STORAGETEK®

PART NUMBER	VERSION NUMBER	REVISION
313462909	3.1	K

SVAA

SHARED VIRTUAL ARRAY ADMINISTRATOR

CONFIGURATION AND ADMINISTRATION FOR VM

PRODUCT TYPE
SOFTWARE

Shared Virtual Array Administrator

Version 3.1

for VM

Configuration and Administration

Part Number: 313462909

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About This Book

Shared Virtual Array Administrator (SVAA) consists of programs that provide configuration, administration, and reporting facilities for the Shared Virtual Array (SVA) subsystem. This book describes how to use the configuration and administration facilities of SVAA.

Note: Although this book refers to the host operating system only as “VM,” the SVAA for VM software runs on **z/VM**.

Note: Throughout this document, "HCD" refers to either **HCD** or **IOCP**.

Who Should Read This Book

This book is for the system programmers or storage administrators responsible for configuring and managing the SVA subsystem. To carry out these activities, you should be familiar with VM and direct access storage devices (DASD) in the host environment you use.

Organization of This Book

The book is organized as follows:

Chapter 1, Introduction	Introduces SVAA configuration and administration.
Chapter 2, Overview	Describes some basic terms and concepts used in SVA subsystem configuration.
Chapter 3, SVAA in the VM Environment	Describes the VM environment for SVAA.
Chapter 4, VM NCL Management	Describes the VM NCL management facilities.
Chapter 5, Using SnapShot	Describes the VM SnapShot feature.
Chapter 6, Instant Format	Describes the VM Instant Format feature.
Chapter 7, SVAA Configuration Tasks: An Outline	Lists the steps required to perform SVAA configuration tasks and the pages in this book where the steps are explained in detail.
Chapter 8, Using the SVAA Panels	Provides detailed instructions in using the SVAA panels to configure the SVA subsystem.
Chapter 9, SVAA Subcommands and Commands	Provides a reference, in alphabetical order, of the SVAA configuration and administration subcommands.
Chapter 10, SVAA VM Utilities	Documents SVAA utilities associated with NCL management and SnapShot.
Appendix A, Drive Module Status	Provides a table of drive module status codes and their descriptions.

A glossary, a list of acronyms and abbreviations, and an index appear at the back of the book.

Conventions Used in This Book

This book uses the following conventions in subcommand and panel descriptions:

- Commands and values that you enter are shown in bold type (for example, **SET ECAMDEV**).
- Uppercase letters in subcommand or parameter names indicate the required letters; the lowercase letters can be omitted. For example, **ALTer CHANnel** shows that **ALT CHAN** is the short form of the **ALTER CHANNEL** subcommand.
- In the panel descriptions, field names and key names are shown in bold type (for example, the **Dates** field, the **Enter** key).

For more details of the conventions, see "Subcommand Descriptions" on page 9-8.

Notation Used in Syntax Diagrams

Throughout this library, diagrams are used to illustrate the programming syntax. The following list tells you how to interpret the syntax diagrams:

- Read the syntax diagrams from left to right, from top to bottom, following the path of the line.

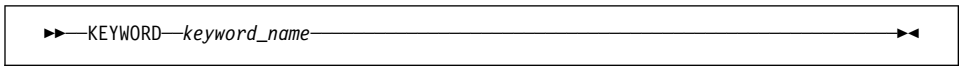
  The ▸▸— symbol indicates the beginning of a statement.

  The —▸ symbol indicates that the statement syntax continues on the next line.

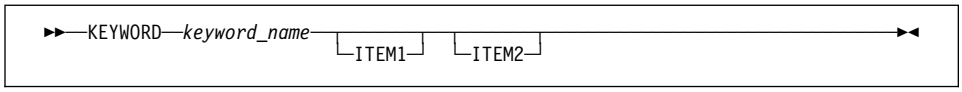
  The ▸— symbol indicates that a statement is continued from the previous line.

  The —▸◂ symbol indicates the end of a statement.

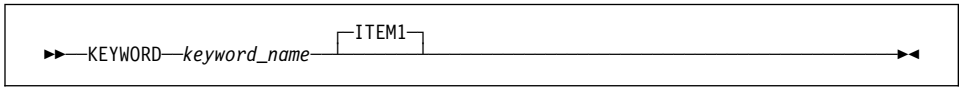
- Items shown on the main path of the statement are required.



- Items shown on branches below the main path are optional.

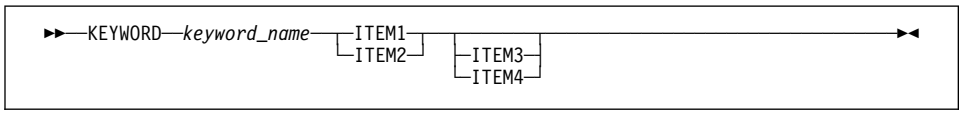


- Items shown on branches above the main path are default values.



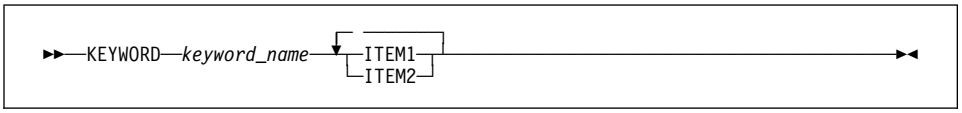
- Items appearing in a stack indicate that only one of the items can be specified. When one of the items in a stack appears on the main path, you must include one of the items.

  For example, in the following diagram, you must include either ITEM1 or ITEM2. ITEM3 and ITEM4 both appear below the main path, so neither one is required.

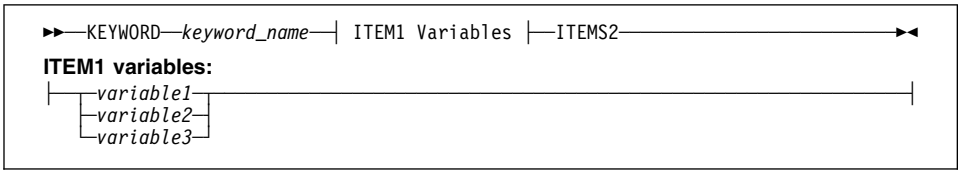


- A repeat arrow shown above an item or a stack of items indicates that you can specify the item multiple times or specify more than one of the items. A character (such as a comma or a blank) on the repeat arrow indicates that the items must be separated by that character.

  For example, in the following syntax diagram, you can specify both `ITEM1` and `ITEM2`, but you must use a blank to separate your choices in your programming syntax.



- In some cases, when an item has additional items associated with it, an additional syntax diagram is shown that represents the full syntax of that item. For example, in the following syntax diagram, additional information that can or must be specified for `ITEM1` appears in the "ITEM1 Variables" syntax diagram.



Shared Virtual Array Documentation

This section lists both software documentation and hardware documentation for the Shared Virtual Array products.

How to Obtain Software Documentation

All of the Shared Virtual Array software publications are available:

- On the "SVA Software Publications" CD-ROM (part number 3134524*nn*). To order a copy, contact StorageTek Publication Sales and Service at 800-436-5554 or send a fax to 303-661-7367.
- Online (for viewing and printing), at the StorageTek Customer Resource Center (CRC) web site at: **www.support.storagetek.com**
  Click on Software and go to the Shared Virtual Array Software list.

  Note: Access to the CRC site requires a password. To obtain a password, call StorageTek Customer Support at 800-678-4430.

SVA Administrator Library:

SVA Administrator for VM

- *Shared Virtual Array Administrator for VM Configuration and Administration*
  3134629*nn*
- *Shared Virtual Array Administrator for VM Installation, Customization, and Maintenance*
  3134631*nn*

- *Shared Virtual Array Administrator for VM Reporting*
  3134630*nn*

SnapVantage (a feature of SVAA for VM)

- *SnapVantage Installation, Customization, and Usage Guide*
  3134940*nn*

SVA Administrator for OS/390

- *Shared Virtual Array Administrator for OS/390 Configuration and Administration*
  3112905*nn*
- *Shared Virtual Array Administrator for OS/390 Installation, Customization, and Maintenance*
  3112908*nn*
- *Shared Virtual Array Administrator for OS/390 Reporting*
  3112906*nn*
- *Shared Virtual Array SnapShot for OS/390 Installation, Customization, and Maintenance*
  3112913*nn*

SVA Administrator for OS/390 and VM

- *Shared Virtual Array Administrator for OS/390 and VM Messages and Codes*
  3112907*nn*

For any StorageTek Software:

- *Requesting Help from Software Support*
  1121240*nn*

SVA Hardware Publications

Shared Virtual Array hardware publications are available:

- Online (for viewing and printing), at the StorageTek Customer Resource Center (CRC) web site at: **www.support.storagetek.com**
  Click on Disk Subsystems.

  Note: Access to the CRC site requires a password. To obtain a password, call StorageTek Customer Support at 800-678-4430.

V2Xf SVA Library:

- *V2Xf Shared Virtual Array General Information*
  MO9216*x*
- *V2Xf Shared Virtual Array Introduction*
  MO9217*x*
- *V2Xf Shared Virtual Array Operation and Recovery*
  MO9219*x*

- *V2Xf Shared Virtual Array Planning*
  MO9218*x*
- *V2Xf Shared Virtual Array Reference*
  MO9220*x*
- *V2Xf Shared Virtual Array System Assurance*
  MO9221*x*
- *V2Xf Shared Virtual Array Peer-to-Peer Remote Copy Configuration Guide (PPRCFCN)*
  MO9211*x*

V2X SVA Library:

- *V2X Shared Virtual Array General Information*
  MO9134*x*
- *V2X Shared Virtual Array Introduction*
  MO9135*x*
- *V2X Shared Virtual Array Operation and Recovery*
  MO9137*x*
- *V2X Shared Virtual Array Planning*
  MO9136*x*
- *V2X Shared Virtual Array Reference*
  MO9139*x*
- *V2X Shared Virtual Array System Assurance*
  MO9138*x*

V960 SVA Library:

- *V960 Shared Virtual Array General Information*
  MO5011*x*
- *V960 Shared Virtual Array Introduction*
  MO5006*x*
- *V960 Shared Virtual Array Operation and Recovery*
  MO5007*x*
- *V960 Shared Virtual Array Planning*
  MO5008*x*

- *V960 Shared Virtual Array Reference*
  MO5009*x*
- *V960 Shared Virtual Array System Assurance*
  MO5010*x*

Peer-to-Peer Remote Copy for V2X, V2X2, and V960:

- *Peer-to-Peer Remote Copy Configuration Guide*
  MP4007*x*

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- SVA

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Product Support

StorageTek Customer Services provides 24-hour assistance for questions or problems related to StorageTek products. Calls from our customers receive immediate attention from trained diagnostic specialists. Call 800-678-4430.

Refer to the document *Requesting Help from Software Support* for detailed information about contacting StorageTek for technical support in your country or geographical location.

During problem resolution, Software Support may request that you provide specific diagnostic materials. Although printed data might be acceptable, data in machine-readable form is much preferred.

VM Diagnostic Materials

Software Support may request one or more of the following kinds of diagnostic materials, depending on the nature of the problem:

- Details of the circumstances in which the problem occurred
- Console logs
- EREP type 'S' records
- ISPF panel images
- ISPF panel names and SPFLOG
- CCW I/O trace (TRSOURCE) output
- VMDUMP data
- CP dump data
- Listings of SVAA files altered during installation, including the PROFSIBS and PROFSIBA macros
- Copies of logging files

Summary of Changes

Revision K, May 2006 -- EC 132661

This revision:

- Adds support for the Capacity on Demand (COD) feature.

All significant changes are identified by a vertical bar in the left margin.

Revision L, December 2005 -- EC 132488

This revision:

- Introduces documentation changes for Virtual Cylinder Gauge support in SVAA:
  - Updates the Functional Differences table in Chapter 1.
  - Updates the Subsystem Configuration and Functional Device Selection panel examples for V2Xf and non-V2Xf subsystems in Chapter 8, adding virtual cylinder fields. The “Display-only fields” and “Column Headings” sections describe the new fields.
  - Updates the Listcfg Subsystem example for V2Xf and non-V2Xf subsystems in Chapter 9, adding virtual cylinder fields and a component level field. The “Definitions of LISTCFG Report Headings” section describes the new fields.
  - Adds a definition of virtual cylinder to the glossary.

All significant changes are identified by a vertical bar in the left margin.

Revision H, August 2005 -- EC 132346

This edition:

- Introduces documentation changes for PPRC Remote SnapShot support in SVAA:
  - Updates the Functional Differences table in Chapter 1.
  - Adds an overview of PPRC Remote SnapShot in Chapter 2.
  - Updates the Specifying SnapShot Commands section in Chapter 8.
  - Updates the SNAP VOLUME command syntax and adds an example of a PPRC Remote SnapShot command in Chapter 9.
- Moves information formerly in the Standard PPRC section to a new section titled Peer-to-Peer Remote Copy (PPRC) in Chapter 2.
- Updates the FlexVolumes and Large Volumes section in Chapter 2.
- Makes a minor correction to the description of the DEVCYLS parameter of the Define Device subcommand in Chapter 9.

All significant changes are identified by a vertical bar in the left margin.

Seventh Edition (Rev G), March 2005 -- EC 132026

This edition:

- Introduces documentation changes for configuration support of FlexVolumes (available today) and Large Volumes (SVAA support available today; microcode support available in a future release) in SVAA:
  - Updates the Functional Differences table in Chapter 1.
  - Provides an overview of FlexVolumes and Large Volumes and explains PPRC, SnapShot, and PAV restrictions with FlexVolumes and Large Volumes in Chapter 2.
  - Reiterates SnapShot restrictions with FlexVolumes and Large Volumes in Chapter 5.
  - Explains how to define FlexVolumes and Large Volumes in Chapters 7 and 8.
  - Adds the DEVCYLS parameter to the DEFINE DEVICE subcommand for FlexVolume and Large Volume support in Chapter 9.
- Adds a section on First-Time User Considerations for PAV in Chapter 2.
- Renames the section formerly titled ***Hardware Feature Enable/Disable Considerations for SVAA*** to ***Refreshing SVAA Feature or Device Mapping Status on MVS*** in Chapter 2.
- Documents removal of the requirement to specify the FORCE parameter when deleting Alias devices that are related to an offline Base device that contains user data.
- Introduces documentation changes for Remote SnapShot support in SVAA:
  - Updates the Functional Differences table in Chapter 1.
  - Provides an overview of Remote SnapShot in Chapter 2.
  - Explains Remote SnapShot restrictions in Chapter 5.
  - Explains how to use Remote SnapShot Chapters 8 and 9.

All significant changes are identified by a vertical bar in the left margin.

Sixth Edition (Rev F), April 2004 -- EC nnnnnn

This edition:

- Updates the ALTER DEVICE and DEFINE DEVICE subcommands to add the new PAVBASE parameter.
- Updates the QUERY DEVICE subcommand to indicate that the subcommand does not display information about PAV Alias devices.
- Updates the output generated by the LISTCFG SUBSYSTEM subcommand.
- Adds PAV support to the Functional Differences table on page 1-2.
- Updates the SET ECAMDEVICE subcommand to note that PAV Alias devices can not be defined as ECAM devices.

- Describes the QUIET parameter which has been added to the DISPLAY DEVICE and LISTCFG DEVICE subcommands to limit the amount of generated output.
- Updates the ALTER DEVICE AND DEFINE DEVICE subcommands to note that the CACHE and DASDFASTWRITE parameters have no effect on V2Xf operations or performance. If these parameters are specified, warning messages are issued as a reminder, but the subcommands are not rejected.
- Updates the DISPLAY DEVICE subcommand to add the new PAV parameter to display PAV relationships. The PAV parameter of DISPLAY DEVICE should not be confused with the PAVBASE parameter of the ALTER DEVICE and DEFINE DEVICE subcommands.
- Describes the FORCE parameter of the DELETE DEVICE subcommand.

All significant changes are identified by a vertical bar in the left margin.

Fifth Edition (Rev E), November 2003 EC 128861

This edition:

- Documents SVAA changes introduced with the release of the V2Xf SVA which supports only FICON connections. These changes consist of:
  - Using the term “ESCON” rather than “serial” to describe a channel type
  - Updating the Functional Differences table on page 1-2
  - Including the term “Detached Operator Panel” or “DOP” wherever the Local Operator Panel or LOP is mentioned
  - Including information regarding support of FICON channels
  - Adding the COPYLIM field to the LISTCFG SUBSYSTEM output in Chapter 8
  - Adding the COPYLIM parameter to the ALTER SUBSYSTEM subcommand in Chapter 8
  - Adding a description of PPRCFCN in Chapter 2
- Removes references to VM/ESA.
- Updates instructions for deleting functional devices in Chapters
- Adds examples to the description of SNAP VOLUME's RELOCATE parameter in Chapter 9.

All significant changes are identified by a vertical bar in the left margin.

Fourth Edition (Rev D), June 2003 EC 128585

This edition:

- Includes additional information regarding PPRC and Snap to Primary as well as for the SNAP MINIDISK and SNAP VOLUME subcommands.
- Adds an overview section to Chapter 10.
- Provides additional information about SIBVMRVA.
- Documents new return codes for SIBVMRVA.

- Makes minor corrections and edits throughout the document.

All significant changes are identified by a vertical bar in the left margin.

Third Edition (Rev C), October 2002 EC 128585

This edition:

- Documents SVAA changes introduced with the release of the V2X SVA. These consist of:
  - Increasing from 1024 to 4096 the maximum number of functional devices that can be defined within an SVA subsystem. This new number is noted wherever the maximum number of FDIDs is discussed in the text.
  - Increasing the maximum number of SSIDs from 4 to 16. As noted below, this change is accommodated with a new ISPF panel and two new parameters in the ALTER SUBSYSTEM subcommand.
- Provides a table (page 1-2) that summarizes the functional differences between the various generations of StorageTek disk storage subsystems. (The greater FDID and SSID numbers are not available on earlier subsystems.)
- Adds descriptions (in Chapter 4) of useful EXECs and macros that are included in the SIBSAMP MACLIB.
- Creates a new chapter (Chapter 6) for the Instant Format feature. Previously, the Instant Format documentation was in the SVAA VM Utilities chapter (now Chapter 10).
- Adds a brief description of the SIBDEFDV macro for defining and initializing devices as CP volumes (page 7-4).
- Revises the SUBSYSTEM CONFIGURATION panel (page 8-15) and adds the SSID DEFINITIONS panel (page 8-17).
- Revises the SSID section of the CHANNEL CONFIGURATION panel for parallel and serial channels (pages 8-23 and 8-25).
- Adds the SSIDBASE and VCUSSID parameters to the ALTER SUBSYSTEM subcommand (page 9-25). With the next release of SVAA, the existing SSID0 through SSID3 parameters will no longer be documented.
- Adds, as a new SVAA feature, a set of ISPF panels that enable you to issue SnapShot subcommands (SNAP MINIDISK and SNAP VOLUME) via the full-screen interface (pages 8-82 to 8-87). To navigate to the new panels, a SNAPSHOT option is added to the SVAA main menu (page 8-5).
- Notes two restrictions on the use of the INIT parameter of the DEFINE DEVICE subcommand: It's only for specifying SCSI devices, and cannot be used if you are running as an MVS guest under VM (page 9-35).
- Adds a description of the SIBSAMPX utility for copying SIBSAMP files (page 10-3).
- Makes minor corrections and edits throughout the document.

All significant changes are identified by a vertical bar in the left margin.

Second Edition (Rev B), January 2002 EC 123350

This edition:

- Documents SVAA changes for the V960. These include:
  - The 5+2 array size is eliminated. The only array size supported on the V960 is 13+2. To remind the user of this change, notes are added where Altering the Subsystem Configuration and Forming Arrays are discussed in Chapters 6, 7, and 8.
  - The terms “Cache Size” and “NVS size” are used throughout reports, replacing a variety of terms that were used inconsistently.

  Page 1-2 summarizes the functions that are unavailable on the V960 and 9500 SVA.
- Adds notes that you can snap a SCSI volume to an OS/390 3390 volume if the SCSI volume has been initialized, but you cannot snap an OS/390 volume to a SCSI volume (pages 5-3 and 8-98).
- Adds notes that, with the V960 (just as with the 9500 SVA), you cannot Form Test Arrays or perform the Move Test Partition operation (several places in Chapters 6, 7, and 8).
- Adds the FORCE parameter to the INITIALIZE DEVICE subcommand (page 8-50).
- Adds to the explanations of the “Physical Cap Used (MB)” terms in reports, regarding the way values are affected by snap operations (page 8-71).
- Includes several corrections and improvements in the text.

All significant changes are identified by a vertical bar in the left margin.

Chapter 1. Introduction

Shared Virtual Array Administrator (SVAA) helps you manage the Shared Virtual Array (SVA) subsystem. SVAA provides both a CMS command-line interface and an ISPF full-screen interface for configuring and administering SVA subsystems. With these same interfaces, SVAA also enables you to collect data and generate reports about the performance of SVA subsystems and traditional DASD subsystems.

