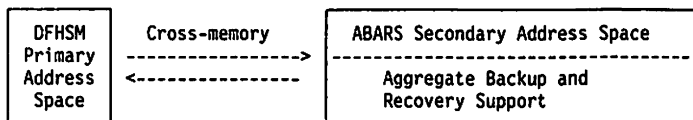


Figure 1. Communications Between DFHSM Primary Address Space and ABARS Secondary Address Space

Aggregate Processing Physical Organization

Aggregate backup and recovery modules are divided into two parts, those that reside in the DFHSM primary address space and those that reside in the ABARS secondary address space. Those that reside in the primary address space are link-edited as part of load module ARCCTL. Those that reside in the secondary address space are link-edited together as the ARCWCTL load module. Both ARCCTL and ARCWCTL are normally stored in SYS1.LINKLIB (or equivalent) when link-edited.

Error Handling

Most of the Aggregate Backup and Recovery Support function runs as a task in its own address space, thereby taking advantage of the ability for error isolation inherent in the address space separation.

Aggregate Backup and Recovery Support uses an ESTAE routine in capturing abnormal ends. When an unrecoverable abnormal end occurs, main storage is released and control is returned to the primary address space. DFHSM maintains normal operation. The ABEND flag is turned on in the Multiple Address Space Interface Parameter List (ARCMASIP). Within ARCMASIP, return codes and reason codes are set to indicate the cause of the failure to the primary address space.

Additional sources of information that may aid in problem determination are:

- An FSR record is created for each issuance of the ABACKUP or ARECOVER commands without the DISPLAY parameter.
- All Aggregate Backup and Recovery messages are listed in the ABARS activity log.
- The DFHSM trace facility is available to aid in problem determination by tracing major path flow and interfaces. Trace data is written by the primary address space to DFHSM's PDA output data sets.
- DUMP provided when ABEND occurs.

ABARS Processing, Primary Address Space Controller

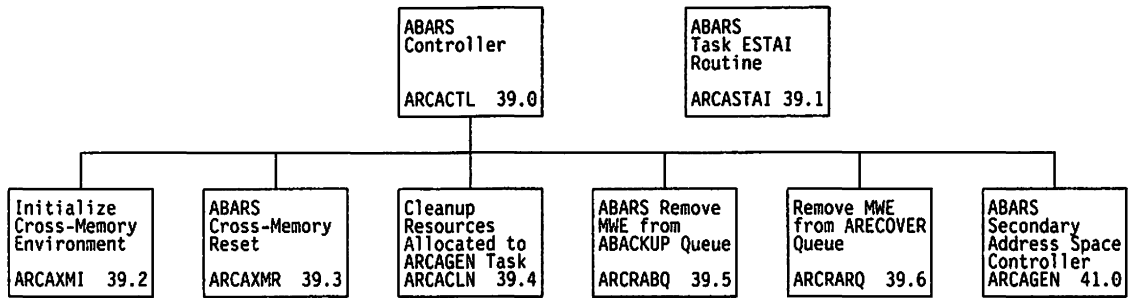


Figure 2. Visual Table of Contents for ABARS Processing, Primary Address Space Controller

Diagram 39.0: ARCACTL - ABARS Controller

Input

- None.

Processing

ARCACTL is the aggregate processing task controller. It is posted when an ABACKUP or ARECOVER request is placed on the respective MWE queue. It will attach up to 15 ARCAGEN subtasks, monitor each subtask, and cleanup subtask resources.

Output

- None.

Diagram 39.2: ARCAXMI - Initialize Cross-Memory Environment

Input

- None.

Processing

ARCAXMI initializes the cross-memory environment and sets the DFHSM address space non-swappable if it is currently set swappable.

Output

- None.

Diagram 39.3: ARCAXMR - ABARS Cross-Memory Reset

Input

- None.

Processing

ARCAXMR resets the cross-memory environment by resetting to the old AX value, freeing the new AX value, and resetting DFHSM swappable if necessary.

Output

- None.

Diagram 39.4: ARACLN - Clean Up Resources Allocated to ARCAGEN Task

Input

- ARCAGEN subtask index.

Processing

ARACLN cleans up allocated resources for subtask.

Output

- None.

Diagram 39.5: ARCRABQ - ABARS Remove MWE From ABACKUP Queue

Input

- Management Work Element (MWE) pointer.

Processing

ARCRABQ removes an MWE from the ABACKUP queue.

Output

- None.

Diagram 39.6: ARCRARQ - Remove MWE from the ARECOVER Queue

Input

- Management Work Element (MWE) pointer.

Processing

ARCRARQ removes an MWE from the ARECOVER queue.

Output

- None.

ABEND Processing, ABARS Primary Address Space

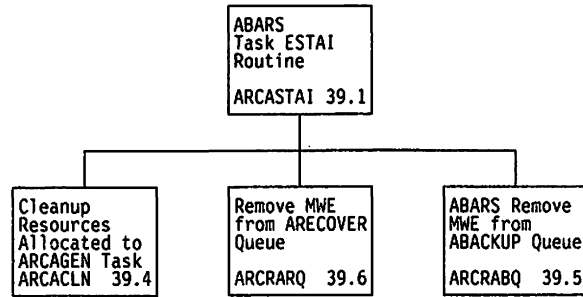


Figure 3. Visual Table of Contents for ABEND Processing, ABARS Primary Address Space

Diagram 39.1: ARCASTAI - ABARS Task ESTAI Routine

Input

- Address of system diagnostic work area (SDWA).

Processing

ARCASTAI provides abnormal end processing for the ARCACTL task and its subtasks.

Output

- None.

ABEND Processing for STOP, DUMP, ABARS Primary Address Space

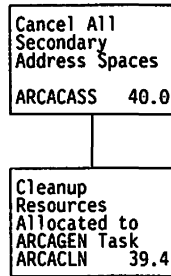


Figure 4. Visual Table of Contents for ABEND Processing for STOP, DUMP, ABARS Primary Address Space

Diagram 40.0: ARCACASS - Cancel all Secondary Address Spaces

Input

None.

Processing

ARCACASS cancels all the secondary address spaces that are running.

Output

None.

ABARS Processing, Secondary Address Space Controller

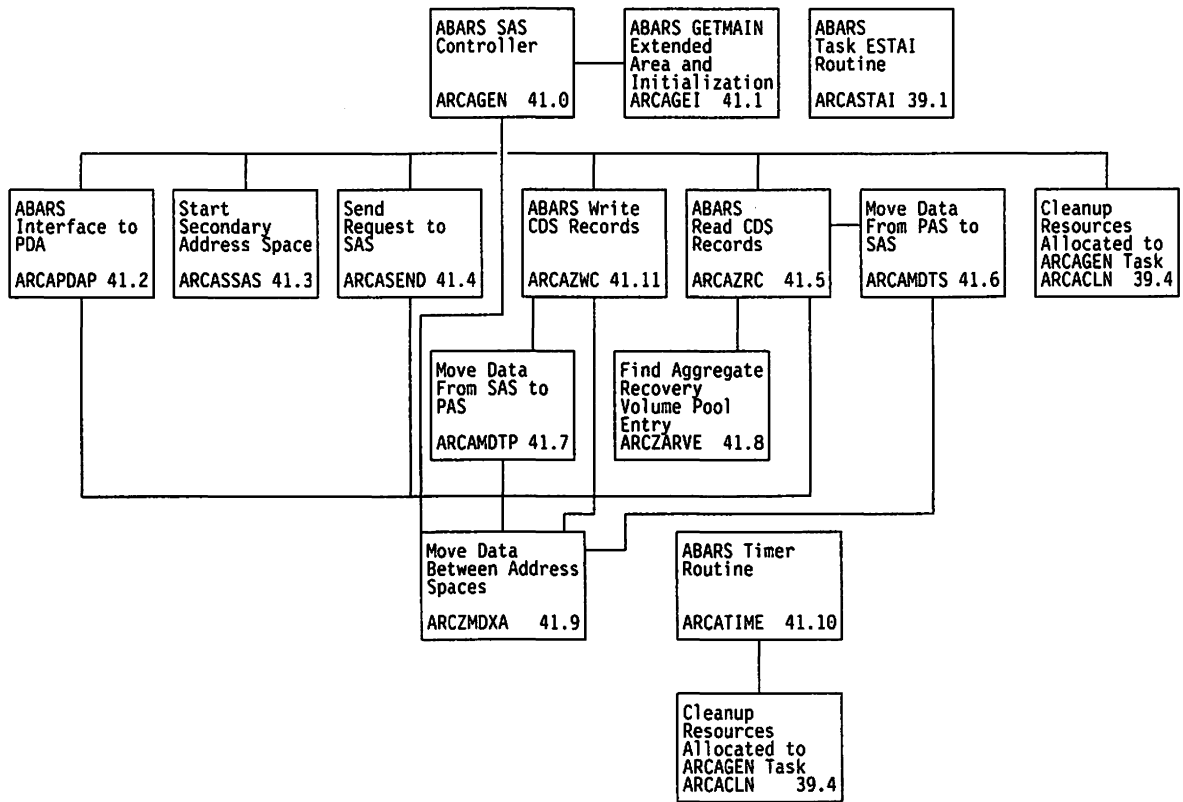


Figure 5. Visual Table of Contents for ABARS Processing, Secondary Address Space Controller

Diagram 41.0: ARCAGEN - ABARS Secondary Address Space Controller

Input

- None.

Processing

ARCAGEN is responsible for starting a secondary address space for either an ABACKUP or ARECOVER request. ARCAGEN handles cross-memory communication with the secondary space and disconnects from the secondary address space when processing completes.

Output

- None.

Diagram 41.1: ARCAGEI - ABARS GETMAIN Extended Area and Initialization

Input

- ARCAGEN subtask index.

Processing

ARCAGEI processes the GETMAIN parameter and initializes storage in the extended area for cross-memory control blocks, parameter lists, and work areas.

Output

- Module return code.

Diagram 41.2: ARCAPDAP - ABARS Interface to Problem Determination Aid

Input

- ARCAGEN subtask index.

Processing

ARCAPDAP obtains PDA trace data from secondary address space, queues it to PDO queue, and POSTS ARCPDO.

Output

- None.

Diagram 41.3: ARCASSAS - Start Secondary Address Space

Input

- ARCAGEN subtask index.

Processing

ARCASSAS starts a secondary address space.

Output

- Module return code.

Diagram 41.4: ARCASEND - Send a Request to the Secondary Address Space

Input

- ARCAGEN subtask index.

Processing

ARCASEND uses the cross-memory interface to send an ABACKUP or ARECOVER request to a secondary address space.

Output

- None.

Diagram 41.5: ARCAZRC - ABARS Read CDS Records

Input

- ARCAGEN subtask index.