SVAA consists of:

- Dynamic Configuration
- VM NCL management
- SnapShot
- Instant Format
- Data collection and reporting with Reporter

The first four of these facilities are the subject of this manual. The Reporter facility is documented in the *SVAA for VM Reporting* manual.

Dynamic Configuration

Dynamic Configuration enables you to define up to 4096 functional devices within a single SVA subsystem. You can define the functional devices to emulate different IBM and SCSI devices (3380 and 3390 device types), all within the same subsystem. You can also define and intermix larger than normal functional devices, called Large Volumes, with smaller than normal functional devices, called FlexVolumes, along with your normal sized functional devices in the same subsystem. Using the facilities described in this manual, you can also reconfigure the subsystem at any time to meet your needs.

VM NCL Management

When a VM user deletes a file, the CMS file system is updated, but the deleted data still occupies the physical tracks. Reclaiming deleted data space is critical to the performance of the SVA. The SVA needs to be told that deleted extents can be released. To reclaim the tracks in a deleted extent, SVAA provides a set of subcommands and utilities to perform NCL (net capacity load) management.

The VM NCL management facility is described in Chapter 4, “VM NCL Management.” The NCL management subcommands are documented in Chapter 9, “SVAA Subcommands and Commands” and the utilities in Chapter 10, “SVAA VM Utilities.”

SnapShot

StorageTek's data duplication method, SnapShot, duplicates data extents, minidisks, or volumes without physically moving any data. SnapShot creates only new pointers to the original minidisk or volume. This dramatically reduces the time required for data duplication operations—backups, for example. Furthermore, no additional physical disk or cache space is used in making the duplicate. The two sets of pointers treat the data as if it were two physically separate images. Updates can occur simultaneously to the original data and to the duplicate.

Chapter 5, “Using SnapShot” provides a description of the SnapShot facility.

Instant Format

The SVAA Instant Format feature enables you to replace the CMS FORMAT command with a process based upon SVA technology. This replacement is transparent to users of the FORMAT command and the format is performed in a fraction of the time it would take with conventional minidisk formatting.

Chapter 6, “Instant Format” describes the Instant Format feature.

Functional Differences between Subsystems

Earlier StorageTek disk storage subsystems supported some functions that are not available on the current SVA model. SVAA 3.1 is compatible with those earlier products; thus, the functions are documented in this manual for compatibility. The characteristics of some other functions have changed. Table 1-1 summarizes these differences.

Table 1-1 (Page 1 of 2). *Functional differences between StorageTek disk storage subsystems*

Function	Disk Storage Subsystem				
	9393 "K"	**9500 SVA**	**V960 SVA**	**V2X / V2X2 SVA**	**V2Xf/V2X4f**
Form Test Arrays	Only with microcode level below **K05.02.07.00**	No	No	No	No
Move drive modules from Test partition to Production partition	Only with microcode level below **K05.02.07.00**	No	No	No	No
Array sizes available	5+2, 13+2	5+2, 13+2	13+2	13+2	13+2
Maximum FDIDs	1024 3390-3s or 341 3390-9s	1024 3390-3s or 341 3390-9s	1024 3390-3s or 341 3390-9s	4096 3390-3s or 1365 3390-9s	4096 3390-3s or 1365 3390-9s
Range of FDIDs	0 to 3FF (0 to 1023)	0 to 3FF (0 to 1023)	0 to 3FF (0 to 1023)	0 to FFF (0 to 4095)	0 to FFF (0 to 4095)
Maximum SSIDs	4	4	4	16	16
SCSI Device Support	No	No	Yes	Yes	No
Power PPRC Bridge devices supported	No	No	Yes	Yes	No
PPRCfcn supported	No	No	No	No	Yes
PPRC Remote SnapShot	No	No	No	Yes, with microcode **B01.10.xx.00** and above	No
PAV support	No	No	No	No	Yes
FlexVolume support	No	No	No	Yes, with microcode **B01.09.xx.00** and above	Yes, with microcode **G01.04.xx.00** and above
Large Volume support	No	No	No	No	Yes, with microcode **G02.00.xx.00** and above
SVA Instant Format	No	No	Only with microcode **E02.03.14.00** and above	Yes	Yes
Virtual Cylinder Gauge support	No	No	No	Yes, with microcode **B01.11.xx.00** and above	Yes, with microcode **G02.01.xx.00** and above

Table 1-1 (Page 2 of 2). *Functional differences between StorageTek disk storage subsystems*

Function	Disk Storage Subsystem				
	9393 "K"	**9500 SVA**	**V960 SVA**	**V2X / V2X2 SVA**	**V2Xf/V2X4f**
Capacity on Demand Feature	No	No	No	Yes, with microcode **B01.12.xx.00** and above	Yes, with microcode **G02.02.xx.00** and above

Note: The level of microcode running on a specific subsystem is displayed at the Local Operator Panel (LOP) or the Detached Operator Panel (DOP). Select Software Release Level (FU11) screen. The microcode level may also be found in the output of the SIBADMIN LISTCFG SUBSYS command under COMPONENT LEVEL of COMPONENT ID=SRL.

Media Acceptance Testing is not supported in SVAA. However, the MAT partition still exists, but only as a status for drive modules that have not been allocated as spares.

Before You Begin Configuration

Before you begin defining and updating your subsystem using SVAA, you must complete a minimum subsystem configuration using the Local Operator Panel (LOP) or the Detached Operator Panel (DOP). The minimum configuration requires:

- Forming at least one production array.
- Defining at least one subsystem identifier (SSID) within the valid SSID ranges. The SSID must be *unique* among all your DASD subsystem IDs.
- Defining at least one privileged ECAM device.
- Configuring and enabling at least one channel accessible to the host operating system.

In addition to the minimum configuration steps at the LOP or DOP, you must define the SVA subsystem to the host through the I/O configuration program (IOCP).

Note: Each SVA subsystem must have a *unique* subsystem name.

See the *V2Xf Shared Virtual Array: Operation and Recovery* manual for LOP and DOP configuration procedures.

Chapter 2. Overview

Chapter Summary

Configuration Terms and Concepts

This section describes some basic terms and concepts of the configuration process.

Forming Arrays

Arrays in the SVA subsystem consist of either 7 or 15 drive modules. An array with 7 drive modules is described as a "5+2" configuration, while a 15-drive array has a "13+2" configuration. In either case, the first value refers to the portion (in terms of a number of drive modules) of the array's capacity that is available for user data. The second value ("2" in both cases) refers to the portion that is used for redundancy data.

Thus, for example, a 13+2 array provides storage capacity equivalent to:

- 13 drive modules of user data and
- 2 drive modules of redundancy data.

Note: You can define a 5+2 array only on the 9393 or 9500 SVA—not on the V2X or V960 SVA.

The size of any array you form (5+2 or 13+2) is determined by the current Array Size value for the subsystem. You can change the Array Size value with the ALTER SUBSYSTEM subcommand (see page 9-26) or the SUBSYSTEM CONFIGURATION panel (see page 8-15). However, you can override the current subsystem value with the FORM ARRAY subcommand (see page 9-56) or the FORM TEST ARRAYS panel (see page 8-77) or FORM PRODUCTION ARRAYS panel (see page 8-80) at the time you form a new array.

The First Array

Note: The first array (a *Production* array) is formed at the Local Operator Panel (LOP) or the Detached Operator Panel (DOP) as part of the initial minimum configuration.

To form the first array in the subsystem, 16 spare drive modules are required for a 13+2 array; 8 are required for a 5+2 array. In either case, the extra drive is reserved as a spare for the entire subsystem.

Forming Additional Arrays

After the first array in the subsystem has been defined at the LOP or the DOP, the number of spare drive modules required to form an additional array depends upon the current subsystem Array Size or, if you override it, the Array Size that you specify when you form the array.

To form *n* arrays (after the first array), the number of available spare drive modules required is:

`(n x 7) + 1` to form "5+2" arrays, or

`(n x 15) + 1` to form "13+2" arrays.

Partitions

Each drive module, depending upon its status, belongs to one of five partitions:

- MAT
- Spares
- Test
- Production
- Unavailable

The term *partition* indicates the current use or availability of a drive module—not a physical location. Each drive module's status is more precisely defined by a two-character status code. All status codes are listed and described in Appendix A, “Drive Module Status.”

The partitions are described briefly as follows:

- MAT

  The MAT partition consists of all newly installed drive modules and all drive modules that have just been drained (see “Draining Drive Modules” on page 2-4). Assignment to this partition occurs automatically in both cases. With the ALLOCATE SPARES subcommand, drives are moved from the MAT partition to the Spares partition for the purpose of forming arrays. Drive modules in the MAT partition cannot be accessed by host programs.

- Production

  The Production partition consists of one or more arrays used for storing and retrieving data.

- Test

  The Test partition consists of one or more arrays used for storing and retrieving *non-critical* data. This partition provides a way for you to test new drive modules before moving them in the Production partition. Before you can form a Test array, a Production array must exist.

  Note: You ***cannot*** form Test arrays on the V2Xf, V2X, V960, or 9500 SVA—only on subsystems running earlier microcode. See “Functional Differences between Subsystems” on page 1-3 for more information.

  The Test partition is normally used only for system installation and verification. Test data is physically partitioned from production data, and access time for data in the Test partition is not guaranteed to be comparable to that in the Production partition.

- Spares

  Drive modules in the Spares partition are used to form test and Production arrays, to reconstruct failed disks, and to receive data from devices being drained.

- Unavailable

  The Unavailable partition consists of any slot (physical location of a drive module) or drive module that is not under your immediate control. This includes slots that have not been installed and slots that contain inactive or broken devices.

Draining Drive Modules

A drain is the process of migrating data off one or more drive modules. When the designated drive modules have been successfully drained, they are placed in the MAT partition for removal or reallocation.

You can select drive modules to be drained in one of four ways:

- individually (by unit, tray, slot)
- by array
- by tray
- by disk array unit (DAU)

Subsystem capacity must be sufficient to receive data to be drained. If available capacity is inadequate, the drain request is rejected.

Single Drive Module Drains

To be selected for draining, a drive module must be in the Production, Test, or Spares partition and in the *active* state; that is, its status must be PA, TA, or SA. Explanations of all drive module status codes appear in Appendix A, “Drive Module Status.”

In a *single drive module* drain, all the data on the drive is moved to a spare drive module. Thus, for each Production or Test partition drive module to be drained, a spare drive module must be available. No spare drive is required to drain a spare, however; draining a spare is instantaneous.

Array Drains

In an *array* drain, all the data in the array is moved to other arrays in the partition. If FDIDs are defined for the partition there must be another array in the same partition for the drain to be performed. If no FDIDs are defined for the partition, you can drain the array.

Tray or DAU Drains

The method used to drain a tray or an entire DAU depends upon the number of spares available in addition to the 1-spare minimum requirement.

- If, for each drive module in the DAU or tray to be drained, a spare drive is available outside that DAU or tray, each drive module is drained into one of the spares.
- If the number of available spares is inadequate, the process involves draining arrays. In this case, drain activity may be observed in “associated” drive modules—modules that are part of an array being drained, but that lie outside the “target” DAU or tray.

Note: You cannot drain a DAU or tray if a Test partition is defined. (This is because DAU and tray drains can involve draining multiple arrays—and all arrays included in any one drain must belong to the same partition.)

Reporting on the Status of a Drain

SVAA allows you to generate a detailed report, by subsystem, of drain events. You obtain event reports with either the REPORT EVENTS subcommand or the sequence of event status panels.

The report shows detailed information for an event, such as the time and date of the request, percentage of the drain complete, and a list of the individual drive modules involved.

Peer-to-Peer Remote Copy (PPRC)

Peer-to-Peer Remote Copy (PPRC) is a way to synchronously propagate DASD updates from local *primary* volumes to remote *secondary* volumes of a like-device geometry. A primary volume and an associated secondary volume are called a *pair*. PPRC pairs are established and de-established using ICKDSF commands.

SVAA Requirements

The following requirements apply to both z/OS and z/VM environments:

- You cannot alter a channel interface that is used by a PPRC pair.
- You cannot alter a functional device that is part of a PPRC pair.
- You cannot delete a functional device that is part of a PPRC pair.
- You cannot alter an SSID on a subsystem on which PPRC is enabled. You must first delete all PPRC pairs and paths, have your hardware support representative disable the PPRCSnapShot hardware feature (if installed), and then disable the PPRCfcn or PPRC hardware feature. After you alter the SSID, PPRC can be re-enabled for the subsystem and paths and pairs re-established.

  Since this process may be highly disruptive to your operations, you may want to devise an SSID numbering scheme that will not need to change over time and that can accomodate the addition of new subsystems without the need to disrupt PPRC pairs and paths or the status of SVA hardware features.
- The PPRCfcn or PPRC hardware feature must be enabled before the PPRCSnapShot hardware feature can be enabled; conversely, the PPRCSnapShot hardware feature must be disabled before the PPRCfcn or PPRC hardware feature can be disabled.

z/VM Requirements for PPRC

The following requirements apply to z/VM environments only:

- Your z/VM user directory must include the following statement to be able to issue PPRC path and pair establish and delete commands:

  ```
  STDEVOPT DASDSYS DATAMOVER
  ```

  See IBM's *z/VM CP Planning and Administration* for more information about this requirement.

SVAA Considerations

Some important considerations for SVAA and PPRC operations are as follows:

- Do not issue a SET ECAMDEVICE subcommand against a PPRC primary or secondary volume; i.e., do not try to define a PPRC volume as an ECAM device.

- Do not issue an ICKDSF PPRCOPY ESTPAIR command against an ECAM device; that is, do not attempt to establish a PPRC pair that includes an ECAM device.
- Vary offline, to all systems, all PPRC secondary volumes.

Standard Peer-to-Peer Remote Copy (PPRC)

Standard PPRC

Standard PPRC is supported only on the StorageTek 9500; Power PPRC is supported on the StorageTek V960, V2X, and V2X2.

In general, users may see significantly shorter PPRC synchronization times for SVA volumes than for volumes on traditional DASD.

Power PPRC

The standard version of PPRC is limited to ESCON distances of approximately 40 kilometers, and suffers severe performance penalties if connected to a long distance medium via a converter/multiplexer box. This is due to the extreme "chatty" nature of the ESCON protocol, inefficient use of the PPRC link, and the current limitation on the speed of light.

Standard PPRC is supported only on the StorageTek 9500; Power PPRC is supported on the StorageTek V960 and V2X.

Power PPRC improves standard PPRC performance and may extend the distance limit by using one of the following modes of operation:

- Direct Mode -- still uses ESCON connections but improves performance by using *Data Bridge* devices. These devices almost completely eliminate ESCON "chatter" by serving as staging areas for the continuous transmission of data. Direct Mode requires one Data Bridge device on each subsystem associated in a peer-to-peer relationship.
- WAN Mode -- improves PPRC performance by using Data Bridge devices, but also increases distance limits by using multiplexers and long distance high-speed communication lines like T1/T3. *Status Bridge* devices are used to transmit acknowledgments that data was successfully received. WAN Mode requires one Data Bridge device and one Status Bridge device on each subsystem associated in a peer-to-peer relationship.

Power PPRC also surpasses standard PPRC through the concept of a *Bridge pair*, a PPRC pair between two Bridge devices. Think of data traffic between each standard PPRC pair as driving on a two-lane road, stuck behind a large, slow-moving truck.

With Power PPRC, a Data Bridge pair acts like a multi-lane interstate highway for all standard PPRC pairs between two subsystems, letting you get to your destination faster, more efficiently, and with less aggravation.

Bridge Device Definition Requirements

Bridge devices are subject to the following requirements:

- Bridge devices must be defined to the operating system and hardware using IOCP. It is recommended that all Bridge devices be defined to be offline to avoid operator intervention at IPL time.

CAUTION:
Bridge devices are not intended for use as data storage devices. You should not attempt to ICKDSF initialize and/or vary any Bridge device online to a host operating system, since all user and system data can be destroyed during the establishment of a Power PPRC Bridge pair.

- A previously unused FDID must be used to define a Bridge device. The new DATABRIDGE and STATUSBRIDGE parameters of the DEFINE DEVICE subcommand must be used to specify the type of Bridge device to be defined.
- FDIDs already in use cannot be modified for use as Bridge devices.
- If you want to use a specific FDID as a Bridge device and it is already in use for data storage, first move the data elsewhere, then delete and redefine the desired FDID as a Bridge device of the appropriate type.
- A Data Bridge device must be defined as a 3390-9 CKD device.
- A Status Bridge device must be defined as a 3390-3 CKD device.
- Bridge devices must be defined with CKDENABLE(YES) and CKDREADWRITE(YES) attributes (which are the defaults) to be able to successfully establish a Bridge pair.
- Bridge devices cannot be defined as Large Volumes or FlexVolumes.

Operational Considerations

To use Power PPRC, there are only a few operational considerations to be aware of. The principal consideration is that Bridge pairs must be established first, and deleted last.

Other considerations are reflected in the following sample operational procedures provided as a general guide for implementing Power PPRC at your site.

Setting Up a Power PPRC Direct Mode Environment

- Define one Data Bridge device on subsystem A and another on subsystem B.
- Establish a PPRC path from subsystem A to subsystem B using the ICKDSF PPRCOPY ESTPATH command.
- Establish a Bridge pair between the Data Bridge devices using the PPRCOPY ESTPAIR command.
- Determine which data storage devices on each subsystem are to be used to establish PPRC pairs (and remember that data on the Secondary device can be overwritten when the pair is established!).
- Establish PPRC pairs between the desired devices using the PPRCOPY ESTPAIR command.

Breaking Down a Power PPRC Direct Mode Environment

- Delete all PPRC pairs between non-Bridge devices using the ICKDSF PPRCOPY DELPAIR command.
- Delete the Bridge pair between the Bridge devices using the PPRCOPY DELPAIR command.
- Optionally, delete the PPRC path from subsystem A to subsystem B using the PPRCOPY DELPATH command.

Setting Up a Power PPRC WAN Mode Environment

- Define one Data Bridge device on subsystem A and another on subsystem B.
- Define one Status Bridge device on subsystem A and another on subsystem B.
- Establish **two** PPRC paths from subsystem A to subsystem B using the ICKDSF PPRCOPY ESTPATH command. Two paths are required—one for Data Bridge use and the other for Status Bridge use.
- Establish a Bridge pair between the Data Bridge devices using the PPRCOPY ESTPAIR command. This also implicitly reverses the direction of one of the PPRC paths so that now one path is from subsystem A to subsystem B for the Data Bridge, and the other path is from subsystem B to subsystem A for the Status Bridge. The Status Bridge pair is then implicitly established.
- Determine which data storage devices on each subsystem are to be used to establish PPRC pairs (and remember that data on the Secondary device can be overwritten when the pair is established!).
- Establish PPRC pairs between the desired devices using the PPRCOPY ESTPAIR command.

Breaking Down a Power PPRC Direct Mode Environment

- Delete all PPRC pairs between non-Bridge devices using the ICKDSF PPRCOPY DELPAIR command.
- Delete the Bridge pair between the Bridge devices using the PPRCOPY DELPAIR command. This also implicitly deletes the Status Bridge pair and reverses the Status Bridge path from subsystem B to subsystem A so that it once again appears as it was originally established from subsystem A to subsystem B.
- Optionally, delete the two PPRC paths from subsystem A to subsystem B using the PPRCOPY DELPATH command.

Snap to Primary

Before the PPRCSnapShot hardware feature and Snap to Primary became available, data could only be snapped between two non-PPRC (simplex mode) devices or *from* a PPRC Primary device to a simplex device, but never from a simplex device *to* a PPRC Primary device.

With the PPRCSnapShot hardware feature but without Snap to Primary, data can be snapped between two non-PPRC (simplex mode) devices or from one PPRC Primary device to another PPRC Primary device when both pairs are established to the same secondary StorageTek V960 or V2X.

When both the PPRCSnapShot hardware feature and Snap to Primary are present, all of the previously mentioned capabilities are supported plus the new capability of snapping data from non-PPRC simplex devices *to* PPRC Primary devices.

Note: The PPRCSnapShot hardware feature is a pre-requisite for Snap to Primary.

Operational Considerations

Snap to Primary has only one operational consideration to be aware of. Multiple successive Snap to Primary operations to the same PPRC Primary may experience failures when the PPRC Primary is in the Duplex Pending state. This consideration applies to both data set and volume level Snap to Primary operations to the same PPRC Primary volume.