Processing

ARCAZRC reads CDS records and uses cross-memory interface to send the data to a secondary address space.

Output

- None.

Diagram 41.6: ARCAMDTS - Move Data From Primary Address Space to Secondary Address Space

Input

- ARCAGEN subtask index.

Processing

ARCAMDTS uses cross-memory interface to move data from the primary address space to a secondary address space.

Output

- None.

Diagram 41.7: ARCAMDTP - Move Data From Secondary Address Space to Primary Address Space

Input

- ARCAGEN subtask index.

Processing

ARCAMDTP uses the cross-memory interface to move data from a secondary address space to the primary address space.

Output

- None.

Diagram 41.8: ARCZARVE - Find Aggregate Recovery Volume Pool Entry

Input

- ARCZARVP Parameter List.

Processing

ARCZARVE searches the ARVE chain for an ARVE that matches the aggregate group name passed in the ARCZARVP Parameter List.

Output

- ARCZARVP Parameter List.

Diagram 41.9: ARCZMDXA - Move Data Between Address Spaces

Input

- ARCZMDPL Parameter List.

Processing

ARCZMDXA uses the cross-memory instruction set to move data between the DFHSM primary address space and its associated secondary address spaces.

Output

- ARCZMDPL Parameter List.

Diagram 41.10: ARCATIME - ABARS Timer Routine

Input

- None.

Processing

ARCATIME establishes a time interval for the secondary address space to start. If the secondary does not start within the required time, ARCATIME cancels the secondary address space and cleans up its resources.

Output

- ARCAGEN subtask ECB is posted, if required.

Diagram 41.11: ARCAZWC - ABARS Write CDS Records

Input

- ARCAGEN subtask index.

Processing

- ARCAZWC processes CDS write requests for the secondary address space.

Output

- None.

ABARS Controller

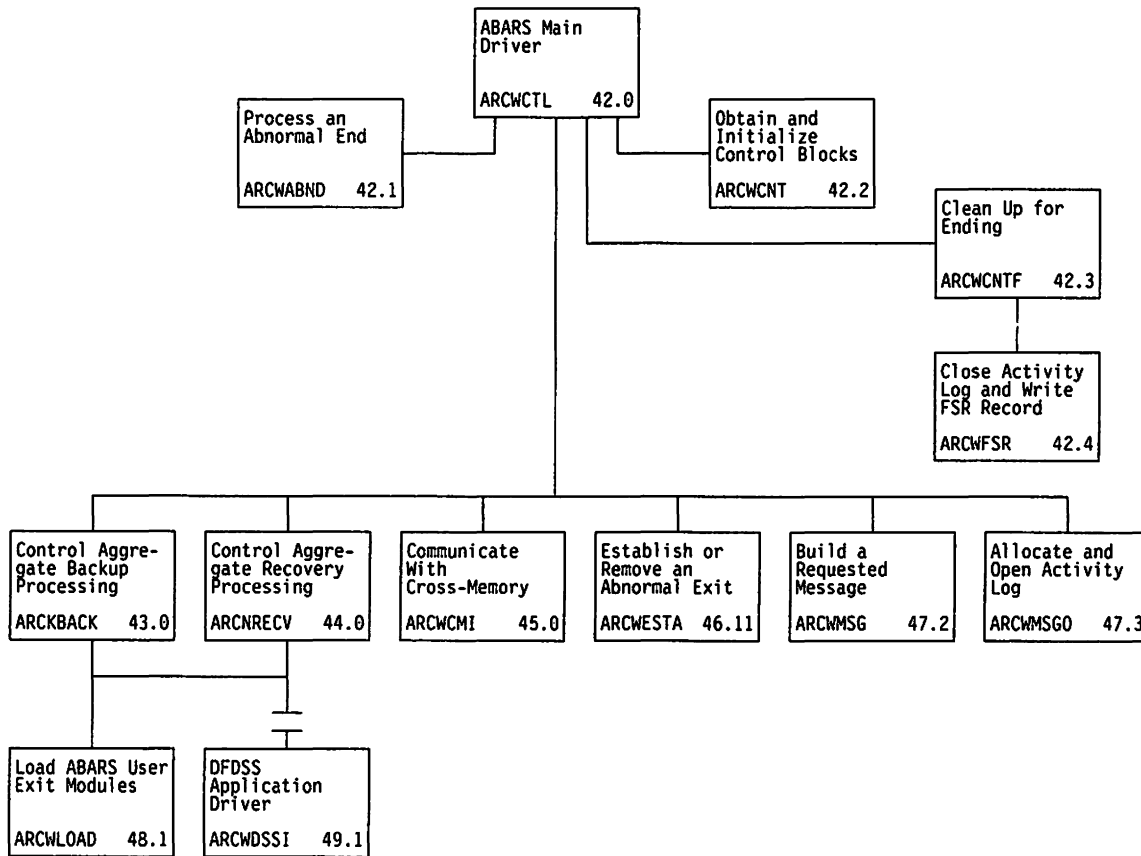


Figure 6. Visual Table of Contents for ABARS Controller

Diagram 42.0: ARCWCTL - ABARS Main Driver

Input

- Command Input Buffer
- Multiple Address Space Control Block (ARCMASCB).

Processing

ARCWCTL acts as the main driver for the aggregate backup and recovery support functions and performs the following:

- Initializes the internal control blocks
- Extracts the token passed by the primary address space
- Communicates the initialized status to the DFHSM primary address space
- Processes the ABACKUP or ARECOVER command
- Communicates the completion status to the DFHSM primary address space.

Output

- None.

Diagram 42.1: ARCWABND - Process an Abnormal End

Input

- ABARS Abnormal End Parameter List (ARCWABNP).

Processing

ARCWABND maps and processes diagnostic data obtained in the ESTAE ABEND exit. Data is passed in the ARCWABNP control block.

Output

- None.

Diagram 42.2: ARCWCNT - Obtain and Initialize Control Blocks

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWCNT obtains and initializes storage for the secondary address space control blocks.

Output

- None.

Diagram 42.3: ARCWCNTF - Clean Up for Ending

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWCNTF frees function-dependent storage areas and writes the FSR. When the address space is ending, ARCWCNTF frees all related address space storage areas and removes the ESTAE exit.

Output

- None.

Diagram 42.4: ARCWFSR - Close Activity Log and Write FSR Record

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWFSR writes the FSR to System Management Facilities (SMF) and closes the secondary address space activity log.

Output

- None.

Aggregate Backup Processing

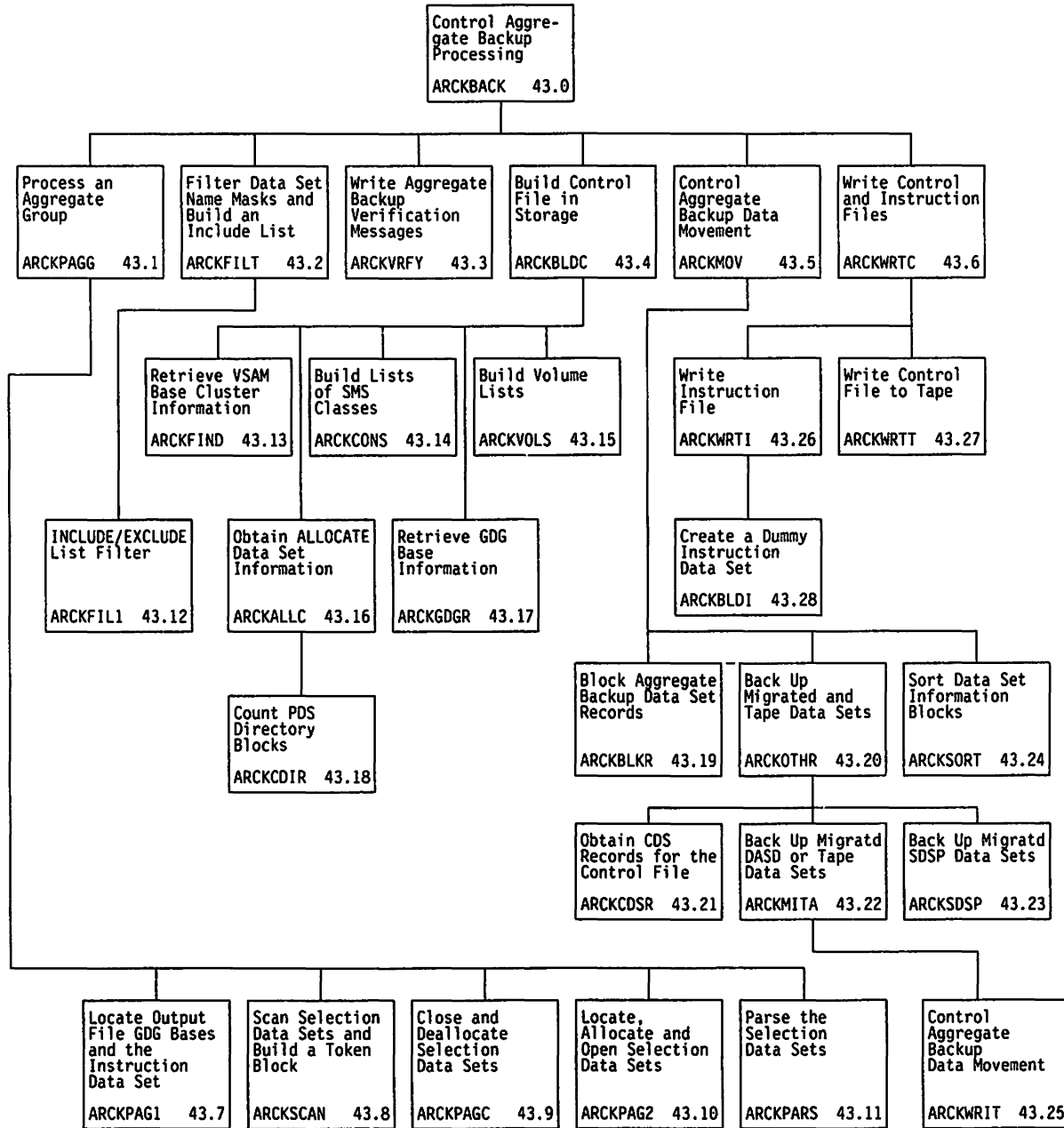


Figure 7. Visual Table of Contents for Aggregate Backup Processing

Diagram 43.0: ARCKBACK - Control Aggregate Backup Processing

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKBACK controls the processing for aggregate backup.

Output

- None.

Diagram 43.1: ARCKPAGG - Process an Aggregate Group

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKPAGG controls Aggregate Group and Selection Data Set processing.

Output

- None.

Diagram 43.2: ARCKFILT - Filter Data Set Name Masks and Build an Include List

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKFILT performs a generic filter locate on the INCLUDE data set name masks. It builds a list of all the data set names on the system that meet the filter criteria.

Output

- None.

Diagram 43.3: ARCKVRFY - Write Aggregate Backup Verification Messages**Input**

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKVRFY writes the list of fully qualified data set names that will be allocated at the recovery sites and will accompany the Aggregate Backup package to be cataloged at the recovery site.

Output

- None.

Diagram 43.4: ARCKBLDC - Build the Control File in Storage**Input**

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKBLDC builds an in-storage control data set made up of linked data set information blocks.

Output

- None.

Diagram 43.5: ARCKMOV - Control Aggregate Backup Data Movement Processing**Input**

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKMOV controls the process of backing up all the data sets identified by the aggregate group.

Output

- None.

Diagram 43.6: ARCKWRTC - Write Control and Instruction Files

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKWRTC writes the control and instruction files to a separate backup tape.

If there is no instruction file named in the aggregate group, a dummy instruction file is created. This is done to ensure the control, data, and instruction file generations are kept synchronized.

Output

- The control and instruction files are written to tape.

Diagram 43.7: ARCKPAG1 - Locate Output File GDG Bases and the Instruction Data Set

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKPAG1 ensures that the GDG base definitions are defined for each of the aggregate backup control, data, and instruction output files. If all the GDG base files are defined, ARCKPAG1 ensures that the instruction data set specified in the aggregate group is defined.

Output

- None.

Diagram 43.8: ARCKSCAN - Scan Selection Data Sets and Build a Token Block

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKSCAN reads each selection data set a character at a time and translates the input into tokens. Data set names and masks are validated.

Output

- None.

Diagram 43.9: ARCKPAGC - Close and Deallocate Selection Data Sets

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKPAGC deallocates and closes any selection data sets previously allocated and opened. The array of selection data set names and optional member names is processed and each one that was successfully allocated and opened is closed and deallocated.

Output

- None.

Diagram 43.10: ARCKPAG2 - Locate, Allocate, and Open Selection Data Sets

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKPAG2 locates, allocates, and opens the selection data sets named in the aggregate group definition.

Output

- None.

Diagram 43.11: ARCKPARS - Parse the Selection Data Sets

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKPARS parses the selection data set token block and adds valid data set names or masks to the appropriate data set name blocks. ARCKPARS creates the INCLUDE, EXCLUDE, ALLOCATE, and ACCOMPANY data set names and data set mask lists.

Output

- None.

Diagram 43.12: ARCKFIL1 - INCLUDE/EXCLUDE List Filter

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKFIL1 filters the output from the generic filter locate based on the INCLUDE/EXCLUDE criteria from all selection data sets and creates one list of all the selected data sets.

Output

- None.

Diagram 43.13: ARCKFIND - Retrieve VSAM Base Cluster Information

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKFIND invokes SVC 26 to retrieve all of the components and associations of a VSAM base cluster including data and index components, alternate indices (AIXs) and their components, and path names.

Output

- None.

Diagram 43.14: ARCKCONS - Build Lists of SMS Classes

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKCONS obtains the SMS classes associated with the data sets to be backed up.

Output

- None.

Diagram 43.15: ARCKVOLS - Build Volume Lists

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKVOLS builds the volume list for the data sets to be backed up.

Output

- None.

Diagram 43.16: ARCKALLC - Obtain ALLOCATE Data Set Information

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKALLC obtains control data set information for ALLOCATE data sets.

Output

- None.

Diagram 43.17: ARCKGDGR - Retrieve GDG Base Information

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKGDGR obtains the GDG base information for Generation Data Group data sets to be backed up.

Output

- None.

Diagram 43.18: ARCKCDIR - Count PDS Directory Blocks

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKCDIR determines the number of directory blocks allocated for a partitioned data set (PDS).

Output

- None.

Diagram 43.19: ARCKBLKR - Block Aggregate Backup Data Set Records

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKBLKR blocks records of a data set to a buffer of 32760 bytes, the maximum buffer size for a BSAM WRITE. ARCKBLKR then writes the buffer to the aggregate backup tape.

Output

- Data set records written to aggregate backup tape.

Diagram 43.20: ARCKOTHR - Back Up Migrated and Tape Data Sets

Input

- Control Vector Table Pointer (ARCWCVT)
- Data Set Information Block (ARCWDSIB).

Processing

ARCKOTHR controls the process of backing up all the data sets that do not get backed up by DFDSS. This includes all migrated and tape data sets.

Output

- None.

Diagram 43.21: ARCKCDSR - Obtain CDS Records for the Control File

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKCDSR obtains migration control data set records for all migrated data sets.

Output

- None.

Diagram 43.22: ARCKMITA - Back Up Migrated DASD or Tape Data Sets

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKMITA backs up migrated DASD data sets and non-migrated tape data sets.

Output

- Data set written to aggregate backup data tape.

Diagram 43.23: ARCKSDSP - Back Up Migrated SDSP Data Sets

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKSDSP backs up migrated DASD data sets that have been migrated to small data set packing (SDSP) data sets.

Output

- Data set written to aggregate backup data tape.

Diagram 43.24: ARCKSORT - Sort Data Set Information Blocks

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKSORT performs a merge sort on data set information blocks using linked lists.

Output

- None.

Diagram 43.25: ARCKWRIT - Control Aggregate Backup Data Movement

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKWRIT controls the data movement process from the specified input data set to the aggregate backup data file.

Output

- None.

Diagram 43.26: ARCKWRTI - Write Instruction File

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKWRTI writes the instruction data set after the control file data set.

Output

- Instruction data set written to tape.

Diagram 43.27: ARCKWRTT - Write Control File to Tape

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKWRTT writes the control file to tape.

Output

- The control file written to tape.

Diagram 43.28: ARCKBLDI - Create a Dummy Instruction Data Set

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCKBLDI builds a “dummy” instruction data set if an instruction data set is not specified in the aggregate group definition.

Output

- Dummy instruction data set.

Aggregate Recovery Processing

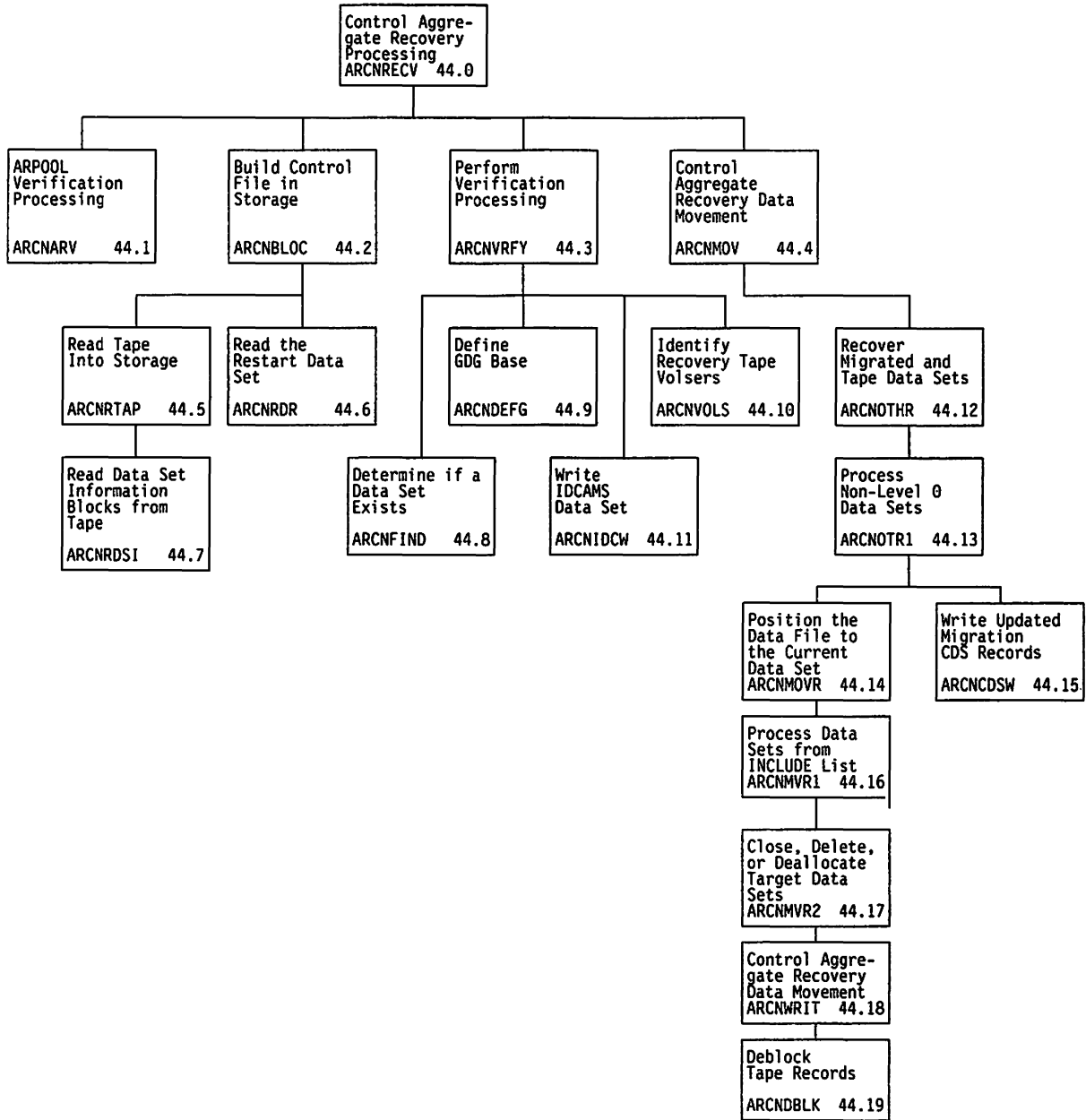


Figure 8. Visual Table of Contents for Aggregate Recovery Processing

Diagram 44.0: ARCNRECV - Control Aggregate Recovery Processing

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCNRECV controls the processing for aggregate recovery.

Output

- None.

Diagram 44.1: ARCNARV - ARPOOL Verification Processing

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCNARV verifies the aggregate recovery volume entry (ARVE).

Output

- None.

Diagram 44.2: ARCNBLDC - Build Control File in Storage

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCNBLDC builds an in-storage control file from the aggregate backup control file data set. If a restart data set exists after the in-storage control file is built, data set entries in the control file for previously recovered data sets are marked as “not to be recovered”.

Output

- None.

Diagram 44.3: ARCNVRFY - Perform Verification Processing

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCNVRFY verifies that aggregate recovery processing can proceed. If any unresolved data set name conflicts exist, an IDCAMS data set is created and aggregate recovery fails.

Output

- IDCAMS data set containing “delete” statements for existing like-named data set conflicts.