You can choose to wait until the PPRC pair has returned to the Duplex state before attempting the next Snap to Primary or use the following technique:

1. Establish the appropriate PPRC paths as you normally would.
2. Establish the appropriate PPRC pairs and allow them to fully synchronize into the Duplex state.
3. Suspend the appropriate PPRC pairs.
4. Execute Snap to Primary operations to the suspended PPRC Primaries.
5. Resynchronize (unsuspend) the PPRC pairs using the CESTPAIR command with the MODE(RESYNC) parameter and allow them to fully synchronize into the Duplex state.
6. Re-suspend the appropriate PPRC pairs.
7. Repeat steps 4-6 as needed.

PPRCfcn

PPRCfcn replaces Standard PPRC and PowerPPRC and is supported only on the V2Xf. PPRCSnapShot continues to be a separate feature and includes support for the Snap to Primary function.

PPRCfcn is neither pure FICON nor pure Fibre Channel. Instead, it is a StorageTek-proprietary, upper-level protocol based on both. As such, PPRCfcn natively supports longer point-to-point distances than ESCON. PPRCfcn also performs significantly better than ESCON due to less channel overhead and the increased size of data frames.

PowerPPRC Bridge Devices and SCSI Devices

PowerPPRC Bridge devices and SCSI devices are no longer supported on the V2Xf. If you plan to upgrade an existing V2X or V2X2 subsystem to a V2Xf, you must perform the following before first starting the hardware upgrade:

1. Delete all non-Bridge PPRC pairs on the affected V2X or V2X2
2. Delete all Bridge PPRC pairs on the affected V2X or V2X2
3. Delete all PPRC paths on the affected V2X or V2X2
4. Delete all Bridge devices

Note: Failure to delete all Bridge devices before the hardware upgrade will result in the inability to IML the V2Xf. A backout of the hardware upgrade, deletion of all Bridge devices, and a repeat of the hardware upgrade is then required to recover from this condition.

System Adapter IDentifier (SAID) Values

The System Adapter IDentifier (SAID) values have changed for the V2Xf. These values are specified in the LINK parameter of the ICKDSF PPRCOPY ESTPATH command. These changed values are documented in the *V2Xf Shared Virtual Array Peer-to-Peer Remote Copy Configuration Guide*

PPRC Remote SnapShot

The primary benefit of PPRC Remote SnapShot is that you can now use SnapShot to replicate volumes on a remote SVA subsystem without the need for direct host connectivity to the remote subsystem.

PPRC Remote SnapShot allows a PPRC Secondary volume to be snapped to another functional volume on the same remote SVA subsystem as the Secondary volume. A request for a PPRC Remote SnapShot is sent to a Source (PPRC Primary) volume on the local subsystem, is transferred to the PPRC Secondary volume on the remote subsystem using the PPRC connection, and then the Secondary volume on the remote subsystem is snapped to the designated Target volume on the remote subsystem.

Note: A PPRC Remote SnapShot can be performed on a single subsystem assuming the necessary physical "loopback" connection has been made. While a single subsystem configuration is not recommended for disaster recovery, such a configuration may be useful for testing purposes only.

The SVAA SNAP VOLUME subcommand has been enhanced to allow a remote functional volume to be specified as the Target volume.

PPRC Remote SnapShot Operational Requirements

PPRC Remote SnapShot has the following requirements:

- PPRC Remote SnapShot is a volume-level operation only; PPRC Remote SnapShot of data sets is not supported.
- PPRC Remote SnapShot is supported between two V2X subsystems, between two V2X2 subsystems, or between V2X and V2X2 subsystems
- The PPRCSnapShot hardware feature must be installed on the both the local and remote subsystems.
- The microcode support for PPRC Remote SnapShot must be installed on both the local and remote subsystems.
- The SVAA PTF support (L2P00BI for MVS, L2P00BJ for VM) and SnapShot PTF support (L2P00AF for MVS, L2P00AG for VM) for PPRC Remote SnapShot must be installed.

General Requirements for Source, Secondary, and Target Volumes

1. The volumes must be defined as CKD or SCSI volumes
2. The volumes must be enabled - CKDENA(YES) or SCSIENA(YES)
3. The volumes must be write enabled - CKDRW(YES) or SCSIRW(YES)
4. The volumes cannot be PAV Aliases
5. The volumes cannot be PowerPPRC Bridge volumes

Source Volume Requirements

1. A Source volume must be a PPRC Primary volume in the Duplex state. A Source volume cannot be a PPRC Secondary volume, a simplex (non-PPRC) volume, or a PPRC Primary volume in the Suspended or Pending states
2. A Source volume may be online or offline to host systems

Secondary Volume Requirements

1. A Secondary volume must be a PPRC Secondary volume in the Duplex state. A Secondary volume cannot be a simplex (non-PPRC) volume or a PPRC Primary volume
2. A Secondary volume must be offline to all host systems (i.e., no path groups established)
3. A Secondary volume must have the same virtual device type (3380, 3390, or SCSI) as the Source volume

Target Volume Requirements

1. A Target volume must be a simplex (non-PPRC) volume. A Target volume cannot be a PPRC Primary volume or a PPRC Secondary volume
2. A Target volume must be offline to all host systems (i.e., no path groups established)
3. A Target volume must have the same virtual device type (3380, 3390, or SCSI) as the Secondary volume

PPRC Remote SnapShot Operational Considerations

Users of PPRC Remote SnapShot should be aware of the following:

- A PPRC pair cannot be established between volumes with different numbers of cylinders if the Primary volume has a larger number of cylinders than the Secondary volume.
- A PPRC pair can be established between volumes with different numbers of cylinders if the Secondary volume has a larger number of cylinders than the Primary volume, but this is not recommended for the following reasons:
  - This prevents the use of P/DAS to swap volumes back to the original configuration since the Secondary volume is now smaller than the Primary; configuration symmetry is recommended for ease of diaster recovery
  - Additional user action (ICKDSF REFVTOC) is required on z/OS systems to be able to use the extra capacity on the Target volume since the VTOC/VTOCIX copied from the Secondary volume does not "know" about this extra space

Performing PPRC Remote SnapShots

Use the following steps as a guide to setting up and performing PPRC Remote SnapShots:

1. If you already know what volume you want to use as a Source volume on the local subsystem, proceed to the next step, otherwise:

a. Define the Source volume on the local subsystem. This will become a PPRC Primary volume once you fully establish the PPRC connection (path and pair)

b. Initialize the newly-defined Source volume using ICKDSF

c. Vary the newly-defined Source volume online

d. Place your user data on the newly-defined Source volume

2. If you already know what volume you want to use as a Secondary volume on the remote subsystem (Warning: any data that exists on this volume will be destroyed when the PPRC pair is established) proceed to the next step, otherwise:

   a. Define the volume on the remote subsystem that will become your PPRC Secondary volume once you fully establish the PPRC connection. This volume must have the same virtual device type (3380, 3390, or SCSI) as the Source volume

3. If you already know what volume you want to use as a Target volume on the remote subsystem (Warning: any data that exists on this volume will be destroyed when the PPRC Remote SnapShot is performed) proceed to the next step, otherwise:

   a. Define the Target volume on the remote subsystem. This is the designated target of the SnapShot and must have the same virtual device type (3380, 3390, or SCSI) as the Source and Secondary volumes

4. Establish the appropriate PPRC path(s) between the local and remote subsystems (refer to the PPRC Configuration Guide) using either the TSO CESTPATH command (MVS only) or the ICKDSF PPRCOPY ESTPATH command (MVS or VM)

5. Establish the PPRC pair between the Source (Primary) and Secondary volumes (refer to the PPRC Configuration Guide) using either the TSO CESTPAIR command (MVS only) or the ICKDSF PPRCOPY ESTPAIR command (MVS or VM). On z/OS systems, an IEA494I message should be issued that confirms the pair is in a Pending state. For example:

   ```
   IEA494I 8042,SW8042,PPRC PAIR PENDING,SSID=8000,CCA=42
   ```

   On z/VM systems, there is no equivalent message.

6. Wait for the PPRC pair to transition from the Pending state to the Duplex state. On z/OS systems, an IEA494I message should be issued that confirms the pair has transitioned to the Duplex state. For example:

   ```
   IEA494I 8042,SW8042,PPRC PAIR FULL DUPLEX,SSID=8000,CCA=42
   ```

   On z/VM systems, you should see the following messages:

   ```
   ICK02203I PPRCOPY ESTPAIR FUNCTION COMPLETED SUCCESSFULLY
   ICK02231I DEVICE IS NOW A PEER TO PEER REMOTE COPY VOLUME
   ```

7. Perform the PPRC Remote SnapShot operation by issuing a SVAA SNAP VOLUME subcommand or by using the SVAA ISPF panels to have the subcommand issued on your behalf. Refer to Chapter 8 of *SVAA for OS/390 Configuration and Administration* or Chapter 9 of *SVAA for VM Configuration and Administration* for the syntax of the SNAP VOLUME subcommand and an example of a subcommand used to perform a PPRC Remote SnapShot.

For More Information about PPRC

For more information, refer to the section in this publication entitled *How to Obtain Software Documentation* or to the following publications located on the StorageTek Customer Resource Center (CRC) web site at **www.support.storagetek.com**:

- For Standard PPRC, PowerPPRC, PPRCSnapShot, Remote SnapShot, and Snap to Primary:

  9500 thru V2X2 Peer-to-Peer Remote Copy Configuration Guide

- For PPRCfcn:

  V2Xf Peer-to-Peer Remote Copy Configuration Guide

For more information about PPRC in general, see IBM's *DFSMS Advanced Copy Services* and the *DFSMS Remote Copy Administrator's Guide and Reference* documentation.

Parallel Access Volume (PAV) Support

The V2Xf supports the definition and use of Parallel Access Volumes (PAV). PAV provides the ability to assign multiple unit addresses or UCBs to a functional device through the use of Base and Alias devices.

The Base device is the device on which data is stored. The Alias device represents an alternate unit address from which the Base volume can be accessed.

With PAV, instead of using one unit address to access a volume, the host can use several unit addresses: the address of the Base device and any Alias device. Multiple users or applications on the same system can perform multiple I/Os to the same volume. PAV's ability to perform multiple concurrent I/Os to a volume results in a significant reduction in IOS queue times and volume contention. Consequently, I/O response times are also reduced and throughput is increased.

PAV has been implemented on OS/390 and z/OS platforms. Although z/VM does not exploit PAV, z/VM does support PAV for its OS/390 and z/OS guests.

First-Time User Considerations for PAV

- A new hardware feature, available only on the V2Xf, must be installed on your V2Xf subsystem to enable PAV support. Until the hardware feature is installed, you won't be able to define Alias devices.
- There is no operational difference between CKD functional volumes that you defined before you installed the PAV hardware feature and CKD functional volumes that you will define after you install the PAV hardware feature.
- You can confirm that the PAV hardware feature is installed by using SVAA. The feature will appear as "PAV" on the ISPF Subsystem Configuration Panels (SIBCA00 or SIBCR00) and on the Level 3 output of a LISTCFG SUBSYSTEM subcommand. You may need to reinitialize SVAA for it to recognize that the hardware feature was installed. See ***Refreshing SVAA Feature or Device Mapping Status on MVS*** later in this chapter to learn how to do this.
- If you fully defined your subsystem with 1365 3390-9 volumes or 4096 3390-3 volumes (or some maximal combination thereof) before you installed the PAV hardware feature and now want to install the feature, define some Alias devices, and start reaping the performance benefits of PAV, you need to make room for your Alias devices. The ***Non-PAV to PAV Migration Process*** (below)

will help you accomplish this and help insure that your SVAA and HCD definitions always match. See ***PAV Configuration Considerations*** later in this chapter on the importance of keeping your SVAA definitions consistent with your HCD definitions.

- To disable the PAV hardware feature on a subsystem, you will have to vary all Base devices on the subsystem offline to all host operating systems to "unbind" the Alias devices, then delete all of the Alias devices on the subsystem. Only then can the PAV hardware feature be disabled. Because all Base devices on the subsystem must be varied offline, this process may be disruptive to your operations, so the decision to disable the PAV hardware feature on a subsystem should not be taken lightly. The disablement process may be disruptive but is necessary to insure the integrity of your data.

Non-PAV to PAV Migration Process

1. Determine how many Alias devices that you need for each SVA Virtual Control Unit (a VCU = 256 devices). Remember that Alias devices "belong" only to the VCU they are defined in. For example, VCU 2 might consist of 64 Base devices and 192 Alias devices. The number of Alias devices that you need really depends on your current I/O workload and on your own individual performance needs.
2. Identify which CKD functional volumes that you want to turn into Alias devices. Many users reserve the lower range of devices in a VCU for Base devices and the upper range for Aliases. For example, in VCU 2, you might reserve FDIDs 200-23F for 64 Base devices, and FDIDs 240-2FF for 192 Alias devices.
3. Install the SVAA support PTFs for PAV. (L2P00AJ for MVS, L2P00AK for VM). HIPER PTF L2P00B5 (MVS only) is also strongly recommended.
4. Install the SVA hardware feature for PAV.
5. Move the data from the CKD functional volumes that you want to turn into Alias devices to the other CKD functional volumes that will remain Base devices.
6. Vary offline to all host operating systems the CKD functional volumes that you want to turn into Alias devices.
7. Delete these offline CKD functional volumes using the SVAA ISPF panels or the DELETE DEVICE subcommand. You won't be able to delete a functional volume unless it is varied offline to all host operating systems.
8. Have your systems programmer change the HCD definitions for these deleted devices from Bases to Aliases, but remember that the device type (3380 or 3390) of the Alias must be the same as the device type of the Base. 3380 Bases cannot utilize 3390 Aliases; 3390 Bases cannot utilize 3380 Aliases. For example, unit address 7240 is currently genned as a 3390B. Use HCD to change it to a 3390A. Also have your systems programmer review the appropriateness of the HCD WLMPAV parameter setting for the new Alias devices at this time.
9. Have your systems programmer activate the new HCD definitions. Device-level changes can usually be done dynamically and without a system or application outage. The key HCD requirement is that the device to be changed must be offline to all host operating systems. If you are following this process, you have already satisfied that requirement.

10. Reinitialize SVAA for it to recognize that the HCD device definitions have changed. Take one of the actions listed in ***Refreshing SVAA Feature or Device Mapping Status on MVS*** later in this chapter.
11. Define the new Alias devices using the SVAA ISPF panels or the DEFINE DEVICE subcommand and relate each new Alias device to an existing Base device.
12. Use RMF reports or other performance-monitoring software products to confirm that PAV is in use and to quantify the performance benefit of PAV on your operations.

For additional information about PAV, consult IBM's *TotalStorage Enterprise Storage Server Model 800* documentation.

PAV Configuration Considerations

Important!

Always keep your V2Xf Base and Alias device definitions consistent with your HCD Base and Alias device definitions.

PAV Differences

On the V2Xf, PAV Base devices are exactly the same as the CKD functional volumes that you have used on previous SVA hardware. PAV Alias devices are new and do not actually consume virtual capacity or additional back-end storage.

Other differences in SVAA operation for PAV Alias devices are as follows:

- Alias devices cannot be the source or target of an volume or minidisk snap.
- Alias devices are excluded from all SRP data collection, so performance and space utilization statistics are not reported for Aliases.
- Even though the number of cylinders cannot be specified for an Alias device itself, an Alias device can be defined and related to a Base device that is a Large Volume or a FlexVolume.
- In ISPF panel and SVAA command output, the number of cylinders and functional capacity of Alias devices is always reported as zero.
- Alias devices cannot be used as ECAM devices.
- To use Alias devices under VM (e.g., ATTACH them to guest operating systems), the devices must be varied online.
- Alias devices cannot be initialized using SVAA. As a rule, you should not attempt to initialize Alias devices using ICKDSF because of the potential data integrity exposure when a genned Base is misdefined to the V2Xf as an Alias.
- The CACHE, CKDENABLE, CKDREADWRITE, DASDFASTWRITE, NAME, and PRIVILEGEDECAM attributes cannot be changed for Alias devices.
- You cannot change the PAV Type (Base or Alias) of a device without deleting and redefining the device. If you change the PAV Type of a device, make sure that the change is consistent with your device definitions in HCD.
- The device type (3380 or 3390) of an Alias device must always match that of its related Base device. This requirement does not prevent an Alias from being defined to a Base device with a larger or smaller capacity, including a Large Volume or a FlexVolume, but it does prevent any attempt to define an Alias of

one device type to a Base of a different device type. For example, a 3380-J Alias cannot be defined and related to a 3390-9 Base, but a 3390-9 Alias can be defined and related to a 3390-3 Base.

This requirement also does not prevent an Alias from being reassigned to a Base device with a larger or smaller capacity, including a Large Volume or a FlexVolume, but it does prevent any attempt to reassign an Alias of one device type to a Base of a different device type. For example, a 3380-J Alias cannot be reassigned to a 3390-9 Base, but a 3390-9 Alias can be reassigned to a 3390-3 Base.

- An Alias device can be reassigned to a different Base device either automatically by the Workload Manager (WLM) component of an OS/390 or z/OS operating system, or manually by using the ALTER DEVICE subcommand. An Alias must be assigned to a Base device when the Alias is intially defined.
- A Base device is not required to have any related Alias devices; if a Base does have Aliases, they must all be defined within the same Virtual Control Unit (VCU); crossing VCU boundaries is not allowed. Since a VCU has a maximum of 256 devices, one Base device can be defined with up to 255 Aliases, or 128 Base devices can be defined with 1 Alias each, etc..
- An Alias device can be defined only ***after*** its related Base device is defined. You cannot define a Base and its related Aliases in a single define operation. This ensures data integrity and the correct interaction of the V2Xf with host operating systems.
- The rules for deleting Base and Alias devices are as follows:
  - To delete a CKD or SCSI device (non-PAV, has no Aliases)
    1. Vary the device offline to all host operating systems
    2. Delete the device
  - To delete a PAV Base device that does not have Aliases
    1. Vary the Base device offline to all host operating systems
    2. Delete the Base device
  - To delete a PAV Base device that has Aliases
    1. Vary the Base and Alias devices offline to all host operating systems
    2. Delete each Alias related to the Base; use DISPLAY DEVICE or LISTCFG DEVICE to determine the Aliases to be deleted. You cannot delete a Base and its related Aliases in a single delete operation.
    3. Delete the Base device
  - To delete a PAV Alias device that is related to an online Base
    1. Vary the Base and Alias devices offline to all host operating systems
    2. Delete the Alias device
  - To delete a PAV Alias device that is related to an offline Base
    1. Vary the Alias device offline to all hosts
    2. Delete the Alias device
  - To delete a misdefined PAV Alias (genned as Base, defined as Alias)

1. Vary the Alias device offline to all hosts
2. Delete the Alias device

   Note: In this special case only, it does not matter whether the Base is online or offline. Since the host operating system did not establish a path group to the Alias when it was misdefined, it can be safely deleted without requiring that the Base device be varied offline.

Refreshing SVAA Feature or Device Mapping Status on MVS

After the SnapShot, PPRC, PAV, or PPRCSnapShot features have been enabled or disabled on the SVA hardware, the SVAA software generally does not recognize that a feature change has occurred.

If you configure channels online with the MVS CONFIG command, or attach devices to a MVS guest system from VM, and these devices were not accessible at the time the SVAA subsystem was initialized, SVAA has no knowledge of these devices and considers them as not defined to the host it is running on.

To make SVAA recognize that the availability of a hardware feature has changed, or refresh SVAA's knowledge of newly accessible devices that have not yet been varied online, take one of the following two actions:

- Partially reinitialize the SVAA subsystem using the SIBMVSS program that specifies an ALTER SSNAME command of the following form:

  ALTER SSNAME(NAME(*ssname*) REINIT RIM(DMQ)

  For more information about SIBMVSS, refer to the step titled “Initializing the SVAA Subsystem with SIBMVSS” in the *SVAA for OS/390 Installation, Customization, and Maintenance* guide. If the SVAA address space (the SIBMAIN program) is running, it does not need to be stopped to reinitialize the SVAA subsystem.

- Terminate and initialize the SVAA subsystem using the SIBMVSS program.

  Note: If the SVAA address space (the SIBMAIN program) is running, it must be stopped before the SVAA subsystem can be terminated.

Note that an IPL of the relevant MVS system and a subsequent initialization of the SVAA subsystem also accomplishes a refresh of feature and device information, but this action should be taken only as a last resort.

FlexVolumes and Large Volumes

FlexVolume support allows the definition of variable sized 3380 or 3390 functional devices. Large Volume support allows the definition of 3390-9 functional devices with 32760 cylinders. See Table 1-1 for a summary of the SVA models and microcode levels that support Large Volumes and FlexVolumes.

FlexVolume Operational Requirements

FlexVolumes have the following requirements:

- FlexVolumes are supported only on V2X, V2X2, and V2Xf subsystems.
- The microcode support for FlexVolumes must be installed on a V2X/V2X2/V2Xf subsystem before FlexVolumes can be defined.