Diagram 44.4: ARCNMOV - Control Aggregate Recovery Data Movement

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCNMOV controls the process of recovering data sets. Only data sets that are not in the restart data set are processed.

Output

- None.

Diagram 44.5: ARCNRTAP - Read Tape into Storage

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCNRTP build the in-storage control file from the aggregate backup control file data set.

Output

- None.

Diagram 44.6: ARCNRDR - Read the Restart Data Set**Input**

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCNRDR processes the restart data set.

Output

- None.

Diagram 44.7: ARCNRDSI - Read Data Set Information Blocks from Tape**Input**

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCNRDSI reads data set information blocks from tape and builds entries for the in-storage control file.

Output

- None.

Diagram 44.8: ARCNFIND - Determine if a Data Set Exists**Input**

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCNFIND determines if a data set exists on the system. If the data set exists, ARCNFIND processes the data type of the existing data set to determine what must be deleted to resolve the like-named data set conflict.

Output

- None.

Diagram 44.9: ARCNDEFG - Define GDG Base

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCNDGFG determines if a GDG base exists. If a GDG base exists and REPLACE is not specified, an entry is created to cause a delete command to be written to the IDCAMS data set. If the GDG base does not exist, it will be defined.

Output

- None.

Diagram 44.10: ARCNVOLS - Identify Recovery Tape Volsers

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCNVOLS lists all of the data file and ACCOMPANY volume serial numbers needed to complete an aggregate recovery task. It also lists the SMS data, storage, and management classes that existed at the aggregate backup site for this aggregate recovery.

Output

- None.

Diagram 44.11: ARCNIDCW - Write the IDCAMS Data Set

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCNIDCW creates the IDCAMS data set for the installation's use to resolve like-named data set conflicts.

Output

- Editable IDCAMS data set.

Diagram 44.12: ARCNOTHR - Recover Migrated and Tape Data Sets**Input**

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCNOTHR controls the recovery processing of all data sets that have not been recovered by DFDSS. These include migrated data sets, tape data sets, and ALLOCATE and ACCOMPANY data sets.

Output

- None.

Diagram 44.13: ARCNOTR1 - Process Non-Level 0 Data Sets**Input**

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCNOTR1 recovers data sets that were not recovered by DFDSS. This includes recovering migrated data sets and their associated CDS records, allocating and cataloging ALLOCATE data sets, and cataloging ACCOMPANY data sets.

Output

- None.

Diagram 44.14: ARCNMOVR - Position the Data File to the Current Data Set**Input**

- Control Vector Table Pointer (ARCWCVT).

Processing

ARNMOVR positions the data file to the start of the current data set to be recovered if necessary.

Output

- None.

Diagram 44.15: ARCNCDWS - Write Updated Migration CDS Records

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCNCDSW writes updated records to DFHSM's migration control data set (MCDS). ARCNCDWS passes the modified records to the primary address space. If an error occurs in writing the CDS records, the recovered migrated data set is scratched.

Output

- None.

Diagram 44.16: ARCNMVR1 - Process Data Sets from INCLUDE List

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCNMVR1 recovers migrated and tape data sets. Each data set to be recovered is allocated and opened using information in the data set information blocks.

Tape data sets are recovered to individual tapes preserving the relationships that existed prior to ABACKUP. File sequence numbers are managed accordingly.

Output

- None.

Diagram 44.17: ARCNMVR2 - Close, Delete, or Deallocate Target Data Sets

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCNMVR2 controls data movement for recovering migrated and tape data sets.

Output

- None.

Diagram 44.18: ARCNWRIT - Control Aggregate Recovery Data Movement

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCNWRIT recovers the migrated or tape data set.

Output

- None.

Diagram 44.19: ARCNDBLK - Deblock Tape Records

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCNDDBLK deblocks records read from the data file and constructs the data set record.

Output

- None.

Cross-Memory Interface Routine

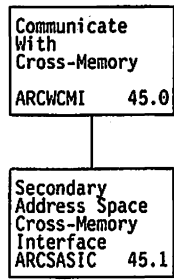


Figure 9. Visual Table of Contents for Cross-Memory Interface Routine

Diagram 45.0: ARCWCMI - Communicate With Cross-Memory

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWCMI sets up the required parameters to invoke the cross-memory routine. The cross-memory routine constructs communication between the DFHSM primary address space and the aggregate backup/aggregate recovery secondary address space. The multiple-address-space-request macro, ARCXMREQ, is issued with the parameter list, ARCMASIP.

Output

- None.

Diagram 45.1: ARCSASIC - Secondary Address Space Cross-Memory Interface

Input

- Control Vector Table pointer to secondary address space MASIP.

Processing

ARCSASIC provides the secondary address with a cross-memory interface to the DFHSM primary address space.

Output

- None.

ABARS System Utilities

Chain Control Blocks ARCWBLDB 46.1	BSAM Interface ARCWBSAM 46.2	Translate SVC 26 Generic Locate Data ARCWCATF 46.3	Issue an SVC 26 to Define a GDG Base ARCWCGDG 46.4	Issue an SVC 26 Catalog Locate ARCWCLOC 46.5
Close Processing for QSAM/BSAM ARCWCLOS 46.6	Issue an SVC 26 to Catalog a Non-VSAM Data Set ARCWCNVM 46.7	Obtain Memory and Initialize Storage ARCWCOR 46.8	SVC 99 Build Interface ARCWDEFD 46.9	Define CSECT for Device Types ARCWDEVT 46.10
Establish or Remove an Abnormal Exit ARCWESTA 46.11	Free Memory or a Subpool ARCWFREM 46.12	Issue an SVC 26 Generic Locate ARCWGLOC 46.13	Issue SVC 26 Locate ARCWLOC 46.14	Enqueue/Dequeue Routine ARCWNQDQ 46.15
Obtain Format 1 DSCB Routine ARCWOBTN 46.16	Open Processing ARCWOPEN 46.17	QSAM Processing ARCWQSAM 46.18	Obtain the Volume List and SMS Classes ARCWSLOC 46.19	Build an Aggregate Group Block ARCWSMS 46.20
VSAM Processing ARCWSAM 46.21	Issue SVC 26 Delete ARCW26DL 46.22	Perform SVC 99 Allocate ARCW99AL 46.23	Perform SVC 99 Deallocate ARCW99DA 46.24	SVC 99 Processing to Retrieve Information ARCW99RT 46.25
ABARS RACF System Interface ARCWRACF 46.26	Perform OPEN/EOV Tape Volume Security Verification ARCWTVSV 46.27			

Figure 10. Visual Table of Contents for ABARS System Utilities

Diagram 46.1: ARCWLDB - Chain Control Blocks

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWLDB adds a new member to a chain of control blocks.

Output

- None.

Diagram 46.2: ARCWBSAM - BSAM Interface

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWBSAM interfaces with BSAM. ARCWBSAM performs BSAM READ(s) and WRITE(s) as requested. One request is performed per invocation.

ARCWBSAM also handles all error exits from the management routine.

Output

- None.

Diagram 46.3: ARCWCATF - Translate SVC 26 Generic Locate Data

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWCATF translates the generic locate data.

Output

- None.

Diagram 46.4: ARCWCGDG - Issue an SVC 26 to Define a GDG Base

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWCGDG defines a Generation Data Group base.

Output

- None.

Diagram 46.5: ARCWCLOC - Issue an SVC 26 Catalog Locate

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWCLOC determines to which catalog a GDG data set will be directed when it is defined.

Output

- None.

Diagram 46.6: ARCWCLOS - Close Processing for QSAM/BSAM

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWCLOS uses the passed DCB to perform QSAM or BSAM close operations.

Output

- None.

Diagram 46.7: ARCWCNVM - Issue an SVC 26 to Catalog a Non-VSAM Data Set

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWCNVM catalogs a non-VSAM data set.

Output

- None.

Diagram 46.8: ARCWCOR - Obtain Memory and Initialize Storage

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWCOR obtains and initializes storage from the desired subpool.

Output

- None.

Diagram 46.9: ARCWDEFD - SVC 99 Build Interface

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWDEFD adds the information obtained from the Format 1 DSCB to the dynamic allocation parameter list.

Output

- None.

Diagram 46.10: ARCWDEVT - Define CSECT for Device Types

Input

- None.

Processing

ARCWDEVT defines a table of device types for allocation.

Output

- None.

Diagram 46.11: ARCWESTA - Establish or Remove an Abnormal Exit

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWESTA establishes or removes an abnormal exit via the ESTAE macro. A request function (add or remove an ESTAE exit) is passed to ARCWESTA by the calling module and ARCWESTA establishes or removes the ESTAE exit. In the case of an abnormal end, ARCWESTA performs an inline return to the module last requesting an ESTAE exit.

Output

- None.

Diagram 46.12: ARCWFREM - Free Memory or a Subpool

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWFREM frees a block of memory or an entire subpool of previously obtained memory blocks.

Output

- None.

Diagram 46.13: ARCWGLOC - Issue an SVC 26 Generic Locate**Input**

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWGLOC issues an SVC 26 generic locate to retrieve a list of cataloged data sets that match a generic key.

Output

- None.

Diagram 46.14: ARCWLOC - Issue SVC 26 Locate**Input**

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWLOC builds the catalog field parameter list for each of the entries and then issues an SVC locate.

Output

- None.

Diagram 46.15: ARCWNQDQ - Enqueue/Dequeue Routine**Input**

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWNQDQ acts as the controller for doing enqueue/dequeue. ARCWNQDQ performs the following:

- Invokes ENQ macro instruction to request a resource
- Invokes DEQ macro instruction to release a resource.

Output

- None.

Diagram 46.16: ARCWOBTN - OBTAIN Format 1 DSCB Routine

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWOBTN obtains the Format 1 DSCB.

Output

- None.

Diagram 46.17: ARCWOPEN - Open Processing

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWOPEN performs the following:

- Determines if processing is to be done for:
 - BSAM or QSAM
 - Disk or tape
 - Input or output
- Establishes an ESTAE to handle all error exits from the management routines
- Opens the requested data set.

Output

- None.

Diagram 46.18: ARCWQSAM - QSAM Processing

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWQSAM performs QSAM GET(s) or PUT(s) as requested and handles all error exits from the management routines.

Output

- None.

Diagram 46.19: ARCWSLOC - Obtain the Volume List and SMS Classes

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWSLOC obtains the volume list and SMS classes for a data set.

Output

- None.

Diagram 46.20: ARCWSMS - Build an Aggregate Group Block

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWSMS obtains the aggregate group definition from SMS.

Output

- None.

Diagram 46.21: ARCWVSAM - VSAM Processing

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWVSAM performs the processing necessary to read a data set migrated to a SDSP for aggregate backup.

Output

- None.

Diagram 46.22: ARCW26DL - Issue SVC 26 Delete

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCW26DL issues a SVC 26 delete request for data sets to be deleted.

Output

- None.

Diagram 46.23: ARCW99AL - Perform SVC 99 Allocate

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCW99AL builds the dynamic allocation parameter list and issues SVC 99 to allocate a data set.

Output

- None.

Diagram 46.24: ARCW99DA - Perform SVC 99 Deallocate

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCW99DA builds the dynamic allocation parameter list and issues a SVC 99 to deallocate a data set.

Output

- None.

Diagram 46.25: ARCW99RT - SVC 99 Processing to Retrieve Information

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCW99RT invokes SVC 99 to retrieve information about a data set.

Output

- None.

Diagram 46.26: ARCWRACF - ABARS RACF System Interface

Input

- ARCWRACP Parameter List.

Processing

ARCWRACF is the ABARS interface to the Resource Access Control Facility (RACF). ARCWRACF verifies data set and tape volume status and adds volumes to the ABARS tape volume set. ARCWRACF also defines a RACF profile for a data set to be recovered and deletes a RACF profile for a data set that failed recovery.

Output

- Updated ARCWRACP Parameter List.

Diagram 46.27: ARCWTVSV - Perform OPEN/EOV Tape Volume Security Verification

Input

- Address of the IEEOVSE Control Block.

Processing

ARCWTVSV performs security verification of tape volumes during OPEN/EOV processing for output tapes when DFHSM is backing up a tape or migrated data set during aggregate backup processing.

Output

- Return Codes.

ABARS Message Writer

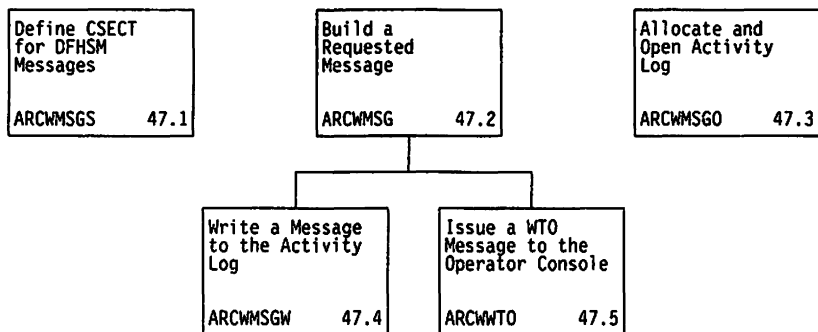


Figure 11. Visual Table of Contents for ABARS Message Writer

Diagram 47.1: ARCWMSGGS - Define CSECT for DFHSM Messages

Input

- None.

Processing

ARCWMSGGS is a table that defines the DFHSM messages issued from the secondary address space.

Output

- None.

Diagram 47.2: ARCWMSG - Build a Requested Message

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWMSG builds the requested message and routes it to the appropriate destination.

Output

- None.

Diagram 47.3: ARCWMSGO - Allocate and Open the Activity Log

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWMSGO allocates and opens the secondary address space activity log.

If a DASD data set is requested but could not be allocated or opened, ARCWMSGO attempts to allocate and open a SYSOUT data set for the activity log.

Output

- None.

Diagram 47.4: ARCWMSGW - Write a Message to the Activity Log

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWMSGW writes the ARCWMSG-built message to the activity log. Messages that are longer than 120 characters are split on word boundaries into multiple lines with a maximum of 120 characters each.

If an error occurs in writing the message, a WTO message is issued to the operator. If writing the message to the activity log fails and the activity log has been allocated as a DASD data set, an attempt is made to allocate the activity log to SYSOUT.

Output

- None.

Diagram 47.5: ARCWWTO - Issue a WTO Message to the Operator Console

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWWTO issues WTO messages to the operator console. ARCWWTO splits the message on word boundaries and sends the messages to the operator console.

Output

- None.

ABARS User Exits

Load ABARS User Exit Modules ARCWLOAD 48.1	Control ABARS User Exit ARCBEXT ARCBINT 48.2	Control ABARS User Exit ARCCREXT ARCCRINT 48.3
Control ABARS User Exit ARCSKEXT ARCSKINT 48.4	Control ABARS User Exit ARCM2EXT ARCM2INT 48.5	

Figure 12. Visual Table of Contents for ABARS User Exits

Diagram 48.1: ARCWLOAD - Load ABARS User Exit Modules

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWLOAD loads any aggregate backup or aggregate recovery user-written exit modules.

Output

- None.

Diagram 48.2: ARCBEINT - Control ABARS User Exit ARCBEEEXT

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCBEINT serves as the controller for the aggregate backup error user exit module ARCBEEEXT.

Output

- None.

Diagram 48.3: ARCCRINT - Control ABARS User Exit ARCCREXT

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCCRINT serves as the controller for the aggregate recovery conflict resolution user exit module ARCCREXT.

Output

- None.

Diagram 48.4: ARCSKINT - Control ABARS User Exit ARCSKEXT

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCSKINT serves as the controller for the aggregate recovery data set skip user exit module ARCSKEXT.

Output

- None.

Diagram 48.5: ARCM2INT - Control ABARS User Exit ARCM2EXT

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCM2INT serves as the controller for the aggregate backup ML2 data set user exit module ARCM2EXT.

Output

- None.

ABARS DFSS Interface

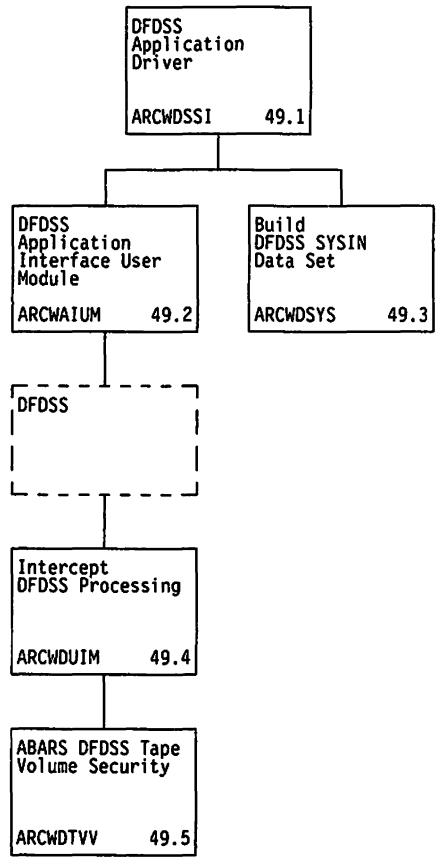


Figure 13. Visual Table of Contents for ABARS DFSS Interface

Diagram 49.1: ARCWDSSI - DFDSS Application Driver

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWDSSI controls the invocation of DFDSS to backup or restore data sets.

Output

- None.

Diagram 49.2: ARCWAIUM - DFDSS Application Interface User Module

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWAIUM obtains and initializes a DFDSS interface user area and links to DFDSS.

Output

- None.

Diagram 49.3: ARCWDSYS - Build DFDSS SYSIN Data Set

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWDSYS creates a SYSIN data set containing the DFDSS control statements for aggregate backup or aggregate recovery.

Output

- None.

Diagram 49.4: ARCWDUIM - Intercept DFDSS Processing

Input

- Control Vector Table Pointer (ARCWCVT).

Processing

ARCWDUIM serves as the user interaction module to intercept processing at the DFDSS system startup, SYSPRINT, and tape volume verification exit points.

Output

- None.

Diagram 49.5: ARCWDTVV - ABARS DFDSS Tape Volume Security Verification

Input

- Volume Serial Number.

Processing

ARCWDTVV performs tape volume security verification for ABARS when DFDSS is selecting the output tape volume.

Output

- Return Codes.

List of Abbreviations

ABARS	aggregate backup and recovery support	ISPF/PDF	Interactive System Productivity Facility/Program Development Facility
ACEE	access control environment element (ACEE)	JES3	job entry subsystem 3
ACS	automatic class selection	JFCB	job file control block
AIX	alternate index	L2CR	level 2 control record
ARVE	agregate recovery volume entry	MASCB	multiple address space control block
ASCB	address space control block	MASIP	multiple address space interface parameter list
BCR	backup control record	MCA	MCDS alias entry record
BCDS	backup control data set	MCB	BCDS data set record
BSAM	basic sequential access method	MCC	BCDS backup version record
BTCB	backup task control block	MCD	MCDS data set record
BVR	backup cycle volume record	MCDS	migration control data set
CCW	channel control word	MCK	control data set key and record header
CDD	common data set descriptor record	MCL	BCDS backup migrated data set record
CIB	command input buffer	MCM	BCDS move backup version record
CSA	common service area	MCO	MCDS VSAM associations record
DCB	data control block	MCP	eligible volume record
DCL	dump class record	MCR	management control record
DCR	dump control record	MCT	BCDS backup volume record
DEB	data extent block	MCU	MCDS user record
DECB	data entry control block	MCV	MCDS volume record
DFDSS	Data Facility Data Set Services	MCVT	management communication vector table
DFHSM	data facility hierarchical storage manager	MWE	management work element
DFP	data facility product	MCI	migration level 1 free space record
DGN	dump generation record	MDQE	migratable data set queue element
DL2AT	DASD level 2 available table	MHCR	multiple-host processor control record
DSCB	data set control block	MLOG	DFHSM log or journal record header
DSR	daily statistics record	MSS	mass storage system
DTCB	Dump task control block	MTCB	migration task control block
DVL	BCDS dump volume record	MTS	migration tape selection
DVST	Dump volume selection table	MVT	mounted volume table
DVT	device table	OCDS	offline control data set
ECB	event control block	PAS	primary address space
EOV	end of volume	PCDD	pseudo common data set descriptor record
ESTAE	extended specify task abnormal exit	PDA	problem determination aid
ESTAI	extended specify task abnormal intercept	PDE	pool descriptor element
EXT	user exit table	QCT	queue control table
FSR	function statistics record	QSAM	queued sequential access method
GDG	generation data group		

RACF	Resource Access Control Facility	TIOT	task input/output table
RCB	recovery control block	TT	trap table
RLE	retained data set level element	TTOC	tape table of contents
RPL	request parameter list	TTR	relative record address
RTCB	recall tasks control block	TTX	tape timer exit
SAF	System Authorization Facility	TVT	tape volume table
SAS	secondary address space	UCB	unit control block
SDATA	VSAM sphere backup control record	UUT	user unit table
SDSP	small data set packing	VAC	JES3 volume activity count record
SDWA	system data work area	VCAT	volume catalog
SMS	storage management subsystem	VLST	volume list of primary volumes in JES3
SSI	subsystem interface	VSAM	virtual storage access method
SUT	space usage table	VSR	volume statistics record
SVC	supervisor call	VTOC	volume table of contents
TAL	tape allocation list	WCVT	secondary address space communications vector table
TCB	task control block		

Glossary of Terms and Abbreviations

This glossary includes definitions of some terms found in this document. Some of the terms defined below are from:

- The *American National Dictionary for Information Processing Systems*, copyright 1982 by the Computer and Business Equipment Manufacturers Association. Copies may be purchased from the American National Standards Institute at 1430 Broadway, New York, New York 10018. These definitions are identified by an asterisk.
- The *ISO Vocabulary - Information Processing*, and the *ISO Vocabulary - Office Machines*, developed by the International Standards Organization, Technical Committee 97, Subcommittee 1. Definitions from published sections of this vocabulary are identified by the symbol "(ISO)" preceding the definition. Definitions from draft proposals and working papers under development by the ISO/TC97 vocabulary subcommittee are identified by the symbol "(TC97)," indicating that final agreement has not yet been reached among its participating members.