- The SVAA PTF support (L2P00BF for MVS, L2P00BG for VM) for FlexVolumes and Large Volumes must be installed before FlexVolumes can be defined using SVAA.
- The maximum virtual capacity of a V2X, V2X2, or V2Xf subsystem is not increased by FlexVolume support. You cannot define more than 1365 3390-9 or more than 4096 3390-3 functional devices just because some or all devices are defined as FlexVolumes.
- FlexVolumes cannot be defined as SCSI, PPRC Bridge, or PAV Alias devices.
- FlexVolumes must be defined as 3380 or 3390 CKD devices subject to the following further requirements:
  - FlexVolumes cannot be defined as 3390-1 or 3390-2 devices in order to maintain compatibility with the IBM 2105 ESS
  - A 3380-J can only be defined with 1-885 cylinders
  - A 3380-KE can only be defined with 886-1770 cylinders
  - A 3380-K can only be defined with 1771-2655 cylinders
  - A 3390-3 can only be defined with 1-3339 cylinders
  - A 3390-9 can only be defined with 3340-10017 cylinders if the Large Volume microcode support is not installed or the subsystem is a V2X or V2X2
  - A 3390-9 can only be defined with 3340-32760 cylinders if the Large Volume microcode support is installed and the subsystem is a V2Xf or V2X4f

    Note: A 3390-9 device defined with 32759 cylinders is technically a FlexVolume; a 3390-9 device defined with 32760 cylinders is technically a Large Volume.

Large Volume Operational Requirements

Large Volumes have the following requirements:

- Large Volumes are supported only on V2Xf subsystems.
- The microcode support for Large Volumes must be installed on a V2Xf subsystem before Large Volumes can be defined.
- The SVAA PTF support (L2P00BF for MVS, L2P00BG for VM) for FlexVolumes and Large Volumes must be installed before Large Volumes can be defined using SVAA.
- The maximum virtual capacity of a V2Xf subsystem is not increased by Large Volume support. You can define approximately 417 32760 cylinder devices - the equivalent to 1365 3390-9 devices or 4096 3390-3 devices.
- Large Volumes must be defined as 3390-9 CKD devices with 32760 cylinders.
- Large Volumes cannot be defined as SCSI, PPRC Bridge, or PAV Alias devices.

SnapShot and PPRC Considerations for FlexVolumes and Large Volumes

Large Volumes and FlexVolumes do not change the current behavior or impose any new restrictions on SnapShot or PPRC, but users of Large Volumes and FlexVolumes should be aware of the following:

- Volume SnapShot between devices with different numbers of cylinders is not supported.
- A PPRC pair cannot be established between devices with different numbers of cylinders if the Primary device has a larger number of cylinders than the Secondary device.
- A PPRC pair can be established between devices with different numbers of cylinders if the Secondary device has a larger number of cylinders than the Primary device, but this is not recommended for the following reasons:
  - This prevents the use of P/DAS to swap devices back to the original configuration since the Secondary device is now smaller than the Primary; configuration symmetry is recommended for ease of diaster recovery
  - Additional user action (ICKDSF REFVTOC) is required on z/OS systems to be able to use the extra capacity on the Secondary volume since the VTOC/VTOCIX copied from the Primary volume does not "know" about this extra space

Chapter 3. SVAA in the VM Environment

Chapter Summary

SVAA Input

In the VM environment, there are two basic ways of entering input to SVAA:

- With SVAA subcommands.

  Chapter 9, “SVAA Subcommands and Commands” is an alphabetical reference of the SVAA subcommands and their parameters.

- With the SVAA ISPF panels, as defined for your installation.

  Chapter 8, “Using the SVAA Panels” explains how to use the panels to enter and update SVA configuration data, view the current configuration, and initiate a drain or check its status.

SVAA provides two commands, which you issue from CMS, to establish the environment for entering subcommands or accessing the ISPF panels:

SIBADMIN The SIBADMIN command creates the environment in which you can issue SVAA subcommands.

SIBMENU SIBMENU is a CMS EXEC that starts ISPF panels.

SVAA Subcommands

You can issue SVAA subcommands in several ways:

- From within SVAA initialization routines (SIB macros)
- Interactively, from the CMS command environment or at the **SIB:** prompt (which appears when you enter the **SIBADMIN** command by itself)
- From within a REXX EXEC or a SIB macro
- On the command line of the SVAA panels (preceded by **SIB**) See “Using the SVAA Panels” on page 8-2.

SVAA Initialization Routines

Whenever you start the SIBADMIN program, SVAA executes an initialization routine that sets the conditions under which later subcommands in the program will be executed. The routine is an SVAA profile macro (a SIB macro), called PROFSIBA SIB, which is similar in action to the PROFILE EXEC in CMS. (Part of the sample macro appears in Figure 3-1 on page 3-3.)

In the profile macro, you can specify SVAA subcommands, as well as system commands. The sample macro inlcudes two SVAA subcommands that are executed at the time of initialization: SET ECAMDEVICE (required) and SET DEVICEMAP (optional).

- The SET ECAMDEVICE subcommand (see page 9-128) designates one or more devices to be used for communication between the host and the SVA subsystem.
- When SET DEVICEMAP(ON) (see page 9-126) is invoked, diagnose I/O is performed to the ECAM devices to identify device characteristics. This process is called device mapping and its purpose is to associate an SVA functional device with a host device address and volser. Device mapping is discussed in more detail in the *SVAA for VM Installation, Customization, and Maintenance* guide.

```
/*
**  Access SVA subsystem SYSA and SYSB for SVAA Communication.
*/
/*  call cpcmd "ERRMSG LINK $SUBSYS$ 200 200 MW"
**  call cpcmd "ERRMSG LINK $SUBSYS$ 210 210 MW"
**
**  "SET ECAMDEVICE (200 210)"
*/

/*
**  SVAA Device Mapping.
**  Caution - refer to the SVAA Device Mapping section
**            of the SVAA for VM Installation Guide for
**            behavior in non-contiguous device ranges.
*/

/*
**  "SET DEVICEMAP (ON)"
*/
```

Figure 3-1. *Sample PROFSIBA SIB file*

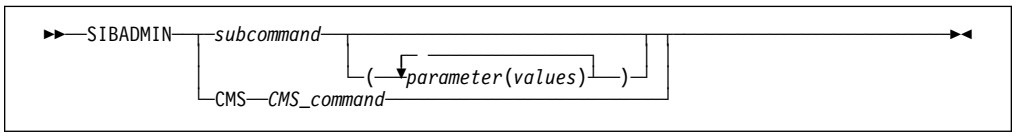
Issuing Subcommands Interactively

You can issue subcommands interactively from either the **CMS** prompt or the **SIB:** prompt.

From the CMS Prompt

To issue an SVAA subcommand from the **CMS** prompt, enter the SIBADMIN command followed by the subcommand. You can also follow **SIBADMIN** with **CMS** and a CMS command.

The syntax is:



Thus, SIBADMIN can be followed by:

- Any of the SVAA subcommands described in Chapter 9, “SVAA Subcommands and Commands.”
- Any of the SVAA subcommands described in the *SVAA for VM Reporting* manual.
- A CMS command, when prefixed by “CMS.”

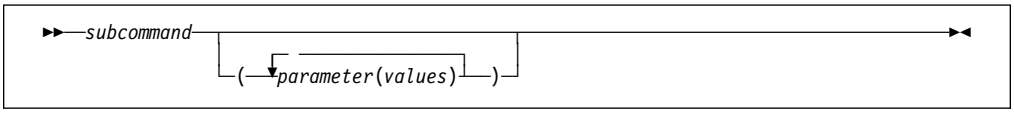
The maximum allowable length of a SIBADMIN command, including its subcommands and parameters, is 950 characters, including blanks.

Note: You can also issue SIBADMIN commands in a REXX EXEC (see section below).

From the SIB Prompt

In CMS, a subcommand addressing environment called **SIB** is established when SIBADMIN is invoked. At the **CMS** prompt, enter **SIBADMIN** by itself. This causes SVAA to display the **SIB:** prompt, at which you can enter SVAA subcommands directly.

The syntax is:



The **SIB:** prompt can be followed by:

- Any of the SVAA subcommands described in Chapter 9, “SVAA Subcommands and Commands.”
- Any of the SVAA subcommands described in the *SVAA for VM Reporting* manual.

Type **end** to leave the SIB addressing environment.

Note: You can also issue SVAA subcommands in a SIB macro (see section below).

Issuing SVAA Subcommands in EXECs or Macros

You can issue SVAA subcommands in both REXX EXECs and SIB macros. This is very useful if you want to issue the same set of subcommands at regular intervals, such as daily or weekly.

REXX EXECs are issued at the **CMS** prompt. SVAA subcommands in a REXX EXEC are preceded by **SIBADMIN**.

SIB macros should have a file type of SIB, and can be issued only at the **SIB:** prompt. You can issue the same subcommands in macros that you can issue at the **SIB:** prompt. The PROFSIBA SIB file above is an example of a SIB macro.

Command Output

By default, when started with a SIBADMIN command, SVAA returns response messages (both informational messages and error messages) to the terminal. When started from the ISPF panels, SVAA sends both messages and reports to REXX variables.

You can change the destinations for messages and reports with the OUTMSG (for messages) and OUTFILE (for reports) parameters of the SET DESTINATION subcommand. The OUTMSG destination defaults to **TERMINAL**; the OUTFILE destination defaults to a CMS file called **SIBRPT LISTING A1**.

If you enter a file specification as the destination for messages or reports, SVAA handles the specification as follows:

- If the file does not exist, SVAA creates it.
- If the file exists but has not previously been used in this run of SIBADMIN, SVAA replaces the previous contents of the file.
- If the file exists and has been used previously by an SVAA subcommand in this run of SIBADMIN or SIBMENU, SVAA appends the new output to the existing content.

You can also redirect the message and report output of a particular subcommand of SIBADMIN. See “Redirecting Subcommand Output” on page 9-8 for more information.

Chapter 4. VM NCL Management

Chapter Summary

The SVA's disk array space is a limited shared resource that you must manage effectively to take full advantage of the SVA architecture. Reclaiming space that is no longer being used by the operating system is a critical part of space management. When you delete a file, the CMS file system is updated and the space becomes available for allocation to a new file. In the SVA, as well as in traditional DASD, this deleted data still occupies the physical tracks. For traditional DASD, physical tracks reside on a physical volume and cannot be used by any other volume. In the SVA subsystem, physical tracks (disk array space) are a shared resource and can be used by all functional devices.

CMS Minidisk

CMS minidisks are formatted in data blocks of either 512, 1K, 2K, or 4K block sizes. VM minidisks are allocated to userids in the VM directory on cylinder boundaries. CMS minidisks are then formatted with the CMS FORMAT command. This command results in data block records being written to the cylinders defined using a block size specified in the FORMAT command. Thereafter, writing to a CMS minidisk is done using only update write commands. The CMS block structure is not altered by writing to the disk. The CMS file system uses a “moving cursor” implementation to allocate data blocks for CMS files. In VM, this cursor does not reset when files are deleted, so new blocks will be written until all of the blocks in the entire CMS minidisk are used. Then, the cursor resets to the top and begins rewriting blocks that have become available when files were deleted from the minidisk.

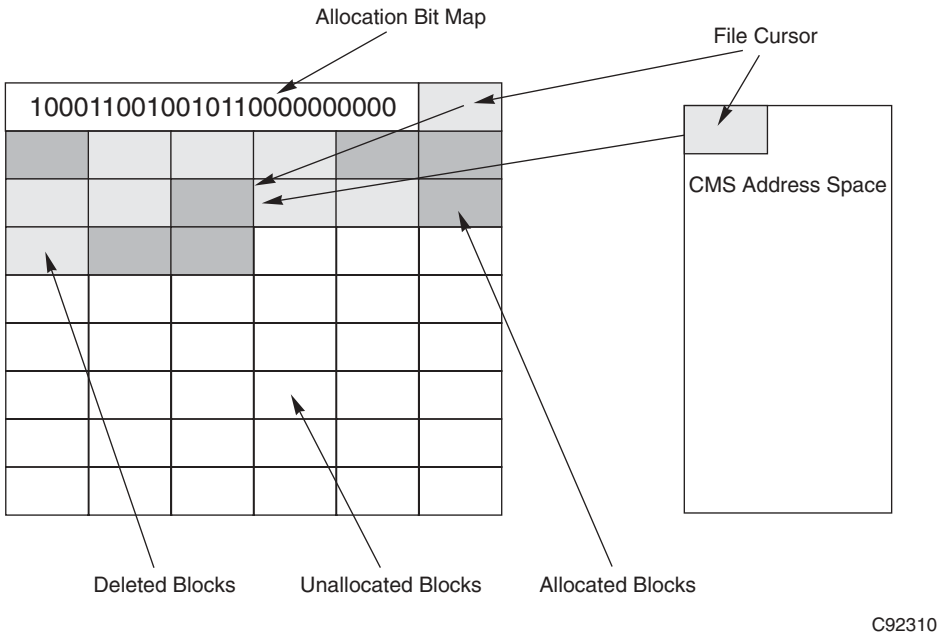


Figure 4-1. *Minidisk formatting*

NCL Management

To reclaim the disk space associated with data that is no longer being used by the operating system, SVAA provides a number of utilities and subcommands to manage the Net Capacity Load (NCL). Unused, "dead", data can accumulate in CMS minidisks that have been used over a period of time. When you delete files from a CMS minidisk, the minidisk may show that it is 50% utilized; but in reality "dead" data still exists in the disk arrays. The SVA needs to be told that the "dead" data can be released.

The virtual storage architecture of the SVA is conceptually similar to VM's virtual storage architecture. Just as CMS releases unused virtual storage pages with CP DIAGNOSE code X'10', SVAA can tell the SVA to release unused data tracks using StorageTek's ECAM protocol.

SVAA provides several subcommands and utilities for managing net capacity load (NCL) in the VM environment.

NCL Management Subcommands

Four NCL management subcommands are described briefly in this section and documented completely in Chapter 9, “SVAA Subcommands and Commands.”

DISPLAY NCL Subcommand

The DISPLAY NCL subcommand displays net capacity load percentages for specified subsystems, together with the total capacity in megabytes and collected free space in megabytes for each subsystem.

LIST MINIDISK Subcommand

The LIST MINIDISK subcommand creates a report of VM directory information based on the requested virtual device addresses, user IDs, and host volsers.

RELEASE MINIDISK Subcommand

The RELEASE MINIDISK subcommand initiates data space release. You must have write access to the virtual device address for which space is to be released. This subcommand deletes ***all*** data and its format structure from the specified minidisk. ***Use it with caution.***

QUERY MINIDISK Subcommand

The QUERY MINIDISK subcommand allows monitoring of the CMS minidisk space utilization. Subcommand output shows the real device address, the SVA subsystem name and FDID, the cylinder allocation and physical disk array space used, as well as the compression ratio for that data. QUERY MINIDISK is only valid for SVA functional volumes and cannot be used to query space on traditional DASD devices.

In the SIBSAMP MACLIB, SVAA provides a sample macro, SIBQMD01, that executes QUERY MINIDISK against a list of minidisks and produces a report. SIBQMD01 is documented in detail within the sample file.

NCL Management Utilities

This section describes a set of utilities which can help you manage the Net Capacity Load (NCL) of an SVA in the VM environment.

Note: These utilities are not SVAA subcommands; they do not require SIBADMIN.

Complete instructions for using these utilities are in Chapter 10, “SVAA VM Utilities.”

SIBVMCUR

The VM cursor reset utility, SIBVMCUR, is a CMS nucleus extension program that sets the “low allocation” flag whenever the CMS ACCESS command is invoked for a Read/Write minidisk that resides on an SVA.

SIBVMCUR should be initiated in the SYSPROF EXEC and should be run in every CMS userid. (For details, refer to the step called “Customizing the SYSPROF EXEC” in the *SVAA for VM Installation, Customization, and Maintenance* guide.) SIBVMCUR traps the CMS ACCESS command. When SIBVMCUR detects an SVA minidisk, it sets a flag in a CMS control block that tells CMS to allocate data blocks from the beginning of the minidisk. This tends to cluster usage and prevents disk fragmentation. The RELEASE option of SIBVMCUR identifies unused data tracks and tells the SVA (9500 and higher) to release the data tracks from the disk arrays. The release occurs dynamically each time the disk is accessed, which minimizes the need to run SIBRUB on the minidisk.

See page 10-8 for additional information and the syntax for the SIBVMCUR utility.

SIBRUB

The CMS minidisk rewrite utility, SIBRUB, enables you to rewrite unallocated CMS disk blocks with blank characters, which compress at a rate of about 25:1. When these blocks are rewritten to the SVA, the resulting compression and dynamic allocation releases 90% to 95% of the SVA disk array space being used to store the unallocated data. This reduces the disk array space required for the CMS minidisk and, therefore, reduces the SVA's net capacity load (NCL). Used blocks are left untouched so data is not destroyed on the minidisk.

Note: The minidisk must exist on an SVA volume, in write mode, before you invoke SIBRUB.

Periodic use of SIBRUB reduces the physical capacity required in a VM environment. Volumes that have much update activity will benefit the most from this utility. Idle volumes will show little benefit.

Caution: This utility is very I/O intensive. It is best to run it when the activity load on the VM system is light.

In the SIBSAMP MACLIB, SVAA provides two sample EXECs, SIBRUB01 and SIBRUB02, that invoke SIBRUB. The first runs the utility against all accessed CMS disks. The second runs it against a list of CMS disks.

See page 10-3 for additional information and the syntax for the SIBRUB utility.

SIBNCLxx Members of SIBSAMP

For the V960 or 9500 SVA, which support Instant Format, the RELEASE option in the SVAA SIBVMCUR utility provides a good mechanism for dynamically releasing unused data tracks. However, for disk subsystems that don't support Instant Format (the 9393 and 9200), SVAA provides a prototype interval NCL management

facility in the SIBSAMP MACLIB. The prototype, a set of REXX files, can be used with all generations of StorageTek disk storage subsystems, but is primarily useful with the older subsystems that don't support Instant Format.

Therefore, to select the appropriate NCL management utility:

- If all of your disk subsystems are V2X, V960, or 9500 SVAs, you should use the RELEASE option in SIBVMCUR (described in this section). However, you may occasionally (monthly) run the prototype to provide a thorough “scrubbing” of the CMS minidisks.
- If you have older disk storage subsystems—9393 or 9200—you can use the prototype located in the SIBSAMP MACLIB, which consists of seven REXX files, SIBNCL00 through SIBNCL06:
  - SIBNCL00 identifies external parameters that you should modify to match your installation.
  - SIBNCL01 through SIBNCL03 implement a master-slave environment to execute the SIBRUB utility and should remain unmodified.
  - SIBNCL04 is a sample SIBMDSEL user exit that you can modify to exclude minidisks in the VM Interval NCL Management prototype.
  - SIBNCL05 is a REXX EXEC that enables you to link to a minidisk in the VM Interval NCL Management prototype.
  - SIBNCL06 is a sample SVAA macro for releasing back-end storage for CMS minidisks that reside on an SVA.

SIBVMRVA

The SIBVMRVA utility includes three services, one of which, DDSRKILL, can be used to select specific extents to be released.

See page 10-10 for full documentation of the SIBVMRVA utility.

Instant Format

The Instant Format feature allows you to replace the CMS FORMAT command with a process based upon SVA technology. This replacement is transparent to the user of the FORMAT command. (Refer to the step called “Customizing the SYSPROF EXEC” in the *SVAA for VM Installation, Customization, and Maintenance* guide.) The objective is to intercept the CMS FORMAT command perform an “instant format” using the SVA. The Instant Format feature helps manage NCL by reducing the amount of SVA disk array space required for a minidisk.

The Instant Format feature is documented in detail in Chapter 6, “Instant Format.”

Using the SVA for T-disk Space

The SVA is an excellent device to use for system T-disk space because it processes the formatting and clearing of T-disk space very efficiently. Using the SVA for T-disk space, together with Instant Format, is extremely effective.

Format Speed

The SVA can process the CMS FORMAT command faster than traditional DASD. This has the effect of making the T-disk available to the user sooner than if it was on traditional DASD. Using the SVA and enabling the Instant Format intercept formats the T-DISK almost instantly.

T-disk Clearing

VM has the ability to clear T-disk space. Clearing takes place when a T-disk minidisk is detached by a user. (It also takes place at system IPL time or when a CP volume with T-disk space is attached to the system.)

If this facility is enabled, it has the effect of releasing almost all of the SVA disk array space that was used for that T-disk. Due to the nature of the channel programs used to perform the clearing, SVA processes the request very efficiently and quickly. T-disk clearing can be enabled or queried by the following methods.

SYSCLR Option

If you use the HCPSYS ASSEMBLE file for your system configuration, specifying SYSCLR=YES on the SYSRES macro enables T-disk clearing.

Clear_TDisk Option

If you use the SYSTEM CONFIG file for your system configuration, specifying the ENABLE CLEAR_TDISK on the FEATURES system configuration file statement will enable T-disk clearing.

Query TDISKCLR Command

Class B system resource operators can query the state of T-disk clearing by using the QUERY TDISKCLR command.

Clearing Deleted Minidisks

When a minidisk is deleted or moved to a new extent (that is, has its size increased), unless the data is overwritten it remains in the old extent indefinitely. This data continues to occupy disk array space on the SVA. You can either release this space with the RELEASE MINIDISK subcommand or use one of the directory management products to write highly compressible data to the disk. Both VMSECURE and DIRMAINT directory management products have the ability to clear the old extents for deleted or moved minidisks. If you use VMSECURE or DIRMAINT for your directory management, use the following methods to enable this feature.

VMSECURE

Clearing old extents is the default for VMSECURE. Do not specify the NOFormat option on commands such as CHGMdisk, DELEntry, or DELMdisk when using the command line interface. Specify YES for the “Do you want to format this minidisk?” question when using the full screen menus.

DIRMAINT

To make clearing old extents the default in DIRMAINT, specify DISK_CLEANUP=YES in the DIRMAINT DATA control file. Do not specify the NOClean option on commands such as CMDisk, DELUser, or DMDisk.

Other Tools or Products

Other tools or products may or may not have the ability to clear old extents. Please refer to the documentation for those tools or products for further information.

Chapter 5. Using SnapShot

Chapter Summary

Traditionally, the task of duplicating data in the computer room has consisted of copying the data from one place to another, as in copying the data from a DASD device to the same or to another DASD device.

StorageTek offers SnapShot—a more advanced technique for duplicating data.

Methods of Duplicating Data

This section compares the SnapShot feature with conventional DASD copy processing.

Conventional DASD Duplication

Historically, conventional methods of duplicating DASD data consist of making a physical copy of the data, either on DASD or on tape. These methods require that any applications updating the data be quiesced for the duration of the copy operation so that the data being copied is not corrupted. These copies may be accomplished using any of a variety of programs, such as the IBM DASD Dump and Restore (DDR) utility.

The Concurrent Copy function is an improvement over the conventional methods in that it allows data to be copied while applications accessing the data remain active. The data being updated is saved in cache (or elsewhere) until the copy function has finished processing. The updates can then be applied to the source data.

Dual Copy is another improved copy method; it allows a user to copy a volume onto two different physical disks. Once the dual copy pair has been established, the 3990 controller copies the data from one volume to the other to synchronize the data. In all future operations, the controller writes updates simultaneously to each disk in the dual copy pair. Then, one of the volumes can be used to copy the data to tape while the other volume continues in use for updates.

All of these copying methods enable the user to copy data from one place to another with some degree of disruption to the applications using the data. These methods require involvement of the host processor, the channel, and the DASD controller, and sometimes real and expanded storage.

Duplication Using SnapShot

The StorageTek SnapShot feature dramatically reduces the time required for data duplication when compared to traditional copying, thus minimizing the downtime for applications using the data. Furthermore, no additional physical disk or cache space is used in making the duplicate.

SnapShot accomplishes this duplication quickly because:

- No data is moved
- Only new pointers to the original volume or minidisk are created

The two independent sets of pointers treat the data as if it were two physically separate images. Updates can occur simultaneously both to the original data and to the duplicate, with no concern for compromising the data in either.

Note: StorageTek uses the term “snap” for the process of duplicating data with SnapShot. We also use this term for the result of a snap operation. The minidisk or volume being duplicated is called the “source” and the object of the duplication is called the “target.” That is, with SnapShot, we snap the source onto the target. These terms emphasize that this new form of data duplication is quick, economical of resources, and easy to use.

Snaps of a minidisk or volume require a minimum of host resources. The actual snapping is performed within the DASD subsystem. The only physical storage allocated is for:

- The original minidisk or volume (shared between the source and target)
- Subsequent changes made by applications accessing the source
- Subsequent changes made by applications accessing the target

You can use a snap as the source of a transfer to tape while applications continue to use the original source minidisk or volume.

Invoking SnapShot

With SnapShot you can snap data extents, minidisks, or volumes. Use either the SNAP MINIDISK or SNAP VOLUME subcommand of SIBADMIN or the SnapShot Service of the SIBVMRVA utility to perform a snap:

- In a REXX program
- Using the CMS command line interface

(See Chapter 9, “SVAA Subcommands and Commands” and “SIBVMRVA Utility” on page 10-10.)

You can also issue SNAP MINIDISK or SNAP VOLUME subcommands from ISPF panels (see page 8-95).

The following sections describe how SnapShot snaps volumes and minidisks.

Snapping Functional Volumes

You use the SNAP VOLUME subcommand to snap a DASD volume on an SVA subsystem. Target volumes shared in a multi-host environment should be offline to all hosts except the host executing the snap operation. Furthermore, the target volume **must** be of the same device type and model (geometry) as the source volume. FlexVolumes and Large Volumes do not change this requirement.

Note: You can snap a SCSI volume to a VM 3390 volume if the SCSI volume has been initialized with a device number or volser. (This is done with the INIT parameter of the DEFINE DEVICE subcommand or with the INITIALIZE DEVICE subcommand.) *However*, you *cannot* snap a VM volume to a SCSI volume.

When the snap is finished, the target volume is an exact duplicate of the source volume.

If the target of a SNAP VOLUME subcommand is not in the same SVA subsystem and partition as the source volume, SnapShot can call a data mover to physically copy the volume. This uses a conventional copy process.

Note: The fact that you can specify the functional volumes to be used as targets implies that there are defined volumes available for this use.

Parameters of the SNAP VOLUME subcommand enable you to specify:

- A volume to be snapped, identified by volser or device number (SOURCE parameter; VOLUME and UNIT subparameters)
- An existing target volume identified by volser or device number (TARGET parameter; VOLUME and UNIT subparameters)

- A data mover to be used in case the specified snap cannot be performed (DATAMOVERNAME parameter).
- The cylinder from which SnapShot is to start and the number of contiguous cylinders to be snapped (FROM and FOR parameters).
- Whether count field relocation is to be used (RELOCATE parameter).
- Whether to log diagnostic messages (DEBUG parameter).
- Whether a message (describing the snap request) is to be displayed before the snap is executed (PROMPT parameter).

A complete description of the SNAP VOLUME subcommand and its parameters begins on page 9-136.

You can specify the same parameters and submit the subcommand with the SPECIFY SNAP VOLUME SUBCOMMAND panel. The panel description begins on page 8-99.

Snapping Minidisks

You use the SNAP MINIDISK subcommand to quickly make a copy of a minidisk. When you use the SNAP MINIDISK subcommand, you specify the source minidisk by its virtual address. Similarly you specify the target minidisk by its virtual address.

SnapShot always attempts to perform a snap, but if a snap is not feasible, SnapShot can call a data mover to duplicate the minidisk. This is not a snap, but a conventional copy, which takes much longer. A snap is not feasible:

- If the target minidisk is not within the same SVA subsystem and partition as the source minidisk
- If the source and target minidisks exist on dissimilar device types

SnapShot duplicates DASD tracks, whether the duplication is a snap or a data mover copy. It is functionally equivalent to the DDR utility.

Parameters of the SNAP MINIDISK subcommand enable you to specify:

- The minidisk to be snapped, identified by its virtual device address (SOURCE and DEVICE parameters).
- A target minidisk, identified by a virtual device address (TARGET and DEVICE parameters).
- The userid of the source or target minidisks, or both (USERID subparameter).
- The link mode of the source or target minidisks, or both (LINKMODE subparameter).
- The password for the source or target minidisks, or both (PASSWORD subparameter).
- The cylinder from which SnapShot is to start and the number of contiguous cylinders to be snapped (FROM and FOR parameters).
- Whether a data mover is to be used when the SnapShot criteria for the source and target minidisks are not met (DATAMOVERNAME parameter).
- Whether to relocate the count fields to real cylinder 0 of the DASD volume (RELOCATE parameter).

- Whether diagnostic messages are to be logged (DEBUG parameter)
- Whether a message (describing the snap request) is to be displayed before the snap is executed (PROMPT parameter).

A complete description of the SNAP MINIDISK subcommand and its parameters begins on page 9-130.

You can specify the same parameters and submit the subcommand with the SPECIFY SNAP MINIDISK SUBCOMMAND panel. The panel description begins on page 8-96.

Additional Functions of SnapShot

In addition to the basic functions of snapping volumes and snapping minidisks, SnapShot provides the following utilities.

SIBVMRVA Utility

The SIBVMRVA service utility enables users to perform the following functions from the CMS Ready prompt or from a REXX program:

- Snapping a source minidisk to a target minidisk
- Obtaining information about a virtual device in the SVA
- Releasing SVA back end storage (thus destroying data)

"SIBVMRVA Utility" on page 10-10 describes the use of these functions.

Instant Format with SnapShot Technology (9200 and 9393 Subsystems)

When you are using the StorageTek 9200 or 9393 Disk Storage subsystem, the SIBFMTSS utility intercepts CMS FORMAT commands and replaces the CMS function with an extremely fast format of a minidisk. This is effected by snapping an already-formatted disk to the target minidisk. Beginning with the 9500 SVA, SnapShot technology is no longer necessary for instant formatting.

Chapter 6, "Instant Format" on page 6-1 describes the Instant Format feature.

Net Capacity Load Considerations

When you are using SnapShot functions with an SVA subsystem, you should consider the effect of the snapped volumes or minidisks on the net capacity load (NCL) of the subsystem. When a source is first snapped, the snap consumes no back end storage, because the tracks for the target share the same tracks as the source. No extra space is needed to accommodate the new volume or minidisk at this point.

However, as updates are made, new tracks are written to the disk arrays. The more updates that occur to each of the snaps, the more tracks are written on behalf of each. These new tracks occupy more back end storage as the source and target diverge. It is possible that either the source or target are completely rewritten. The potential effect on NCL must be considered in this case.

If NCL becomes a concern, you may need to consider the length of time that snapped volumes or minidisks are kept on the SVA subsystem. The length of time you maintain the snaps, and the rate at which they become unique because of updates, should determine when the snaps can be deleted to make room for other snaps or to lower overall subsystem NCL.

Volume Considerations

Cylinder zero on a volume normally contains data records that identify the volume serial (volser) and volume allocation information. When using SnapShot to copy data to a target volume's cylinder zero, the user is responsible for ensuring that the target volume has the correct volume information. Host utilities such as ICKDSF can be used to provide minimal initialization for the target volume. Another approach would be to use the SNAP VOLUME subcommand FROM parameter to avoid duplicating cylinder zero. For example: FROM(1).

Security Considerations

The SNAP MINIDISK subcommand uses the normal VM security mechanisms (that is, the mechanisms associated with the CP LINK command) to access user minidisks.

The SNAP VOLUME subcommand is intended for privileged VM userids and requires authorization to execute the CP ATTACH and DEFINE MDISK commands.

Terminology

This manual may indicate that an action you request is either not allowed or not supported by SnapShot:

- A request is *not allowed* when the request cannot be fulfilled by SnapShot, which in this case calls a data mover to make the copy. In this case, SnapShot issues an error message.
- A request is *not supported* if it cannot be evaluated by SnapShot. SnapShot issues no error message. In this case, the results may be unpredictable.

Chapter 6. Instant Format

Chapter Summary

Traditionally, the task of formatting a CMS minidisk (or a Linux guest minidisk) has consisted of writing null data to the entire minidisk. StorageTek offers Instant Format—a faster and more advanced technique for formatting data for CMS or Linux minidisks.

Minidisk Formatting Techniques

StorageTek's Instant Format has marked advantages over conventional minidisk formatting.

Conventional Minidisk Format

CMS FORMAT consists of writing volume metadata to the first cylinder of a minidisk and then writing null data to the remaining cylinders of that minidisk. This process is I/O intensive and can be quite time consuming, depending upon the size of the minidisk. For a Linux minidisk, an additional step is required—allocating the entire minidisk using the CMS RESERVE command.

When using CMS FORMAT on the SVA virtual disk architecture, each track written to the minidisk causes an increase in net capacity load (NCL). Although this is highly compressible data, it still consumes unnecessary space in the disk arrays.

StorageTek Instant Format

The StorageTek Instant Format technology dramatically reduces the I/O time and CPU resources required to format a minidisk. In addition, it reduces the overall NCL by eliminating write operations to the disk arrays. With the exception of the first cylinder no additional physical disk or cache space is used during the format. To the user, the format operation becomes almost instantaneous.

Instant Format accomplishes this task so rapidly because:

- Only the first cylinder (metadata) is written to the disk arrays.
- The remaining cylinders consist of track images with no user data records.
- In some cases, depending upon the user configuration, SnapShot is used to copy a preformatted disk to the target minidisk.

Implementing Instant Format

Instant Format is installed as a replacement for the CMS FORMAT command. This process, which is transparent to the user, intercepts the CMS FORMAT command and uses the SVA to perform the format. The standard CMS FORMAT command is still used whenever Instant Format is not available.

Instant Format is implemented within the SVA subsystem or, with older subsystems, is accomplished using SnapShot technology. Use the following procedure to determine the Instant Format capability of each SVA subsystem. (This procedure requires access to the RUN disk and to an SVA device.)

Enter: **`EXEC SIBIFCHK`** *`devaddr`*

where *`devaddr`* is the virtual device address of any SVA device.

Example response: **`SIBIFCHK: SVA Instant Format is supported on SVA001`**

where **`SVA001`** is the subsystem name

Using SVA Instant Format Technology

If SIBIFCHK indicates that SVA Instant Format is supported on the SVA subsystem, the only setup required to use Instant Format in the SVA is to trap the CMS FORMAT command and replace it with the SIBFMTSS utility. It is recommended that you invoke the trap via the SYSPROF EXEC for all CMS users, but it can also be implemented at the individual user level. (For a code example, see the step called "Customizing the SYSPROF EXEC" in the *SVAA for VM Installation, Customization, and Maintenance* guide.)

Using SVA SnapShot Technology

If SIBIFCHK indicates that Instant Format is ***not*** supported on the SVA subsystem, SnapShot technology is used. Instant Format using SnapShot technology requires one or more preformatted CMS minidisks and some intercept routines to be installed during CMS initialization. When a user requests formatting of a minidisk, one of these preformatted minidisks is instantly copied to the minidisk to be formatted.

The steps listed below allow a VM system programmer to implement Instant Format. These steps describe a *suggested* implementation of Instant Format that only uses a 4K CMS block size. For variations to the suggested implementation, see "Specifying SIBFMTSS Environment Variables" on page 10-2.

Perform the following 5 steps.

Step 1. Using CMS FORMAT

A CMS FORMAT request is satisfied by snapping a preformatted CMS minidisk to the requested virtual device and changing some CMS file system values to make it appear that a real format occurred.

The system programmer needs to identify the following characteristics of CMS format usage in their environment:

- Device types (3380 or 3390)
- Block sizes (512, 1K, 2K or 4K)
- The maximum number of cylinders expected for a CMS format.

To reduce the number of preformatted CMS minidisks required for Instant Format, the suggested implementation forces all format requests to use a 4K block size. If this does not match your requirements, see "Specifying SIBFMTSS Environment Variables" on page 10-2, which describes how to request a preformatted minidisk for a specific block size.

Step 2. Defining CMS Source Minidisks

Identify a VM userid to own the preformatted CMS minidisks. If 3380 device types are required, define a 3380 minidisk that matches the largest minidisk you expect your users to format. Similarly, if 3390 device types are required, define a sufficiently large 3390 minidisk. If multiple SVA subsystems exist with the SnapShot facility, you need a minidisk of each device type on each SVA subsystem.

For example, suppose STKMAINT is the owning VM userid. In your directory management product, define a 3380 minidisk and a 3390 minidisk (if you use both device types).

```
MDISK 8000 3380 1 END volser1 RR
MDISK 9000 3390 1 END volser2 RR
```

Step 3. Initializing the CMS Source Minidisks

Use the CMS FORMAT command to preformat the minidisks defined in step 3. Make sure you have write access to the minidisk and use any disk label you desire, e.g., IF4096.

```
CP LINK STKMAINT 8000 8000 M
FORMAT 8000 K ( BLKSIZE 4K
```

Now, use the RECOMP option of the FORMAT command to set the number of cylinders to one.

```
FORMAT 8000 K 1 ( RECOMP
```

Recomputing the minidisk to one cylinder allows the SIBVMRVA utility to provide validation of the source minidisk (see page 10-10).

Step 4. Testing Instant Format

Before making Instant Format generally available, perform some tests. Create a REXX EXEC called IFINST and put in the following commands. Assume the SVA subsystem name is “SVA001” and only 3380 device types are required (defined as in Step 3).

```
/* Instant Format test EXEC */
Address Command
'EXECLOAD SIBFMTSS EXEC ( SYSTEM'
If rc <> 0 Then Exit rc
mdisk1 = '=SVA001_3380=STKMAINT.8000'
option = '=EMSG=Y'
'SIBTRAP FORMAT SIBFMTSS' option mdisk1
Exit rc
```

When you execute IFINST, the SIBTRAP module installs a CMS nucleus extension to trap the CMS FORMAT command and execute the SIBFMTSS EXEC in its place. When the FORMAT command is requested, SIBFMTSS determines whether the SVA SnapShot facility can be used to perform an Instant Format. If an Instant Format cannot be used, the normal CMS FORMAT command is executed.

Note: The replacement of the CMS FORMAT command can be totally transparent to the end user. However, in this test EXEC, IFINST, the “=EMSG=Y” option directs SIBFMTSS to display an informational message when the SnapShot facility cannot be used.

With test virtual devices, execute a CMS FORMAT command. It is also recommended that this procedure be tested from a userid other than STKMAINT. This will ensure that all of the Instant Format software is accessible.

When satisfied that Instant Format works, proceed with the next step.

Step 5. Installing Instant Format

To make Instant Format generally available, modify the SYSPROF EXEC to include the commands specified in the IFINST EXEC (to make execution transparent, remove the EMSG environment variable).

Chapter 7. SVAA Configuration Tasks: An Outline

Chapter Summary

This chapter lists the steps involved in performing configuration tasks and provides references to the places in this manual where you can find detailed information about those tasks.

Altering Subsystem Global Characteristics

The name of an SVA subsystem and a subsystem identifier (SSID) for at least one logical 3990 controller emulated within the subsystem must be defined at the LOP or the DOP. With SVAA (using either a subcommand or ISPF panels) you can:

- Change the subsystem name
- Change SSIDs
- Change the site name (optional)
- On the 9393 or 9500 SVA: Change the default array size (5+2 or 13+2). **The only array size available on the V2X or V960 SVA is 13+2.**

The following table identifies the topics and pages in this manual that describe subsystem configuration tasks.

	Subcommand	Panel
Select subsystem	ALTER SUBSYSTEM (page 9-26): SUBSYSTEM parameter	SVAA SUBSYSTEM SELECTION (page 8-13): type **S** to select subsystem
Alter subsystem characteristics	ALTER SUBSYSTEM	SUBSYSTEM CONFIGURATION (page 8-15)

Altering Channel Interface Characteristics

For an SVA ESCON or FICON channel, SCSI I/O interface, or fibre channel, the only characteristic you can alter is the interface name. No disabling or varying offline is involved, so the procedures require fewer tasks than for a parallel (bus and tag cables) channel interface.

Altering a Parallel Channel

To change characteristics of one or more parallel channel interfaces:

1. Vary the channel offline from the host operating system.
2. Use SVAA subcommands or panels to perform the tasks in the table below.
3. Vary channel online to the host operating system.