A

ABARS. Aggregate backup and recovery support.

accompany data set. In aggregate backup and recovery processing, a data set that is physically transported from the backup site to the recovery site instead of being copied to the aggregate data tape. It is cataloged during recovery.

ACCOMPANY keyword. The keyword used in the selection data set to create an accompany list.

accompany list. An optional list in the selection data set that identifies the accompany data sets.

ACEE. Access control environment element.

ACS. Automatic class selection.

active data. Data that is frequently accessed by users and that resides on level 0 volumes.

activity log. In DFHSM, a SYSOUT or DASD-type data set used to record activity and errors that occurred during DFHSM processing.

AG. Aggregate group.

aggregate backup. The process of copying the data sets and control information of a user-defined group of data

sets so that they may be recovered later as an entity by an aggregate recovery process.

aggregate group. A Storage Management Subsystem class that defines control information and identifies the data sets to be backed up by a specific aggregate backup.

aggregate recovery. The process of recovering a user-defined group of data sets that were backed up by aggregate backup.

aggregated data sets. In aggregate backup and recovery processing, data sets that have been defined in an aggregate group as being related.

AIX. See alternate index.

allocate data set. In aggregate backup and recovery processing, a data set name that is listed in the selection data set. The space for this data set is allocated and the data set is cataloged at the recovery location, but the actual data is not restored.

ALLOCATE keyword. The keyword used in the selection data set to create an allocate list.

allocate list. An optional list in the selection data set that identifies the allocate data sets.

alternate index. In systems with VSAM, a collection of index entries related to a given base cluster and organized by an alternate key, that is, a key other than the prime key of the associated base cluster data records. Its function is to provide an alternate directory for locating records in the data component of a base cluster. See also path.

alternate index cluster. In VSAM, the data and index components of an alternate index.

alternate tape volumes. In DFHSM, copies of original tape volumes created during tape copy processing. The volumes can either be stored on-site or off-site for use later in the event of a disaster. During the tape replace processing, these volumes can replace the original volumes that may be lost.

alternate tape volume reference. In DFHSM, additional fields in the TTOC record that record information about the alternate tape volume. These fields provide DFHSM with the necessary information to refer to the alternate tape volume.

audit. A DFHSM process that detects discrepancies between data set information in the VTOCs, the computing system catalog, the MCDS, BCDS, and OCDS.

AUTH. The DFHSM command used to identify an authorized user who can issue DFHSM system programmer and storage administrator commands.

authorized user. In DFHSM, the person or persons who are authorized through the DFHSM AUTH command to issue DFHSM system programmer, storage administrator, and operator commands.

automatic backup. In DFHSM, the process of automatically copying eligible data sets from DFHSM-managed volumes or migration volumes to backup volumes during a specified backup cycle.

automatic cartridge loader feature. A feature of the 3480 Magnetic Tape Subsystem providing the operator with the capability of preloading multiple tapes to be used as migration, backup, or dump tapes.

automatic class selection (ACS). A mechanism for assigning SMS classes and storage groups.

automatic dump. In DFHSM, the process of using DFDS to automatically do a full volume dump of all allocated space on DFHSM-managed volumes to designated tape dump volumes.

automatic migration. In DFHSM, the process of automatically moving eligible data sets from user volumes to migration level 1 or level 2 volumes, or from migration level 1 volumes to migration level 2 volumes, without a specific request for each data set moved. See interval migration.

availability management. In DFHSM, the process of ensuring that a current version (backup copy) of the installation's data sets resides on tape or DASD.

B

backup. In DFHSM, the process of copying a data set residing on a level 0 volume, level 1 volume, or a volume not managed by DFHSM to a backup volume. See automatic backup, incremental backup.

backup control data set (BCDS). A VSAM, key-sequenced data set that contains information about backup versions of data sets, backup volumes, dump volumes, and volumes under control of the backup and dump functions of DFHSM.

backup copy. In DFHSM, a copy of a data set that is kept for reference in case the original data set is destroyed.

backup cycle. In DFHSM, a period of days for which a pattern is used to specify the days in the cycle on which automatic backup is scheduled to take place.

backup frequency. In DFHSM, the number of days that must elapse since the last backup version of a data set

was made until a changed data set is again eligible for backup.

backup profile. In DFHSM, a RACF discrete data set profile associated with the backup version of a cataloged data set that is protected by a RACF discrete data set profile.

backup version. See backup copy.

backup volume. A volume managed by DFHSM to which backup versions of data sets are written.

backup volume cleanup process. A DFHSM process that scratches data set backup versions on DASD that are no longer needed.

backup VTOC copy data set. In DFHSM, a copy of the VTOC of a volume that was backed up by DFHSM. This VTOC data set contains only part of the Format 1 DSCB for each data set from the original data set. This data set is written on a migration level 1 volume.

base cluster. In systems with VSAM, a key-sequenced or entry-sequenced file over which one or more alternate indexes are built. See also cluster.

BCDS. See backup control data set.

base data component. In VSAM, a component of the base cluster containing data of a data set.

BDAM. Basic direct access method.

BVR. Backup cycle volume record.

C

catalog. (1) * (ISO) A directory of files and libraries, with reference to their locations. A catalog may contain other information such as the types of devices in which the files are stored, passwords, blocking factors. (2) * (ISO) To enter information about a file or a library into a catalog. (3) The collection of all data set indexes that are used by the control program to locate a volume containing a specific data set. (4) To include the volume identification of a data set in the catalog. (5) See VSAM master catalog, VSAM user catalog.

CDD. See common data set descriptor record.

CDT. Class descriptor table.

changed data set. In DFHSM, a data set that has been opened for other than read-only access.

CLIST. See command list.

cluster. In systems with VSAM, a named structure consisting of a group of related components, for

example, a data component with its index component. See also base cluster.

command list. A command procedure containing executable sequences of TSO commands, subcommands, and command procedure statements.

command procedure. In TSO, a data set or a member of a partitioned data set containing TSO commands to be performed sequentially by the EXEC command. See also CLIST.

common data set descriptor record. A record which precedes a user's data set on a DFHSM-owned volume and that is used to return the data set to the user's format.

common filter services. A subcomponent of DFP common services. Common filter services compares data items with filter keys and indicates which data items match the keys and how many matches have been found.

common service area (CSA). In OS/VS2, a part of the common area that contains data areas addressable by all address spaces, but protected during its use by the key of the requester.

compaction. In DFHSM, a method of compressing and encoding data that is migrated or backed up.

compress. In DFHSM, to release unused space in a partitioned data set during the migrate/recall and backup/recovery processes.

computing system catalog. In DFHSM, the master catalog and any associated user catalogs used as sources during the audit process.

contiguous space. An unbroken consecutive series of storage locations.

control data set. In DFHSM, one of three data sets (BCDS, MCDS, and OCDS) that contain records used in DFHSM processing.

control file. In aggregate backup and recovery processing, one of three aggregate files generated by the aggregate backup process. It contains the catalog, allocation, volume, and related information necessary to perform aggregate recovery.

converter/interpreter processing. The job segment that converts and interprets JCL for MVS.

CSA. See common service area.

current backup version. In DFHSM, a backup copy of the data set that was created on a date after the data set was last updated.

cycle start date. In DFHSM, the date a backup cycle, dump cycle, or migration cleanup cycle is started.

D

daily backup volume. In DFHSM, a volume associated with a given day in the backup cycle and assigned to contain backup versions created on that cycle day.

daily space management. In DFHSM, the automatic space management of data sets that occurs once every 24 hours.

DASD. See direct access storage device.

DASD calculation services (DCS). A subcomponent of DFP common services. DCS retrieves and calculates data set information for both VSAM and non-VSAM data sets based on the user's input request.

data class. A list of allocation attributes that the system uses for the creation of data sets.

data control block (DCB). A control block used by access method routines in storing and retrieving data.

Data Facility Data Set Services (DFDSS). An IBM licensed program used to copy, move, dump, and restore data sets and volumes.

Data Facility Hierarchical Storage Manager (DFHSM). An IBM licensed program used to manage volumes and data sets. data in an MVS operating environment.

data file. In aggregate backup and recovery processing, one of three aggregate files generated by the aggregate backup process. It contains the backup copies of the data sets to be recovered.

data migration. See migration.

data set change indicator. A bit in the DSCB that indicates whether the data set was opened for output. This is bit 6 of the DS1DSIND field in the Format 1 DSCB. This indicator is supported on MVS systems that have data-set-changed flag support installed.

data set deletion. In DFHSM, the space management technique of deleting non-SMS-managed data sets that have not been used for a specified number of days and that do not have expiration date protection.

data set group. Data sets that have the same set of initial characters in their names.

data set organization. The type of arrangement of data in a data set. Examples are sequential organization or partitioned organization.

data set pool. One or more volumes managed by DFHSM to which data sets that have migrated can be

recalled, depending on the set of initial characters of the data set name.

data set retirement. In DFHSM, the space management technique of deleting non-SMS-managed data sets that have not been referred to for a specified number of days, and that have a backup version.

date last referred to. In DFHSM, the last date when a data set was opened.

DBA. See delete-by-age.

DBU. See delete-if-backed-up.

DCB. See data control block.

DCS. See DASD calculation services.

debug mode. In DFHSM, the method of operation that projects the changes that would occur in normal operation but in which no user data moves.

decompaction. In DFHSM, the process of decoding and expanding data that was compacted during daily space management or backup.

delete-by-age (DBA). In DFHSM, the space management technique of deleting non-SMS-managed data sets that have not been opened for a specified number of days.

delete-if-backed-up (DBU). In DFHSM, the space management technique of deleting non-SMS-managed data sets that have not been opened for a specified number of days, and that have a current backup version.

DFDSS. See Data Facility Data Set Services.

DFHSM. See Data Facility Hierarchical Storage Manager.