	Subcommand	Panel
Select channel type		CHANNEL TYPE SELECTION (page 8-21): type **S** to select channel type
Select channel	ALTER CHANNEL (page 9-11): IFID parameter	CHANNEL SELECTION (page 8-22): type **S** to select channel
Disable channel	ALTER CHANNEL: DIS parameter	CHANNEL CONFIGURATION (page 8-25): type **N** in Enabled field
Alter channel characteristics	ALTER CHANNEL	CHANNEL CONFIGURATION

	Subcommand	Panel
Enable channel	ALTER CHANNEL (second execution of subcommand): ENA parameter	CHANNEL CONFIGURATION: type **Y** in Enabled field

Altering an ESCON Channel

To change the name of the channel interface for one or more ESCON channels:

	Subcommand	Panel
Select channel type		CHANNEL TYPE SELECTION (page 8-21): type **S** to select channel type
Select channel	ALTER CHANNEL (page 9-11): IFID parameter	CHANNEL SELECTION (page 8-22): type **S** to select channel
Alter channel interface name	ALTER CHANNEL: NAME parameter	CHANNEL CONFIGURATION (page 8-27)

Altering a FICON Channel

To change the name of the channel interface for one or more FICON channels:

	Subcommand	Panel
Select channel type		CHANNEL TYPE SELECTION (page 8-21): type **S** to select channel type
Select channel	ALTER CHANNEL (page 9-11): IFID parameter	CHANNEL SELECTION (page 8-22): type **S** to select channel
Alter channel interface name	ALTER CHANNEL: NAME parameter	CHANNEL CONFIGURATION (page 8-32)

Altering a SCSI I/O Interface

To change the name of one or more SCSI I/O interfaces:

	Subcommand	Panel
Select channel type		CHANNEL TYPE SELECTION (page 8-21): type **S** to select channel type
Select I/O interface	ALTER CHANNEL (page 9-11): IFID parameter	CHANNEL SELECTION (page 8-23): type **S** to select channel
Alter I/O interface name	ALTER CHANNEL: NAME parameter	CHANNEL CONFIGURATION (page 8-29)

Altering a Fibre Channel

To change the name of one or more fibre channels:

	Subcommand	Panel
Select channel type		CHANNEL TYPE SELECTION (page 8-21): type **S** to select channel type
Select channel	ALTER CHANNEL (page 9-11): IFID parameter	CHANNEL SELECTION (page 8-23): type **S** to select channel

	Subcommand	Panel
Alter channel name	ALTER CHANNEL: NAME parameter	CHANNEL CONFIGURATION (page 8-31)

Configuring Functional Devices

The configuration of a functional device may consist of one or more of the following activities:

- Defining a device
- Altering the characteristics of a device
- Changing the partition of a device
- Changing the device type of a device
- Deleting a device
- Disabling host access to a CKD or SCSI device

Defining a Functional Device

To define the characteristics of a functional device:

1. Define the device to all host operating systems using the I/O configuration program (IOCP) or hardware configuration definition (HCD).
2. Define the device to the subsystem using the SVAA subcommand or panels named in the following table. A PAV Base device must be defined before any of its related Alias devices can be defined.

	Subcommand	Panel
Define device	DEFINE DEVICE (page 9-35)	INSERT FUNCTIONAL DEVICE (page 8-40) or REPLICATE FUNCTIONAL DEVICE (page 8-48)

3. Vary the device online.

   Note: If defining a Power PPRC Bridge device, do **not** perform this step. Do **not** vary PAV Alias or Power PPRC Bridge devices online to any z/OS or OS/390 operating system.

4. Initialize the device with ICKDSF or other appropriate utility.

   If defining a PAV Alias or Power PPRC Bridge device, do **not** perform this step. Do **not** initialize PAV Alias or Power PPRC Bridge devices.

Notes:

1. Each SVA subsystem has a minimum missing-interrupt handler (MIH) timeout value which must be set for all devices defined to the subsystem. Under normal conditions, this value will be set dynamically by the system. See the step for changing the VM missing-interrupt handler timeout value in the *SVAA for VM Installation, Customization, and Maintenance* manual.
2. A sample SIB macro, **SIBDEFDV**, is provided in the SIBSAMP MACLIB. It enables you to define and optionally initialize one more devices as CP volumes. (SIBDEFDV is documented in detail in the macro's source code.)

Altering Characteristics of a Functional Device

To alter the characteristics of a functional device, use the SVAA subcommand or panel named in the following table.

	Subcommand	Panel
Alter characteristics of device	ALTER DEVICE (page 9-18)	UPDATE FUNCTIONAL DEVICE (page 8-56)

Notes:

1. You cannot change the device type or partition for a device in this process. See “Changing the Device Type of a Functional Device” on page 7-7 and “Changing the Partition of a Functional Device” for procedures for these tasks.
2. For Power PPRC Bridge devices, you cannot change the PRIVILEGEDECAM, SCSIENABLE, or SCSIREADWRITE values, or specify a value for the SCSIADDRESS parameter.
3. For PAV Alias devices, you cannot change the CACHE, CKDENABLE, CKDREADWRITE, DASDFASTWRITE, NAME, or PRIVILEGEDECAM attributes.
4. You cannot change the number of cylinders of a device without deleting (backup all data first) and then redefining the device.

Changing the Partition of a Functional Device

Notes:

1. You cannot define new devices to the Test partition on the SVA.
2. All PAV and Power PPRC Bridge devices must be defined to the Production partition.

To change the partition (Test to Production) with which a device is associated:

1. Move all data on the functional device to an auxiliary device (tape or disk).
2. Vary the device offline to all host operating systems. Note that PAV Alias devices cannot be varied online or offline to MVS.
3. Use SVAA subcommands or panels to perform the tasks in the following table.

	Subcommand	Panel
Delete device	DELETE DEVICE (page 8-61)	DELETE FUNCTIONAL DEVICE (page 8-63)
Define device (specifying Production partition)	DEFINE DEVICE (page 8-40): PARTITION parameter	INSERT FUNCTIONAL DEVICE (page 8-42) or REPLICATE FUNCTIONAL DEVICE (page 8-48): change Partition field
Enable CKD device	DEFINE DEVICE (page 9-35): CKDENA parameter	INSERT FUNCTIONAL DEVICE (page 8-42) or REPLICATE FUNCTIONAL DEVICE (page 8-49): type **Y** in CKD Enabled field
Enable SCSI device	DEFINE DEVICE (page 9-35): SCSIENA parameter	INSERT FUNCTIONAL DEVICE (page 8-42) or REPLICATE FUNCTIONAL DEVICE (page 8-49): type **Y** in SCSI Enabled field

4. Vary the device online to all host operating systems.
5. Initialize the device with ICKDSF or other appropriate utility.

   Note: Do **not** initialize PAV Alias or Power PPRC Bridge devices.
6. Restore the functional device data from the auxiliary device.

Changing the Device Type of a Functional Device

Note: You cannot change the device type for Power PPRC Bridge devices.

To change the device type of a functional device:

1. Move all data on the functional device to an auxiliary device (tape or disk).
2. Vary the device offline to all host operating systems.
3. Use SVAA subcommands or panels to perform the tasks in the following table.

	Subcommand	Panel
Delete device	DELETE DEVICE (page 9-45)	DELETE FUNCTIONAL DEVICE (page 8-63)
Define device (specifying new device type)	DEFINE DEVICE (page 9-35): DEVICETYPE parameter	INSERT FUNCTIONAL DEVICE (page 8-42) or REPLICATE FUNCTIONAL DEVICE (page 8-49): enter new device type
Enable CKD device	DEFINE DEVICE (page 9-35): CKDENA parameter	INSERT FUNCTIONAL DEVICE (page 8-42) or REPLICATE FUNCTIONAL DEVICE (page 8-49): type **Y** in CKD Enabled field
Enable SCSI device	DEFINE DEVICE (page 9-35): SCSIENA parameter	INSERT FUNCTIONAL DEVICE (page 8-42) or REPLICATE FUNCTIONAL DEVICE (page 8-49): type **Y** in SCSI Enabled field

4. Redefine the device type to all host operating systems (using IOCP or HCD).
5. Vary the device online to all host operating systems.
6. Initialize the device with ICKDSF or other appropriate utility.

   Note: Do **not** initialize PAV Alias or Power PPRC Bridge devices.
7. Restore data to the functional device (which cannot be a PAV Alias device) from the auxiliary device.

Deleting a Functional Device

To delete a functional device:

1. Vary the device offline to all host operating systems.
2. Vary all paths to the device offline from all hosts and LPARs.
3. Use the SVAA subcommand or panels named in the following table to delete the functional device.

	Subcommand	Panel
Delete device	DELETE DEVICE (page 9-45)	DELETE FUNCTIONAL DEVICE (page 8-63)

4. Optionally, remove all host operating system definitions for the device (using IOCP or HCD).

The rules for deleting Base and Alias devices are as follows:

- To delete a CKD or SCSI device (non-PAV, has no Aliases)
  1. Vary the device offline to all host operating systems
  2. Delete the device using the SVAA subcommand or panels
  3. Optionally, remove all host operating system definitions for the device
- To delete a PAV Base device that does not have Aliases using the SVAA subcommands or panels:
  1. Vary the Base device offline to all host operating systems
  2. Delete the Base device
- To delete a PAV Base device that has Aliases
  1. Vary the Base and Alias devices offline to all host operating systems
  2. Delete each Alias related to the Base; use DISPLAY DEVICE or LISTCFG DEVICE to determine the Aliases to be deleted. You cannot delete a Base and its related aliases in a single delete operation.
  3. Delete the Base device using the SVAA subcommand or panels
  4. Optionally, remove all host operating system definitions for the device
- To delete a PAV Alias device that is related to an online Base
  1. Vary the Base and Alias devices offline to all host operating systems
  2. Delete the Alias device using the SVAA subcommand or panels
  3. Optionally, remove all host operating system definitions for the device
- To delete a PAV Alias device that is related to an offline Base
  1. Vary the Alias device offline to all hosts
  2. Delete the Alias device using the SVAA subcommand or panels
  3. Optionally, remove all host operating system definitions for the device
- To delete a misdefined PAV Alias (genned as Base, defined as Alias)
  1. Vary the Alias device offline to all hosts

2. Delete the Alias device using the SVAA subcommand or panels

   Note: In this special case only, it does not matter whether the Base is online or offline. Since the host operating system did not establish a path group to the Alias when it was misdefined, it can be safely deleted without requiring that the Base device be varied offline

3. Optionally, remove all host operating system definitions for the device

Disabling a CKD Functional Device

To disable a CKD functional device:

1. Vary the device offline to all host operating systems.
2. Disable the CKD device using the SVAA subcommand or panels named in the following table.

	Subcommand	Panel
Disable CKD device	ALTER DEVICE (page 9-18) or VARY DEVICE (page 9-147): CKDENA parameter	UPDATE FUNCTIONAL DEVICE (page 8-56): type **N** in CKD Enabled field

Disabling a SCSI Functional Device

To disable a SCSI functional device:

1. Vary the device offline to all host operating systems.
2. Disable the SCSI device using the SVAA subcommand or panels named in the following table.

	Subcommand	Panel
Disable SCSI device	ALTER DEVICE (page 9-18) or VARY DEVICE (page 9-147): SCSIENA parameter	UPDATE FUNCTIONAL DEVICE (page 8-57): type **N** in SCSI Enabled field

Defining Additional Privileged ECAM Devices

Note: You cannot define PAV Alias or Power PPRC Bridge devices as ECAM devices.

To define a device as a privileged ECAM device:

1. Designate the device to be an ECAM device; that is, eligible to communicate requests to the SVA subsystem.
2. Define the device as privileged; that is, eligible to communicate Category 1-restricted messages (which alter the subsystem configuration).

The following table identifies the topics and pages in this manual that describe the tasks involved in defining privileged ECAM devices.

	Subcommand	Panel
Define ECAM communications device	SET ECAMDEVICE (page 9-128)	At the command line of any SVAA panel, issue SIB SET ECAMDEVICE subcommand
Define device as privileged	ALTER DEVICE (page 9-18) or DEFINE DEVICE (page 9-35): specify **PRIVLG(YES)**	INSERT FUNCTIONAL DEVICE (page 8-42), REPLICATE FUNCTIONAL DEVICE (page 8-49), or UPDATE FUNCTIONAL DEVICE (page 8-57): set Privileged ECAM field to **Y**

Note: It is recommended that you verify that the device is assigned privileged ECAM status. To do this, use the DISPLAY DEVICE subcommand (page 9-50) or the FUNCTIONAL DEVICE SELECTION panel (page 8-36).

Reconfiguring Subsystem Disk Array Capacity

Reconfiguring a subsystem's disk array capacity can involve one or more of the following activities:

- Allocating spares
- Establishing the Test partition's disk array capacity
- Forming additional disk arrays
- Moving disk array capacity from the Test partition to the Production partition
- Removing the Test partition's disk array capacity
- Reconfiguring an existing array

Allocating Spares

Allocating spares is the process of re-assigning drive modules from the MAT partition to the Spares partition. To be eligible for allocation as a spare, a drive module must be in the MAT partition and have a status of M.A (MAT partition, active).

To allocate one or more spares, use SVAA subcommands or panels to perform the tasks in the following table.

	Subcommand	Panel
Check for drive modules with a status of M.A	LISTCFG DRIVEMODULE (page 9-69)	DISPLAY DRIVE MODULE STATUS (page 8-71)
Select one or more drive modules to allocate as spares.	ALLOCATE SPARES (page 9-10)	ALLOCATE SPARES (page 8-74)

Establishing the Test Partition's Disk Array Capacity

To establish the Test partition's initial array capacity requires forming one or more arrays for that partition. The procedure is the same as that described in Forming Additional Disk Arrays (see below).

Note: You ***cannot*** form Test arrays on the V2X, V960, or 9500 SVA—only on subsystems running earlier microcode. See “Functional Differences between Subsystems” on page 1-3 for more information.

Forming Additional Disk Arrays

To form additional arrays in either the Production or the Test partition:

1. Decide upon the size of the arrays that you want to form (5+2 or 13+2), and set the Array Size value, if necessary.

   Note: You can form a 5+2 array only on the 9393 or 9500 SVA—not on the V2X or V960 SVA.

2. Determine the number of spare drives necessary to form the arrays: multiply the array size (7 or 15) by the number of arrays to be formed, and add 1 (the minimum number of reserved spares required).

3. Ensure that there are enough drive modules in the Spares partition to form the arrays. Allocate additional spare drive modules if necessary.

4. Form the additional production or test arrays.

5. Verify the increased disk array capacity.

   The disk array capacity field or parameter should show an increase, while the % Net Capacity Load shows a decrease.

The following table identifies the topics and pages in this manual that describe these tasks.

	Subcommand	Panel
Change Array Size value (optional)	ALTER SUBSYSTEM (page 9-26): ARRAYSIZE parameter	SUBSYSTEM CONFIGURATION (page 8-15)
Allocate spares	ALLOCATE SPARES (page 9-10): DMOD parameter	ALLOCATE SPARES (page 8-74)
Form production or test array	FORM ARRAY (page 9-56)	FORM PRODUCTION ARRAYS (page 8-80) or FORM TEST ARRAYS (page 8-77)
Verify disk array capacity	LISTCFG SUBSYSTEM (page 9-72) — level 1 report	SUBSYSTEM CONFIGURATION (page 8-15): check Disk Array Capacity and % Net Capacity LD fields

Moving Disk Array Capacity from Test Partition to Production

All drive modules associated with the Test partition can be moved to the Production partition. In this process, all Test partition functional device definitions and associated data are carried forward to the Production partition.

Note: You ***cannot*** perform the Move Test Partition operation on the V2X, V960, or 9500 SVA—only on subsystems running earlier microcode. See “Functional Differences between Subsystems” on page 1-3 for more information.

To move disk array capacity, use SVAA subcommands or panels to perform the tasks in the following table.

	Subcommand	Panel
Move all Test partition drives to Production partition	MOVE TESTPARTITION (page 9-109)	MOVE TEST INTO PRODUCTION (page 8-82)
Verify that no drive modules appear in the Test partition	LISTCFG DEVICE (page 9-64) **T** should not appear in the T/P column. A zero count should appear in the Test partition field.	FUNCTIONAL DEVICE SELECTION (page 8-36): **T** should not appear in the PT column.

Removing the Test Partition's Disk Array Capacity

Removing the Test partition's capacity means deleting data. Therefore, before beginning, you must copy to the Production partition any data you need to save.

Note: If your objective is to move the Test partition's disk array capacity to the Production partition, see “Moving Disk Array Capacity from Test Partition to Production.”

To remove the Test partition's disk array capacity:

1. Vary all Test partition functional devices offline to all hosts.
2. Use SVAA subcommands or panels to perform the tasks in the following table.

	Subcommand	Panel
Disable Test partition devices	ALTER DEVICE (page 9-18): DIS parameter	UPDATE FUNCTIONAL DEVICE (page 8-57): type **N** in Enabled field
Delete Test partition devices	DELETE DEVICE (page 9-45)	DELETE FUNCTIONAL DEVICE (page 8-63)
Drain all test arrays	START DRAIN (page 9-142)	DRAIN DRIVE MODULES (page 8-85)
Verify that Test partition's disk array capacity = 0	LISTCFG SUBSYSTEM (page 9-72) — level 1 report	SUBSYSTEM CONFIGURATION (page 8-15): check Disk Array Capacity and % Net Capacity LD fields

Reconfiguring an Existing Array

On the 9393 or 9500 SVA, there are two array-size options: 5+2 and 13+2. To change an array's configuration from either of these arrangements to the other, use SVAA subcommands or panels to perform the tasks in the following table.

	Subcommand	Panel
Drain the array to be reconfigured	START DRAIN (page 9-142)	DRAIN DRIVE MODULES (page 8-85)
Ensure adequate spare drive modules to form an array	ALLOCATE SPARES (page 9-10) if necessary	ALLOCATE SPARES (page 8-74) if necessary
Specify the Array Size	ALTER SUBSYSTEM (page 9-26): ARRAYSIZE parameter	SUBSYSTEM CONFIGURATION (page 8-15): Default Array Size field
Form new production or test array	FORM ARRAY (page 9-56): NUMARYS parameter	FORM PRODUCTION ARRAYS (page 8-80) or FORM TEST ARRAYS (page 8-77)
Verify new configuration	LISTCFG SUBSYSTEM (page 9-72) — level 3 report	SUBSYSTEM CONFIGURATION (page 8-15): Number of Spares field

Displaying the Drive Module Configuration

You can display the status, by partition, of all drive modules in a subsystem with SVAA subcommands or panels.

The following table identifies the topics and pages in this manual that describe this task.

	Subcommand	Panel
Display drive module status	LISTCFG SUBSYSTEM (page 9-69)	DISPLAY DRIVE MODULE STATUS (page 8-71)

Starting a Drain

A drain is used to move data off one or more drive modules. All drained modules are automatically associated with the MAT partition.

To start a drain using SVAA subcommands or panels:

	Subcommand	Panel
Start the drain	START DRAIN (page 9-142)	DRAIN DRIVE MODULE(S) (page 8-85)

Reporting on Drain Events

You can generate a report on any or all drain events initiated within the most recent 60 days using the following SVAA subcommands or panels.

The following table identifies the topics and pages in this manual that describe event reporting.

	Subcommand	Panel
Generating a report	REPORT EVENTS (page 9-121)	Sequence of panels beginning with EVENT SELECTION (page 8-88)

Chapter 8. Using the SVAA Panels

Chapter Summary

This chapter describes how to use SVAA panels to:

- Set session profile options
- Update one or more subsystem configurations
- Browse through the current configuration data
- Run the drive module utilities on one or more subsystems
- Display the status of a drain
- Perform Snap Minidisk and Snap Volume operations—if you have SnapShot installed.

You can also accomplish these tasks with interactive subcommands as described in Chapter 9, "SVAA Subcommands and Commands."

Using the SVAA Panels

This section describes how to use the SVAA panels: how to move through a panel, make field entries, and use the SVAA panel commands.

Using the Command or Option Field

In the command or option field, you can type:

- An SVAA panel command, such as **submit** (see "Using the Panel Commands and Function Keys" on page 8-3)
- An option number on a menu.
- A CMS command.
- An SVAA subcommand (see below)
- An ISPF command. Some useful examples are:

  keys Enables you to set your own function key definitions.

  panelid Causes the panel ID to appear in the upper-left corner of each panel during the current session.

  pfshow Displays your current function key definitions at the bottom of the panel. **pfshow off** turns off function key display. **pfshow tailor** lets you specify the number and arrangement of key definitions displayed.

  See the ISPF documentation for the complete list of these commands and their explanations.

Entering SVAA Subcommands in the Command or Option Field

You can execute SVAA subcommands from any panel by issuing the SIBCMD command. You do this by typing **SIBCMD** (or simply **SIB**—the short form) in the command (or option) field, followed by an SVAA subcommand, and pressing **Enter**. Refer to Chapter 9, "SVAA Subcommands and Commands" for detailed descriptions of the SVAA subcommands.

Note: If you type only **SIB** and press **Enter**, SVAA displays another panel that provides more space for entering one or more subcommands.

Examples:

```
SIB LISTCFG SUBSYS(SUBSYS(SVASYS) LEVEL(1))
```

requests a report on functional device configuration.

```
SIB SET CASE(UPPER)
```

causes all lowercase characters you enter during the session to be translated to uppercase.

Entering Values on the Panels

Fields with an arrow (**===>**) after the field name are data-entry fields. Fields with a colon (:) after the field name are display-only; you cannot enter data in these fields.

You can enter values in uppercase, lowercase, or mixed case.

You use two keys to move around the panels to make selections or to enter data:

Tab Moves the cursor to the next field in which you can enter data.

Enter Verifies that the values you have entered on the current panel are valid. Where appropriate, SVAA then displays the next panel.

Messages

SVAA displays brief messages in the upper-right corner of the panel. These messages might inform you of:

- The successful completion of a task, or
- Error conditions.

Issue the **HELP** command to display an expanded explanation.

Note: When displaying an error message, SVAA places the cursor under the field in which it finds the error.

Using the Panel Commands and Function Keys

The standard ISPF commands are available on the SVAA panels as well. The commands that are specifically defined for SVAA are listed and described in Table 8-1 on page 8-4, together with their default key assignments.