DFHSM-authorized user. In DFHSM, the person or persons who are authorized through the DFHSM AUTH command to issue system programmer and storage administrator commands.

DFHSM log. In DFHSM, a pair of sequential data sets, X and Y, containing a chronological list of transactions and statistics occurring in DFHSM.

DFHSM-managed volume. A volume managed by DFHSM containing data sets that are directly accessible to the user.

DFHSM secondary address space. A separate address space started and controlled by DFHSM to perform aggregate backup or aggregate recovery processing.

DFP common services. A component of DFP that contains three subcomponents: common filter services

(CFS), DASD calculation services (DCS), and device information services (DIS).

direct access storage device (DASD). A device in which the access time is effectively independent of the location of data.

directed recall. Moving a migrated data set from a level 1 or a level 2 volume to a level 0 volume and specifying the target volume and unit name where the data set can be allocated.

disaster. An unplanned occurrence that keeps a company or organization from conducting its normal business for some time period.

disaster backup. A means to protect a computing system complex against data loss in the event of a disaster. In DFHSM, the copying of all data on 3480 single-file tape volumes, or the equivalent, for storage at another location. The copied tape volumes can be used at another location to replace tape volumes that may be lost in a disaster.

disaster recovery. A means to replace lost data at another location with sufficient resources in order to resume operation. In DFHSM, the replacement of lost data that was contained on 3480 single-file tape volumes, or the equivalent, in the event of a disaster.

discrete backup profile. A RACF profile created when DFHSM backs up a cataloged, RACF-indicated data set.

discrete profile. A RACF profile that contains security information about a specific data set on a particular volume.

disposition processing. In OS/VS, a function performed by the initiator at the end of a job step to keep, delete, catalog, or uncatalog data sets, or pass them to a subsequent job step, depending on the data set status of the disposition specified in the DISP parameter of the DD statement.

DSCB. Data set control block. See also Format 1 DSCB.

DSLO. Distributed Systems License Option.

dump. See full volume dump.

dump class. A DFHSM-named set of characteristics that describe how volume dumps are managed.

dump copy. In DFHSM, a copy of the volume image produced by the DFDSS full volume dump function.

dump cycle. In DFHSM, a period of days for which a pattern is used to specify the days in the cycle on which automatic full volume dump is scheduled to take place.

dump generation. A successful full volume dump of a volume that may contain one to five identical dump copies.

dump VTOC copy data set. In DFHSM, a copy of the VTOC of a volume dumped by DFHSM. This VTOC data set contains only part of the Format 1 DSCB for each data set from the original data set. This data set is written on a migration level 1 volume.

E

eligibility age. The number of days since a data set met its criteria to be migrated.

emergency mode. In DFHSM, the method of operation that prevents data set movement and deletion in space management, backup, and recovery processes.

encode. (TC97) To convert data by the use of a code in such a manner that reconversion to the original form is possible.

erase-on-scratch. A RACF and DFP/XA function that overwrites the space occupied by a data set when the data set is scratched from a DASD device supported by MVS/XA.

ESDS. Entry-sequenced data set.

esoteric unit names. The names a user assigns to I/O devices that have the same device type. When the user specifies the assigned unit name to DFHSM, DFHSM associates the unit name to its device type.

exclude data set. In aggregate backup and recovery processing, a data set in the selection data set exclude list. This data set is to be excluded from being processed by aggregate backup.

EXCLUDE keyword. The keyword used in the selection data set to create an exclude list.

exclude list. An optional list in the selection data set that identifies those data sets that are to be excluded from being processed by aggregate backup.

expiration. The removal of a user data set from either a user (non-DFHSM-owned) volume, or from a DFHSM-owned volume when the user data set has been migrated. If there is an explicit expiration date, it is found in the Format 1 DSCB for a non-migrated data set, or in the MCD record for a migrated data set. If there is no explicit expiration date, the management class attributes are checked to determine an implicit expiration date.

extents. A continuous space on a direct access storage volume, occupied by or reserved for a particular data set, data space, or file.

extent reduction. In DFHSM, the releasing of unused space, reducing the number of extents, and compressing partitioned data sets.

F

FBA. See fixed-block architecture.

fixed-block architecture. Data stored in blocks of fixed size; these blocks are addressed by block number relative to the beginning of the particular file.

FMID. Function modification identifier.

Format 1 DSCB. An identifier DSCB that describes a data set or VSAM data space and its first three extents. Refer to the appropriate system data areas manual.

fragmentation index. The qualitative measure of the scattered free space on a volume.

FSR. Functional statistics record

full volume dump. In DFHSM, the process of using a DFDSS function that backs up the entire allocated space on a volume.

full volume restore. In DFHSM, the process of using a DFDSS function that restores the entire volume image.

functional statistics record. A record that is created each time a DFHSM function is processed. It contains a log of system activity and is written to SYS1.LOGREC.

functional verification procedure. A procedure distributed with DFHSM that tests to verify that all basic DFHSM functions are working properly.

G

general pool. In a DFHSM environment with JES3, the collection of all DFHSM primary volumes added to that processor that have a mount status of permanently-resident or reserved, that have the automatic recall attribute, specified, and that have a mount attribute of storage or private.

generic profile. A RACF profile that contains security information about multiple data sets, users, or resources that may have similar characteristics and require a similar level of protection.

H

high threshold of occupancy. In DFHSM, the upper limit of space to be occupied on a volume managed by DFHSM. Contrast with low threshold of occupancy.

I

IDCAMS data set. In aggregate backup and recovery processing, a file created during the aggregate recovery verification process. It can be used to resolve data set conflicts that were detected.

inactive age. In DFHSM, the number of days since the data set was last referred to.

inactive data. Copies of active or low-activity data that reside on DFHSM-owned dump and incremental backup volumes. See also low-activity data.

include data set. In aggregate backup and recovery processing, a data set in the selection data set include list. This data set is processed by aggregate backup.

INCLUDE keyword. The keyword used in the selection data set to create an include list.

include list. A required list in the selection data set that identifies the include data sets that are to be processed by aggregate backup.

incremental backup. In DFHSM, the process of copying a data set that has been opened for other than read-only access since the last backup version was created, and that has met the backup frequency criteria.

incremental recovery. Recovery of the latest backup copy of a data set or data sets made by incremental backup.

inline backup. The process of copying a specific data set to a migration level 1 volume from a batch environment. This process allows you to back up data sets in the middle of a job.

installation verification procedure (IVP). A procedure distributed with DFHSM that tests to verify that the basic facilities of DFHSM are functioning correctly.

instruction data set. In aggregate backup and recovery processing, a data set that contains instructions, commands, or any data the aggregate backup site defines as needed for aggregate recovery at the recovery site.

instruction file. In aggregate backup and recovery processing, one of three aggregate files generated by the aggregate backup process. It contains the instruction data set.

interactive storage management facility (ISMF). The interactive panels of MVS/DFP that allows users and storage administrators access to the storage management functions of DFDSS and DFHSM.

Interactive System Productivity Facility (ISPF). An IBM licensed program used to develop, test, and run

application programs interactively. ISPF is the interactive access method for all storage management functions.

interval migration. In DFHSM, automatic migration that occurs when the high threshold of occupancy is reached or exceeded on a DFHSM-managed volume during a specified time interval. Data sets are moved from the volume, largest eligible data set first, until the low threshold of occupancy is reached.

ISMF. See interactive storage management facility.

ISPF. See Interactive System Productivity Facility.

ISPF/PDF. Interactive System Productivity Facility/Program Development Facility.

IVP. See installation verification procedure.

J

JCL. Job control language.

JES2. Job entry subsystem 2.

JES3. Job entry subsystem 3.

JFCB. Job file control block.

journal data set. In DFHSM, a sequential data set used by DFHSM for recovery of the MCDS, BCDS, and OCDS. The journal contains a duplicate of each record in the control data sets that has changed since the MCDS, BCDS, and OCDS were last backed up.

K

KSDS. Key-sequenced data set.

L

level 0 volume. A volume that contains data sets directly accessible by the user. The volume may be either DFHSM managed or not DFHSM managed.

level 1 volume. A volume owned by DFHSM containing data sets that migrated from a level 0 volume.

level 2 volume. A volume under control of DFHSM containing data sets that migrated from a level 0 volume, from a level 1 volume, or from a volume not managed by DFHSM.

like device. Pertaining to (DASD) devices with identical geometry: that is, the same number of bytes per track, the same number of tracks per cylinder, and the same number of cylinders per actuator.

linear data set. In VSAM, a named linear string of data, stored in such a way that it can be retrieved or updated in 4096-byte units.

low-activity data. Data that is infrequently accessed by users and is eligible to be moved or has been moved to DFHSM-owned migration volumes.

low threshold of occupancy. The lower limit of space to be occupied on a volume managed by DFHSM. Contrast with high threshold of occupancy.

M

management class. A list of data set migration, backup, and retention attributes that DFHSM uses to manage storage at the data set level.

management work element (MWE). A control block containing the necessary information to direct DFHSM functions.

managed volume. See DFHSM-managed volume and primary volume.

MCB. BCDS data set record.

MCC. Backup version record.

MCD. MCDS data set record.

MCDS. See migration control data set.

MCP. Eligible volume record.

MCT. Backup volume record.

MCV. Primary and migration volume record.

MCVT. Management communication vector table.

migration. In DFHSM, the process of moving a cataloged data set from a DFHSM-managed volume to a migration level 1 or migration level 2 volume, from a migration level 1 volume to a migration level 2 volume, or from a volume not managed by DFHSM to a migration level 1 or migration level 2 volume.

migration cleanup. In DFHSM, the first phase of daily space management. This process deletes unnecessary records or migration copies.

migration control data set (MCDS). A VSAM, key-sequenced data set that contains statistics records, control records, user records, records for data sets that have migrated, and records for volumes under migration control of DFHSM.

migration level 1 volume. See level 1 volume.

migration level 2 volume. See level 2 volume.

migration volume. A volume under control of DFHSM that contains migrated data sets.

minimal discrete profile. A profile with no access list or model profile. The minimal discrete profile is used when recovering a RACF-indicated data set whose original profile or backup profile no longer exists.

minimum migration age. In DFHSM, the number of days a data set must remain unopened before DFHSM can select it to migrate from a volume.

ML1. Migration level 1. See level 1 volume.

ML2. -Migration level 2. See level 2 volume.

model entity. A model data set name that defines a discrete data set profile for RACF protection.

multiple-file format. In DFHSM, a 3480 tape format, or the equivalent, that requires a unique standard label data set for each user data set written. When DFHSM writes in multiple-file format it writes one tape data set for every user data set to all 3480 migration and backup volumes.

mutually exclusive parameters. A set of parameters of which only one can be used. If more than one parameter is specified, only the last parameter specified is used.