Not all SVAA panel commands work on all panels. For a list of the commands that you can use with the current panel, enter **?** in the command field.

Table 8-1. *SVAA panel commands*

Command	Description	Default Key
cancel	Terminates processing of items selected and displays the selection panel again.	F15
detail	Displays detailed test information for each drive module.	F19
end	Terminates the current operation. • On profile panels, **end** saves the changes you've made and returns to the previous panel. • On configuration panels, **end** *does not save* data you have entered. If you have selected additional items, the next panel appears; if not, the selection panel appears. • On a menu panel, **end** returns to the previous menu.	F3
help	Displays help information for the panel. When a message appears in the upper right corner of the panel, pressing this key displays a longer explanation of the message.	F1, F13
next	Displays the panel for the next selected item.	F23
part	(Partition) Displays the status of all drive modules in a partition.	F18
previous	Displays the panel for the previous selected item.	F22
refresh	Displays the values that are currently in effect.	F24
return	Terminates processing of all selected items and returns to the SVAA main menu.	F4, F16
sib	Provides a quick way to enter an SVAA subcommand. (Enter a subcommand in the panel command field and press the **sib** key. "**sib**" is prefixed to the subcommand and the whole command is executed.)	F20
submit	Executes the function of the panel with the data you have entered on it.	F6

SVAA Main Menu

To display the SVAA main menu, issue the **SIBMENU** command. (SIBMENU is a REXX EXEC supplied with SVAA to enable VM users to access the SVAA panels.)

SVAA displays a copyright panel and then the Shared Virtual Array Administrator main menu, as shown in Figure 8-1.

```
SIBMM00            *** SHARED VIRTUAL ARRAY ADMINISTRATOR ***
OPTION  ===>

   0  SVAA PARMS    - Specify user parameters
   1  CONFIGURATION - Configure and administer SVA subsystems
   2  SELECTION     - Maintain device selection lists
   3  REPORT        - Perform subsystem data collection and reporting
   4  SNAPSHOT      - Snap minidisk and snap volume
   X  EXIT          - Terminate SVAA processing


Enter END command to terminate SVAA
```

Figure 8-1. *SVAA main menu (SIBMM00)*

Select option **0**, **1**, or **4** on the SVAA main menu to begin one of the activities described in this chapter:

0 **SVAA PARMS**. Set parameters for your SVAA session. See “Session Administration” on page 8-6.

1 **CONFIGURATION**. Alter the SVA subsystem configuration, browse the current configuration information, execute drive module utilities, or view the status of asynchronous events. See “Subsystem Administration” on page 8-10.

4 **SNAPSHOT**. Specify SNAP MINIDISK and SNAP VOLUME subcommands. See “Specifying SnapShot Subcommands” on page 8-95.

Options **2** and **3** are documented in the *SVAA for VM Reporting* manual.

Enter **X** or issue the **end** command to terminate SVAA and return to ISPF.

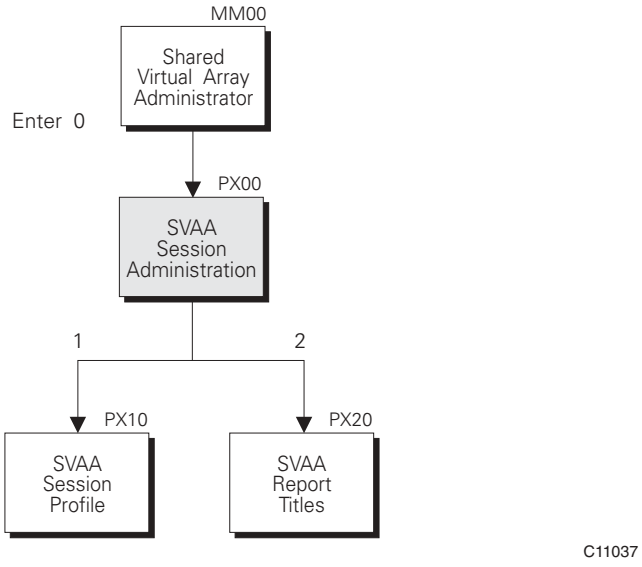
Each section in this chapter has a flow diagram of the panels you use to perform the task being described.

Note: Above each box in the flow diagram is a four-character label that identifies the panel. The seven-character panel ID consists of these four characters preceded by **SIB** (as shown in the figure captions for the panel examples). The panel ID appears on the screen when you issue the **PANELID** command.

Session Administration

Session administration consists of setting parameters for your SVAA session.

To display the SVAA SESSION ADMINISTRATION menu:



The SVAA SESSION ADMINISTRATION menu appears:

```
SIBPX00               *** SVAA SESSION ADMINISTRATION ***
OPTION ===>

   1  PROFILE       - Specify user profile options
   2  TITLES        - Specify report titles
```

Figure 8-2. *SVAA Session Administration menu (SIBPX00)*

Procedure

1. Type **1** and press **Enter** to display the SVAA SESSION PROFILE panel.
2. Type **2** and press **Enter** to display the SVAA REPORT TITLES panel on which you can enter title lines for your SVAA reports (see page 8-9).

Setting Profile Options

The following panel appears after you enter **1** on the SVAA SESSION ADMINISTRATION menu.

```
SIBPX10                  *** SVAA SESSION PROFILE ***
COMMAND===>

                 Permanent          Session
Option           Value              Value             Source
--------         ---------          --------          ---------
Case       ===>  MIXED       ===>   MIXED             perm
Pagesize   ===>     65       ===>   65                profile
Profile    ===>                     PROFSIBA          default
SRP User   ===>                ===>  DASDADM3          default
```

Figure 8-3. *SVAA Session Profile panel (SIBPX10)*

Use this panel to change your profile options, either for the current session only (use the **Session Value** fields), or for the current and future sessions as well (use the **Permanent Value** fields).

Note: Values you enter on this panel override the corresponding values in your SIBADMIN profile (see "SVAA Initialization Routines" on page 3-2).

Column Headings

Option The name of the option to be set.

Permanent Value The option value that applies to all sessions. This column is initially blank, although the default values are in effect for all options. Any allowable value you type in this column automatically appears in the **Session Value** column as well. This value applies for the rest of the current session and for all future sessions—until you enter a new value.

Session Value The option value that applies to the current session. To set a different value for the current session, type a new value in this column. (After you do so and press **Enter**, the value in the **Source** column changes to **session**.) The new session value does not affect the permanent value.

Source The source of the current value:

- **default** The value is the SVAA default value (which was set during SVAA initialization).
- **session** The value was typed in the **Session Value** column or entered via the appropriate SET SUBCOMMAND during the current session.
- **perm** The value was typed in the **Permanent Value** column during this session or a previous session.
- **profile** The value was set in the profile macro that was executed when you used SIBADMIN.

Procedure

1. Tab to and update the following optional fields as needed:

   Case Specifies whether SVAA translates values that you enter for subcommand parameters to uppercase or leaves them in mixed case.

   Enter **mixed** (or **m**) to have the case of characters interpreted exactly as you type them, or **upper** (or **u**) to have all characters you type interpreted as uppercase.

   Pagesize Sets the number of lines per page for SVAA reports. You can enter a number from 40 to 99.

   Profile Specifies the SVAA profile to be executed whenever you enter the SVAA panels in future sessions. (You cannot change the session value for the profile.)

   SRP User Specifies the ID of the service virtual machine for the Data Collection task.

2. Issue the **end** command to accept the new values and return to the SVAA SESSION ADMINISTRATION menu.

Specifying Report Titles

The following panel appears when you select option 2 on the SVAA SESSION ADMINISTRATION menu.

```
SIBPX20                    *** SVAA REPORT TITLES ***
COMMAND ===>

SOURCE: Title1- profile    Title2- profile    Title3- profile

SESSION:
Title1   ===> _
         ===>

Title2   ===>
         ===>

Title3   ===>
         ===>

PERMANENT:
Title1   ===>
         ===>

Title2   ===>
         ===>

Title3   ===>
         ===>
```

Figure 8-4. *SVAA Report Titles panel (SIBPX20)*

Use this panel to enter up to three title lines that will appear at the top center of each page of your reports. The three **SOURCE** fields show the source of the current text for each title. The default is a blank line.

Procedure

1. Tab to and update the following fields as needed:

   Session Title 1 to 3 — These titles apply only to reports produced during the current session.

   If you leave these lines blank, the permanent titles are used for this session.

   Permanent Title 1 to 3 — These titles apply to reports for future sessions. They are also used for the current session if you don't enter session titles on this panel.

2. Issue the **end** command to accept the new values and return to the SVAA SESSION ADMINISTRATION menu.

Subsystem Administration

The SUBSYSTEM ADMINISTRATION menu appears when you select option **1** on the SVAA main menu (page 8-5).

```
                    *** SUBSYSTEM ADMINISTRATION ***
OPTION ===>

   Subsystem ===>

   1  ALTER         - Alter subsystem configuration
   2  BROWSE        - Display subsystem configuration
   3  UTILITIES     - Execute drive module utilities
   4  EVENTS        - Report the status of asynchronous events
```

Figure 8-5. *Subsystem Administration menu (SIBAX00)*

Select options on this menu to begin any of the activities described in the remainder of this chapter:

1 **ALTER**. Update the characteristics of one or more subsystems, channel interfaces, or functional devices. The diagram on the following page shows the panel flow for these tasks.

2 **BROWSE**. View (but not update) panels displaying the current configuration information. For details, see “Browsing the Current Configuration” on page 8-67.

3 **UTILITIES**. Execute one of eight different drive module utilities. For details, see “Drive Module Utilities” on page 8-68.

4 **EVENTS**. View the status of drain events. For details, see “Displaying Event Status” on page 8-87.

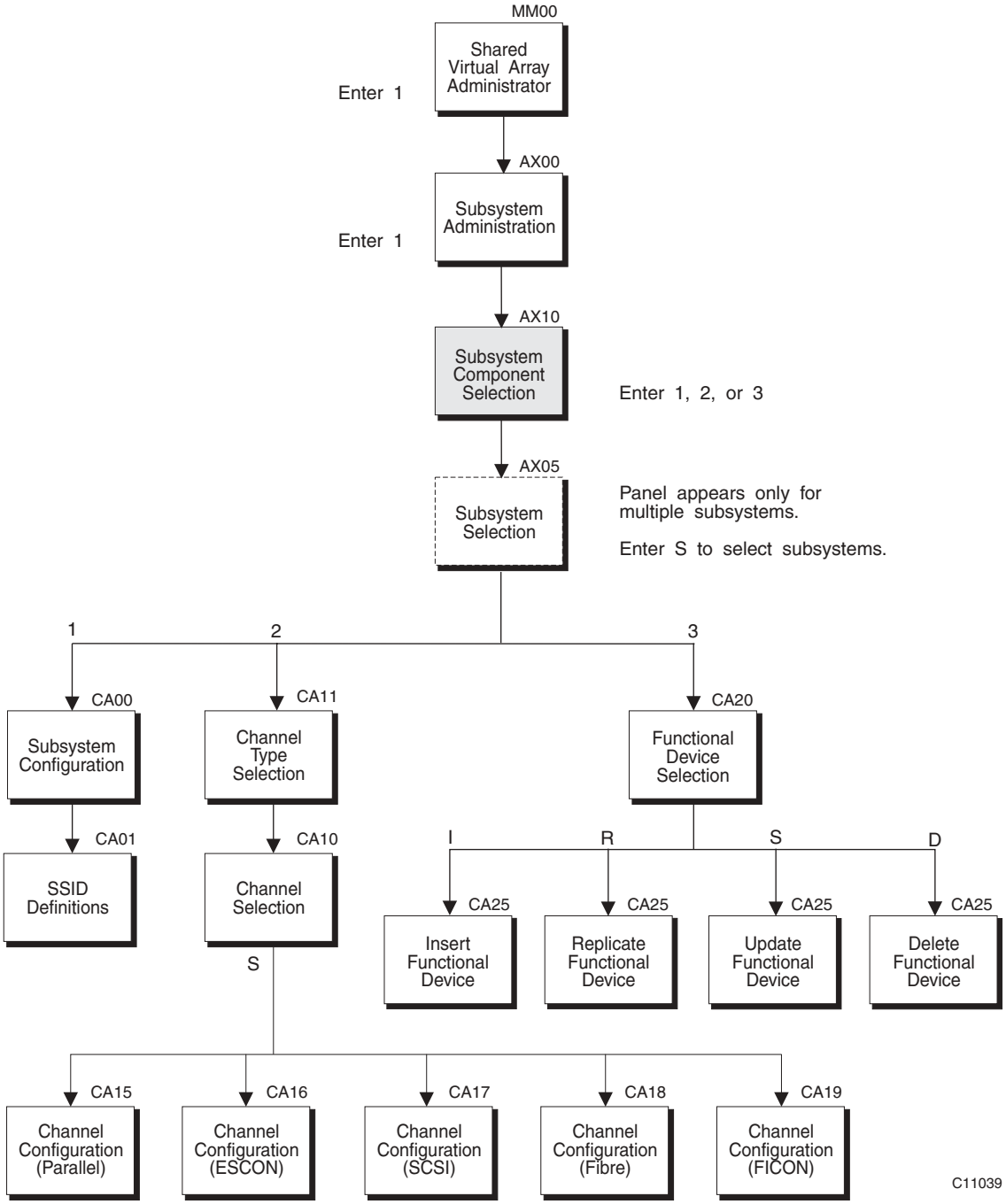
Procedure

1. Type the number of an option.
2. Tab to **Subsystem** and type the name of the SVA subsystem—*if* SVAA is communicating with multiple SVA subsystems and you want to work with only one of them. (Skip this field if you want to work with more than one subsystem.)
3. Press **Enter**.

Subsystem Component Selection

The following flow diagram shows all of the Alter Subsystem Configuration panels.

To display the SUBSYSTEM COMPONENT SELECTION menu, select option **1** on the main menu and then option **1** on the SUBSYSTEM ADMINISTRATION menu.



The SUBSYSTEM COMPONENT SELECTION menu appears when you select option **1** on the SUBSYSTEM ADMINISTRATION menu:

```
                    *** SUBSYSTEM COMPONENT SELECTION ***
OPTION ===>

   Subsystem ===>

   1  SUBSYSTEM     - Global subsystem characteristics
   2  CHANNEL       - Channel interface characteristics
   3  DEVICE        - Functional device characteristics
```

Figure 8-6. *Subsystem Component Selection menu (SIBAX10)*

Use this panel to select one of the following subsystem components:

1 **SUBSYSTEM**. Alter the characteristics of one or more subsystems. For details, see “Subsystem Configuration” on page 8-14.

2 **CHANNEL**. Alter the characteristics of one or more channel interfaces. For details, see “Channel Interface Configuration” on page 8-20.

3 **DEVICE**. Define (through insert or replicate), update, or delete one or more functional devices. For details, see “Functional Device Configuration” on page 8-35.

Procedure

1. Type the number of an option.

   Note: If you entered a subsystem name on the previous panel (SUBSYSTEM ADMINISTRATION), that name appears in the **Subsystem** field and you can skip Step 2.

2. Tab to the **Subsystem** field and type the name of the SVA subsystem—*if* SVAA is communicating with multiple SVA subsystems and you want to work with only one of them. (Skip this field if you want to work with more than one subsystem.)

3. Press **Enter**.

Result: The next panel to appear depends upon whether you still need to make a subsystem selection (that is, whether you are dealing with multiple subsystems at this point).

- **Multiple subsystems**. If you have issued the SET ECAMDEVICE subcommand for at least one device on two or more SVA subsystems during the current SVAA session *and* you have skipped the **Subsystem** field on each menu panel so far:

  The SUBSYSTEM SELECTION panel appears (see “Subsystem Selection” on page 8-13).

- **One subsystem**. If you have issued the SET ECAMDEVICE subcommand to only one SVA subsystem during the current SVAA session *or* you have entered a subsystem name on one of the first menu panels:

  The SUBSYSTEM CONFIGURATION panel (see page 8-15), the CHANNEL TYPE SELECTION panel (see page 8-21), or the FUNCTIONAL DEVICE SELECTION

panel (see page 8-36) appears, depending upon the option you have just selected.

Subsystem Selection

The example in Figure 8-7 lists four subsystems.

```
SIBAX05                 *** SUBSYSTEM SELECTION ***                ROW 1 OF 4
COMMAND ===>                                                    SCROLL ===> PAGE

 Type S to select subsystem, U to unselect subsystem.

 Enter END command to process selections or CANCEL to exit the selection list.

   Subsystem  Action
   ---------  --------
   SYS00
   SYS01
   ICEBOX6
   ICEBOX8
****************************** BOTTOM OF DATA ********************************
```

Figure 8-7. *Subsystem Selection panel (SIBAX05)*

On this panel you select one or more subsystems.

Procedure

1. Tab to each subsystem name you want to select and type **S** to the left of the name. (Type **U** to the left of a subsystem name to cancel its selection.)

   The **Action** field displays the status of your selections, for example:

   Selected The subsystem is selected for processing.

   INVALID The line command is invalid (only **S** and **U** are accepted).

2. Issue the **end** command.

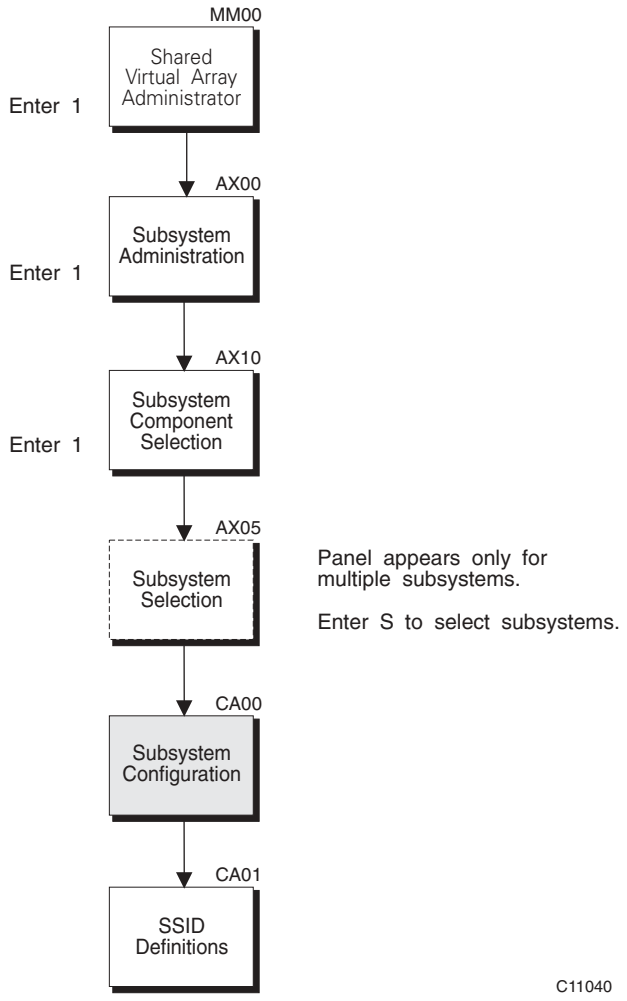
Result: The first panel appears for the task you have selected—to alter or browse the current configuration of a subsystem component, execute a drive module utility, or display the status of events.

Subsystem Configuration

The SUBSYSTEM CONFIGURATION panel enables you to update the global characteristics of a subsystem:

- the subsystem name,
- the site name,
- the subsystem identifiers (SSIDs) for the logical 3990s emulated, and
- the default array size (13+2 or 5+2)—that is, the number of drive modules (for user data plus redundancy data) to be used to form new arrays. **On the V2X or V960 SVA, the only array size available is 13+2.**
- the status of SCSI service information messages (either enabled or disabled).
- the total number of concurrent PPRC pair synchronizations (copylim).