MVS/DFP. An IBM licensed program used to manage programs, devices, and data in an MVS operating environment.

MVS/Enterprise Systems Architecture (MVS/ESA). An MVS operating system environment that supports accessing of virtual storage in multiple address spaces and data spaces.

MVS/Extended Architecture (MVS/XA). An MVS operating system environment that supports 31-bit real and virtual storage addressing, increasing the size of addressable real and virtual storage from 16 megabytes to 2 gigabytes.

MVS/SP. An IBM licensed program used to control the MVS operating system and establish a base for a MVS/XA or MVS/370 environment.

MVT. Mounted volume table.

MWE. See management work element.

N

non-DFHSM-managed volume. A volume not defined to DFHSM containing data sets that are directly accessible to users.

O

OCDS. See offline control data set.

offline control data set (OCDS). In DFHSM, a VSAM, key-sequenced data set that contains information about tape backup volumes and tape migration level 2 volumes.

online. (1) * (ISO) Pertaining to the operation of a functional unit when under the direct control of a computer. (2) * Pertaining to a user's ability to interact with a computer. (3) * Pertaining to a user's access to a computer via a terminal. (4) Controlled by, or communicating with, a computer.

original tape volume. In DFHSM, a 3480 single-file tape volume, or the equivalent, used to store data during migration or backup processing, and from which a copy (called the alternate volume) is made for disaster recovery.

OS/VS2. A virtual storage operating system that is an extension of OS/MVT.

owned space. The storage space on a set of volumes to which DFHSM allocates migrated data sets and backup versions, but to which user jobs should not allocate. Included in this set are migration level 1, migration level 2, and backup volumes.

owned volume. A volume on which DFHSM writes dump, migration, or backup data sets.

P

partitioned data set (PDS). A data set in DASD that is divided into partitions, called members, each of which can contain a program, part of a program, or data.

partitioned data set extended (PDSE). A DFP library structure that is an enhanced replacement for a partitioned data set.

path. (1) (TC97) In a network, any route between any two nodes. (2) In a data base, a sequence of segment occurrences from the root segment to an individual segment. (3) In VSAM, a named, logical entity providing access to the records of a base cluster either directly or through an alternate index. (4) In an online IMS/VS system, the route a message takes from the time it is originated through processing; in a multisystem environment, the route can include more than one IMS/VS system.

PCDD. Pseudo common data set descriptor (CDD) record

PDF. Program Development Facility.

PDS. Partitioned data set.

PDSE. Partitioned data set extended.

physical data set restore. In DFHSM, the process of using a DFDSS function to restore one data set from a dump copy created by using the DFHSM full volume dump function.

pool of volumes. See data set pool, general pool, and volume pool.

primary processing unit. In a multiple processing-unit-environment, the processing unit assigned to do level functions (such as backing up migrated data sets).

primary volume. A non-SMS volume managed by DFHSM containing data sets that are directly accessible to the user.

PSCB. Protected step control block.

PSP. Preventive services planning.

PTF. Program temporary fix.

Q

quiesce time. A time of day after which an automatic function does not start processing any more volumes.

R

RACF. See Resource Access Control Facility.

recall. The process of moving a migrated data set from a level 1 or level 2 volume to a DFHSM-managed volume or to a volume not managed by DFHSM.

recovery. In DFHSM, the process of copying a backup version of a data set from a backup volume to a specified volume or to the volume from which the backup version was created.

recycle process. A DFHSM process that, based on the percentage of valid data on a tape backup or migration level 2 volume, copies all valid data on the tape to a tape spill backup or migration level 2 volume.

Resource Access Control Facility (RACF). An IBM-licensed program that provides access control by identifying and verifying users to the system. RACF authorizes access to resources, logs unauthorized access attempts, and logs accesses to protected data sets.

restart data set. A data set created by DFHSM if aggregate recovery fails. It contains a list of all the data sets successfully restored during the aggregate recovery

and allows the user to restart the aggregate recovery once the cause of the failure has been resolved.

restore. In DFHSM, the process of invoking DFDSS to perform the program's recover function. In general, it is to return to an original value or image, for example, to restore data in main storage from auxiliary storage.

retired version. In DFHSM, a specially marked backup version that DFHSM created before it deleted the non-SMS-managed original data set during data set retirement.

retirement. See data set retirement.

RRDS. Relative record data set.

S

SAF. System authorization facility.

SCP. System control programming.

SDSP. See small data set packing.

secondary address space. See DFHSM secondary address space.

selection data set. In aggregate backup and recovery processing, a sequential data set or a member of a partitioned data set, used to define the data sets that comprise the input to the aggregate backup function. It contains any include, exclude, accompany, or allocate lists.

sequential data set. A data set whose records are organized on the basis of their successive physical positions, such as on magnetic tape.

similar device. A (DASD) device with the same number of bytes per track and tracks per cylinder.

single-file format. In DFHSM, a 3480 format, or the equivalent, consisting of one standard-label data set that spans up to 255 tape volumes.

small data set packing (SDSP). In DFHSM, the process used to migrate data sets that contain equal to or less than a specified amount of actual data. The data sets are written as one or more records into a VSAM data set on a migration level 1 volume.

small-data-set-packing data set. In DFHSM, a VSAM key-sequenced data set allocated on a migration level 1 volume and containing small data sets that have migrated.

SMF. System Management Facilities

SMP. System Modification Program.

SMP/E. System Modification Program Extended.

SMS. See Storage Management Subsystem.

SMS class. A list of attributes that SMS applies to data sets having similar allocation (data class), performance (storage class), or availability (management class) needs.

SMS-managed data set. A data set that has been assigned a storage class.

space manager. See storage administrator.

space management. In DFHSM, the process of managing aged data sets on DFHSM-managed and migration volumes. The three types of space management are: migration, deletion, and retirement.

spill backup volume. A volume owned by DFHSM to which all but the latest backup version of a data set are moved when more space is needed on a DASD daily backup volume or all valid versions are moved when a tape backup volume is recycled.

spill process. A DFHSM process that moves all but the latest backup version of a data set from a DASD daily backup volume to a spill backup volume.

SSI. See subsystem interface.

SSSA. Subsystem option block extension for SMS.

storage administrator. In DFHSM, the person or persons who are authorized through the DFHSM AUTH command to issue DFHSM system programmer and storage administrator commands, who can affect the authority of other DFHSM users, and who control the ways DFHSM manages DASD space.

storage class. A list of storage performance and availability service requests.

storage group. A list of real DASD volumes, or a list of serial numbers of volumes that no longer reside on a system but that end users continue to refer to in their JCL.

storage hierarchy. An arrangement in which data may be stored in several types of storage devices that have different characteristics such as capacity and speed of access.

Storage Management Subsystem (SMS). An operating environment that helps automate and centralize the management of storage. To manage storage, SMS provides the storage administrator with control over data class, storage class, management class, storage group, and ACS routine definitions.

suballocated file. A VSAM file that occupies a portion of an already defined data space. The data space may contain other files. Contrast with unique file.

subsystem interface (SSI). The means by which system routines request services of the master subsystem, a job entry subsystem, or other subsystems defined to the subsystem interface.

system-managed storage. An approach to storage management in which the system determines data placement and an automatic data manager handles data backup, movement, space, and security.

T

threshold of occupancy. A limit of occupied space on a volume managed by DFHSM.

time sharing option (TSO). An option on the operating system for a System/370 that provides interactive time sharing from remote terminals.

TIOT. Task input/output table.

trace. (1) A record of the execution of a computer program that exhibits the sequence in which the instructions were executed. (2) To record a series of events as they occur. (3) In MSS, a monitor in the mass storage control that records data about the system's activity, staging, and destaging. The data describes completed 3850 Mass Storage System functions from the activity schedule queues plus time stamps.

TSO. See time sharing option.

TSO/E. Time sharing option/extended.

TTOC. Tape table of contents record.

U

undirected recall. In DFHSM, moving a migrated data set from a level 1 or level 2 volume to a level 0 volume without specifying the target volume or unit where the volume can be allocated. Undirected recall can be automatic or by command.

unique file. A VSAM file that occupies a data space of its own. The data space is defined at the same time as the file and cannot contain any other file. Contrast with suballocated file.

unlike device. A DASD device with a different number of bytes per track and tracks per cylinder, or both.

V

virtual DASD. In DFHSM, this refers to the 3850 Mass Storage System (MSS).

virtual storage access method (VSAM). An access method for indexed or sequential processing of fixed and variable-length records on direct access devices. The records in a VSAM data set or file can be organized in logical sequence by a key field (key sequence), in the physical sequence in which they are written on the data set or file (entry-sequence), or by relative-record number.

virtual storage constraint relief (VSCR). A function that increases the amount of storage available for the user's application program.

volume. (1) (ISO) A certain portion of data, together with its data carrier, that can be handled conveniently as a unit. (2) (ISO) A data carrier that is mounted and demounted as a unit, for example, a reel of magnetic tape, a disk pack. (3) That portion of a single unit of storage that is accessible to a single read/write mechanism, for example, a drum, a disk pack, or part of a disk storage module. (4) A storage medium that is mounted and demounted as a unit; for example, magnetic tape or diskette.

volume pool. In DFHSM, a set of related primary volumes. When a data set is recalled, if the original volume that it was on is in a defined volume pool, the data set can be recalled to one of the volumes in the pool.

volume serial number. An identification number in a volume label that is assigned when a volume is prepared for use in the system.

volume table of contents (VTOC). (1) A table on a direct access volume that describes each data set on the volume. (2) An area on a disk or diskette that describes the location, size, and other characteristics of each file and library on the disk or diskette.

VSAM. See virtual storage access method.

VSAM master catalog. A key-sequenced data set or file with an index containing extensive data set and volume information that VSAM requires to locate data sets or files, to allocate and deallocate storage space, to verify the authorization of a program or operator to gain access to a data set or file, and to accumulate usage statistics for data sets or files.

VSAM sphere. A VSAM sphere contains the following eight components: base cluster, base data object, base index object, base path, alternate index, alternate index data object, alternate index index object, and alternate index path.

VSAM user catalog. An optional VSAM catalog used in the same way as the master catalog and pointed to by the master catalog. Use of user catalogs lessens the contention for the master catalog and facilitates volume portability.

VSCR. See virtual storage constraint relief.

VTOC. See volume table of contents.

VVDS. VSAM volume data set.

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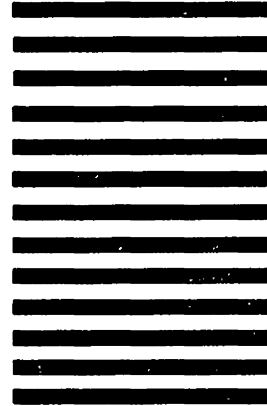
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