To display the SUBSYSTEM CONFIGURATION panel:



Example of the SUBSYSTEM CONFIGURATION panel for all subsystems **except** the V2Xf:

```
SIBCA00                *** SUBSYSTEM CONFIGURATION ***            ROW 1 OF 2
COMMAND ===>                                                  SCROLL ===> PAGE

Site Name ===> STORTEK1  Subsystem Name ===> STK       Site Loc No.: 97802

Model: V2X                S/N: 310001320011       Cluster 0 - Channels: 10
SSIDs: 16   Maximum: 16   Display SSIDs ===> N    Cluster 1 - Channels: 10
                          SCSI SIM ===> ENABLED    Max. SCSI Addr:   15.15.255
Tot Vcyl:    1376544     Config Vcyl: 6869784     Unconfig Vcyl: 6806760

Cache Size:       8192 MB               Capacities:    Prod   Test   Overall
NVS Size:          256 MB              DA Capacity:   466.4    0.0  466.4 GB
No. of Arrays:       1                    Net Load:   226.3    0.0  226.3 GB
Global Spares:       1                  % Net Load:    48.5    0.0   48.5 %
Def Array Size  ===> 13+2        % Coll Free Space:    50.1    0.0   50.1 %
No. Func. Devices:   4096        % Uncoll Free Spc:     0.6    0.0    0.6 %
------------------------------ Installed Features -----------------------------
Maintenance                           SnapShot
PPRC                                  PPRCSnapShot
PowerPPRC                             FlexVolumes
******************************* BOTTOM OF DATA ********************************
```

Figure 8-8. *Subsystem Configuration panel for non-V2Xf subsystems (SIBCA00)*

Example of the SUBSYSTEM CONFIGURATION panel for the V2Xf:

```
SIBCA00                 *** SUBSYSTEM CONFIGURATION ***        Row 1 to 2 of 2
COMMAND ===>                                                  SCROLL ===> PAGE

Site Name ===> STORTEK1  Subsystem Name ===> TEST      Site Loc No.: 97802

Model: V2Xf               S/N: 481001320011       Cluster 0 - Channels:  4
SSIDs: 16   Maximum: 16   Display SSIDs ===> N    Cluster 1 - Channels:  4
Copylim ===>  1
Tot Vcyl:    27353088    Config Vcyl:  200361     Unconfig Vcyl: 27152727

Cache Size:       8192 MB               Capacities:    Prod   Test   Overall
NVS Size:          256 MB              DA Capacity:  1868.7    0.0 1868.7 GB
No. of Arrays:       2                    Net Load:     3.1    0.0    3.1 GB
Global Spares:       1                  % Net Load:     0.2    0.0    0.2 %
Def Array Size  ===> 13+2        % Coll Free Space:    99.8    0.0   99.8 %
No. Func. Devices:   4096        % Uncoll Free Spc:     0.0    0.0    0.0 %
------------------------------ Installed Features -----------------------------
Maintenance                           SnapShot
High Speed Data Mover                 PPRCFCN
PPRCSnapShot                          PAV
FlexVolumes                           Large Volumes
******************************* Bottom of data ********************************
```

Figure 8-9. *Subsystem Configuration panel for the V2Xf (SIBCA00)*

Display-only Fields

Site Loc No. A number (assigned by StorageTek) that identifies your site.

Model The model number—identifies the general characteristics of the subsystem.

S/N The serial number—identifies the specific subsystem.

Cluster - Channels The number of channels installed for each cluster.

SSIDs The number of subsystem identifiers (SSIDs) currently defined on the SVA subsystem. (Each logical 3990 in your entire installation must have a unique SSID.)

Maximum The maximum number of SSIDs that can be defined on the SVA subsystem.

Tot Vcyl The total number of virtual cylinders that can be defined on this SVA subsystem.

Config Vcyl The total number of configured virtual cylinders that have been defined on this SVA subsystem.

Unconfig Vcyl The total number of unconfigured virtual cylinders that remain available to be defined on this SVA subsystem.

Cache Size The cache size for the subsystem (in megabytes).

NVS Size The amount of nonvolatile storage (NVS).

No. of Arrays The number of arrays currently defined in the subsystem.

Global Spares The number of drive modules to be reserved as spares when you form new arrays.

No. Func. Devices The total number of functional devices defined for the subsystem.

Max. SCSI Addr The maximum allowable SCSI address for the subsystem (shown as *domain.target.lun*).

DA Capacity Disk array capacity: The formatted physical capacities (in gigabytes) of the **Test** partition arrays, **Prod**uction partition arrays, and **Overall** disk array capacity. (**Overall** excludes the capacity of drive modules not assigned to arrays.)

Net Load The physical space (in gigabytes) that is currently occupied by data (after compression and compaction) in the **Test** partition, **Prod**uction partition, and **Overall**.

% Net Load The percentage of physical space that is currently occupied by data in the **Test** partition, **Prod**uction partition, and **Overall**.

% Coll Free Space The percentage of array cylinder bytes (in the **Test** partition, **Prod**uction partition, and **Overall**) that are collected and entirely free of user data.

% Uncoll Free Spc The percentage of functional track bytes (in the **Test** partition, **Prod**uction partition, and **Overall**) that are free but unavailable (uncollected).

Installed Features A list of the optional features you have installed.

Procedure

1. Tab to and update the following fields as required:

   Site Name A name you can use to identify your company, organization, or location. Enter 1 to 8 characters in the set: a to z, A to Z, 0 to 9, $, @, _, #, -, +, &, ., /, or set the name to blanks.

   Subsystem Name The name of the SVA subsystem. Each SVA subsystem name must be unique. Enter 1 to 8 characters in the set: a to z, A to Z, 0 to 9, $, @, _, #, -, +, &, ., /

   Display SSIDs Enter **Y** (and press **Enter**) to display the SSID DEFINITIONS panel (see page 8-18). The default is **N**.

   Def Array Size The default array size: the number of drive modules (for user data + redundancy data) to be used to form each new array.

   Enter **5+2** or **13+2**

   Note: You cannot change an array's size once it is formed. For a different array size, first drain the array and then form a new array of the desired size.

   SCSI SIM Status Specifies whether SCSI SIMs (service information messages) are to be displayed (enabled) or not (disabled).

   Enter **ENABLED** or **DISABLED**

Copylim Specifies the total number of concurrent PPRC synchronizations.

Enter a decimal value between **0** and **32**.

2. Issue the **submit** command to update the configuration. The panel displays the new values.

Panel Command Options

To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

end Displays the next panel (if you selected more than one subsystem), or returns to the SUBSYSTEM COMPONENT SELECTION menu (if you selected no other subsystems).

cancel Stops the processing of all selected subsystems and returns to the previous panel (SUBSYSTEM SELECTION or SUBSYSTEM COMPONENT SELECTION).

SSID Definition

If you entered **Y** (and pressed **Enter**) in the **Display SSIDs** field on the SUBSYSTEM CONFIGURATION panel, SVAA displays the SSID DEFINITIONS panel. This panel enables you to view, add, or change the current definitions of SSIDs—the subsystem identifiers for the virtual control units (the 3990 controllers emulated within the SVA subsystem).

```
SIBCA01                     *** SSID DEFINITIONS ***               ROW 1 OF 4
COMMAND ===>                                                  SCROLL ===> PAGE

                           Subsystem Name: STK

                           Defined:  8   Maximum: 16

                           SSIDBASE ===>

        VCU  SSID        VCU  SSID        VCU  SSID        VCU  SSID
          0  AC00          1  AD00          2  AE00          3  AF00
          4  B400          5  B500          6  B600          7  B700
          8                9               10               11
         12               13               14               15
****************************** BOTTOM OF DATA ********************************
```

Figure 8-10. *SSID Definition panel (SIBCA01)*

In this example, only 8 of a possible 16 SSIDs have been defined. (This example applies to the V2X SVA; earlier SVA subsystems are limited to 4 SSIDs.)

Notes:

1. Each VCU (logical 3990) in your entire installation must have a unique SSID.
2. Once you define an SSID as non-zeroes, you cannot redefine it as zeroes.
3. You *cannot* redefine an SSID on a subsystem on which PPRC is enabled. You must first have your hardware support representative disable PPRC capability for the subsystem. Then, after you have redefined the SSID, PPRC can be re-enabled for the subsystem.

You can define SSIDs in two different ways—by using the **SSIDBASE** field, or by specifying SSIDs for each VCU individually.

Procedure for the SSIDBASE field

1. Tab to the **SSIDBASE** field and enter a "base" SSID (a 4-digit hexadecimal value) for VCU 0. SVAA assigns SSIDs to all other VCUs in ascending hexadecimal sequence, beginning with the base SSID.

   Note: The SSID value you specify must not allow the last SSID to exceed FFFF. For example, on a subsystem that supports 16 SSIDs, FFF0 is the highest valid entry for SSIDBASE.

2. Issue the **submit** command to update the configuration. The panel displays the new SSID values. For example, entering an SSIDBASE value of **0700** results in this display:

```
SIBCA01                     *** SSID DEFINITIONS ***              ROW 1 OF 4
COMMAND ===>                                                   SCROLL ===> PAGE

                          Subsystem Name: STK

                          Defined: 16   Maximum: 16

                          SSIDBASE ===> 0700

        VCU  SSID        VCU  SSID        VCU  SSID        VCU  SSID
          0  0700          1  0701          2  0702          3  0703
          4  0704          5  0705          6  0706          7  0707
          8  0708          9  0709         10  070A         11  070B
         12  070C         13  070D         14  070E         15  070F
****************************** BOTTOM OF DATA ********************************
```

Figure 8-11. *SSID Definition panel, using SSIDBASE (SIBCA01)*

3. Issue the **end** command to return to the SUBSYSTEM CONFIGURATION panel.

Procedure for assigning individual SSIDs

1. Tab to and enter or update the SSID for one more VCUs, using a 4-digit hexadecimal value ranging from 0001 to FFFF.
2. Issue the **submit** command to update the configuration. The panel displays the new SSID values.
3. Issue the **end** command to return to the SUBSYSTEM CONFIGURATION panel.

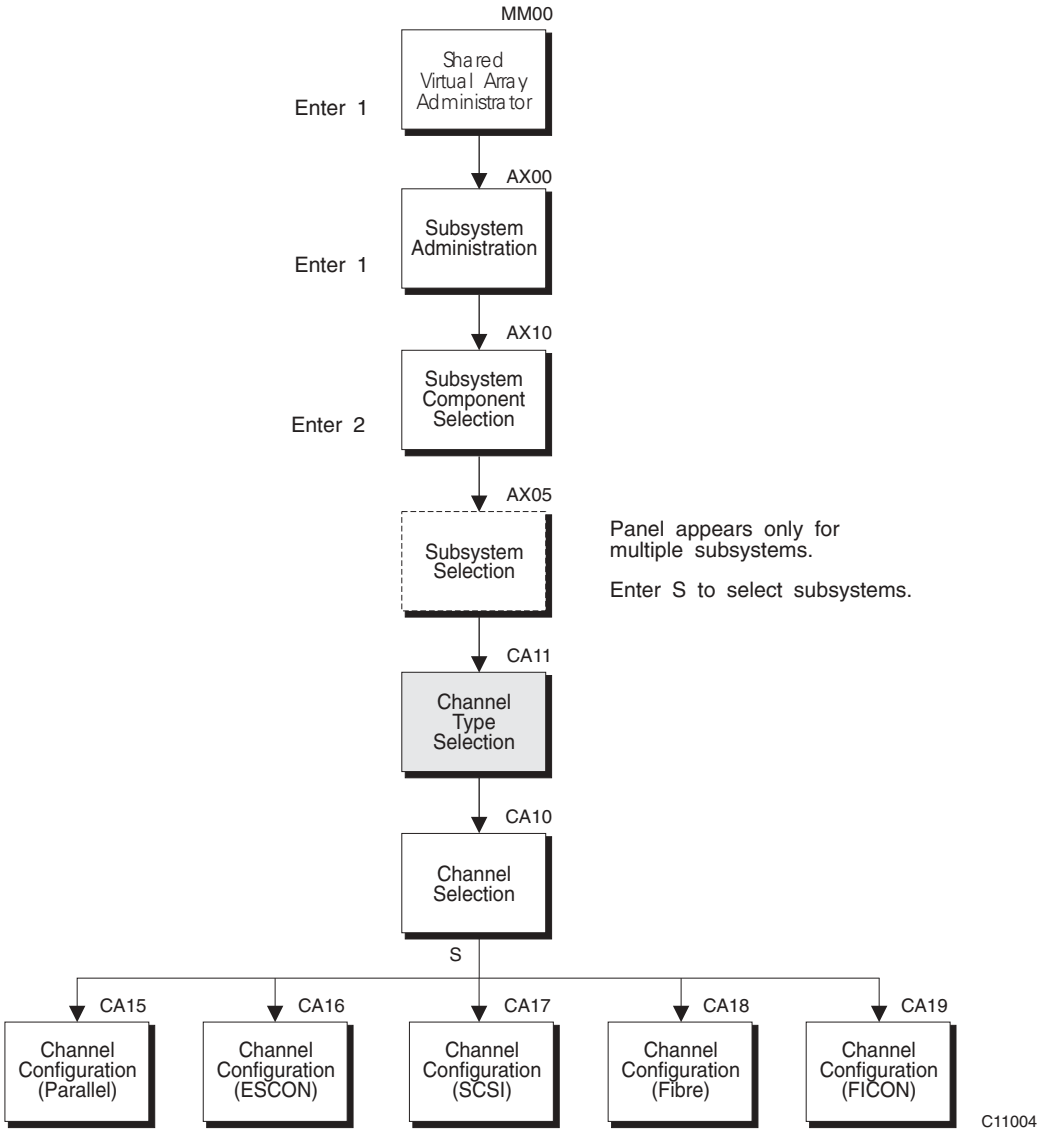
Channel Interface Configuration

SVAA enables you to alter interface characteristics for parallel, ESCON, FICON, and SCSI channels:

- For a **parallel** (bus and tag cables) channel, you can change the name of the channel interface, the channel speed, the base address and range of addresses trapped by the channel interface, and the base functional device ID.
- For an **ESCON**, FICON, **SCSI**, or **fibre** channel, you can change only the name of the channel interface.

Note: You *cannot* alter the characteristics of a channel interface that is used by a PPRC pair.

First, you use the CHANNEL TYPE SELECTION panel to select the type of channel interface to be altered. To display the CHANNEL TYPE SELECTION panel:



Here is an example of the CHANNEL TYPE SELECTION panel.

```
SIBCA11                 *** CHANNEL TYPE SELECTION ***
OPTION ===>

                          Subsystem Name: STK

      --Type--      Speed   Total  Enabled
   1  ** ALL **               12       12
   2  PARALLEL
   3  ESCON          20.0       4        4
   4  SCSI           40.0       4        4
   5  FIBRE         100.0       4        4
   6  FICON         200.0       4        4
```

Figure 8-12. *Channel Type Selection panel (SIBCA11)*

Use this panel to select the type of channel you want to alter. Enter **1** to display a CHANNEL SELECTION panel that lists **all** channels on the subsystem. Enter a digit from **2** to **5** to list channels of only one type.

Here are examples of the six forms of the CHANNEL SELECTION panel. The first example is for all channels (except FICON) followed by examples for parallel, ESCON, SCSI, fibre, and finally FICON channels:

```
SIBCA10                   *** CHANNEL SELECTION ***              ROW 1 OF 12
COMMAND===>                                                   SCROLL ===> PAGE

                  Subsystem Name: STK         Type: ALL

             Interface
    --Name--  Clust Chan Ena  --Type--  Speed
___ ICE000      0     A   Y   ESCON      20.0
___ ICE000      0     C   Y   ESCON      20.0
___             0     E   Y   FIBRE     100.0
___             0     G   Y   FIBRE     100.0
___             0     I   Y   SCSI       40.0
___ CHAN-0.K    0     K   Y   SCSI       40.0
___             1     A   Y   ESCON      20.0
___             1     C   Y   ESCON      20.0
___ FIBR_1.E    1     E   Y   FIBRE     100.0
___             1     G   Y   FIBRE     100.0
___ TEST-1.I    1     I   Y   SCSI       40.0
___ TEST-1.K    1     K   Y   SCSI       40.0
****************************** BOTTOM OF DATA ********************************
```

Figure 8-13. *Channel Selection panel—All channels except FICON (SIBCA10)*

```
SIBCA10                    *** CHANNEL SELECTION ***              ROW 1 OF 8
COMMAND===>                                                    SCROLL ===> PAGE

                  Subsystem Name: STK         Type: PARALLEL

              Interface       ----Address----
    --Name--  Clust Chan Ena  Base Range BFDID
___ INT_0_A     0     A   Y     00   256   00
___ NOTINSTL    0     B   N     00   256   00
___ NOTINSTL    0     C   N     00   256   00
___ NOTINSTL    0     D   N     00   256   00
___ LSTC8VM     1     A   Y     00   256   00
___ NOTINSTL    1     B   N     00   256   00
___ NOTINSTL    1     C   N     00   256   00
___ NOTINSTL    1     D   N     00   256   00
******************************* BOTTOM OF DATA ********************************
```

Figure 8-14. *Channel Selection panel—Parallel channels (SIBCA10)*

```
SIBCA10                    *** CHANNEL SELECTION ***              ROW 1 OF 8
COMMAND===>                                                    SCROLL ===> PAGE

                  Subsystem Name: STK         Type: ESCON

              Interface       ----Address----
    --Name--  Clust Chan Ena  Base Range FDID
___ ICE000      0     A   Y     00  4096   00
___ ICE000      0     B   Y     00  4096   00
___             0     C   Y     00  4096   00
___             0     D   Y     00  4096   00
___             1     A   Y     00  4096   00
___             1     B   Y     00  4096   00
___             1     C   Y     00  4096   00
___             1     D   Y     00  4096   00
******************************* BOTTOM OF DATA ********************************
```

Figure 8-15. *Channel Selection panel—ESCON channels (SIBCA10)*

```
SIBCA10                    *** CHANNEL SELECTION ***              ROW 1 OF 4
COMMAND===>                                                    SCROLL ===> PAGE

                  Subsystem Name: STK         Type: SCSI

              Interface       -DTL-
    --Name--  Clust Chan Ena  Count Domain  SCSI Identifier
___             0     I   Y       0 000 000 534E524100000012
___ CHAN-0.K    0     K   Y       7 001 007 4753424100000081
___ TEST-1.I    1     I   Y       0
___ TEST-1.K    1     K   Y       0 000 004 FFFFFFFFFFFFFFFF
****************************** BOTTOM OF DATA ********************************
```

Figure 8-16. *Channel Selection panel—SCSI channels (SIBCA10)*

```
SIBCA10                    *** CHANNEL SELECTION ***              ROW 1 OF 4
COMMAND===>                                                    SCROLL ===> PAGE

                  Subsystem Name: STK         Type: FIBRE

              Interface       ---World Wide---
    --Name--  Clust Chan Ena  ---Node Name---- ---Port Name---- Address-
___             0     E   Y   500104F0004118A2 500104F0004118AC 00000003
___             0     G   Y   500104F0004118A3 500104F0004118AC 00000003
___ FIBR_1.E    1     E   Y   500104F000411885 500104F000411880 00000003
___             1     G   Y   500104F000411886 500104F000411880 00000003
****************************** BOTTOM OF DATA ********************************
```

Figure 8-17. *Channel Selection panel—Fibre channels (SIBCA10)*

```
SIBCA10                    *** CHANNEL SELECTION ***          Row 1 to 4 of 4
COMMAND===>                                                 SCROLL ===> PAGE

                   Subsystem Name: STKFI       Type: FICON

          Interface      ----Address---- ---World Wide---
 --Name-- Clust Chan Ena Base Range FDID ---Node Name---- ---Port Name----
_           0     A   Y    00 4096    00 500104F0006FDDD0 500104F00045F14C
_           0     B   Y    00 4096    00 500104F0006FDDD0 500104F00045F14D
_           0     C   Y    00 4096    00 500104F0006FDDD0 500104F00045F12A
_           0     D   Y    00 4096    00 500104F0006FDDD0 500104F00045F12B
_           1     A   Y    00 4096    00 500104F0006FDDD0 500104F00045F13C
_           1     B   Y    00 4096    00 500104F0006FDDD0 500104F00045F13D
_           1     C   Y    00 4096    00 500104F0006FDDD0 500104F00045F144
_           1     D   Y    00 4096    00 500104F0006FDDD0 500104F00045F145
****************************** Bottom of data ******************************
```

Figure 8-18. *Channel Selection panel—FICON channels (SIBCA10)*

The six panel examples above display the current characteristics of the channel interfaces and let you select one or more channel interfaces to be altered.

Procedure (for all Channel Selection panels)

1. Tab to the desired channel and type **S** at the left end of the line. (Repeat for other channels, if necessary.)

   Issue the **forward** command to display more channels, if more exist.

   You can select a sequence of two or more channels by typing **S***n* (or **S***nn*) at the first channel in the sequence. (*n* or *nn* represents the number of channels to be selected.)

2. Press **Enter**.

   Result: The CHANNEL CONFIGURATION panel appears.

   For **parallel** channel configuration, see page 8-25.

   For **ESCON** channel configuration, see page 8-27.

   For **SCSI** channel configuration, see page 8-29.

   For **fibre** channel configuration, see page 8-31.

   For **FICON** channel configuration, see page 8-32.

Panel Command Options

To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

cancel Terminates channel configuration for all selected subsystems and returns to the previous panel (SUBSYSTEM SELECTION or SUBSYSTEM COMPONENT SELECTION).

Configuring a Parallel Channel

To alter any parallel channel characteristics you must first **vary the channel offline** to all hosts and disable the channel interface (see Procedure).

Example of the CHANNEL CONFIGURATION panel for a parallel channel:

```
SIBCA15               *** CHANNEL CONFIGURATION ***               ROW 1 OF 1
COMMAND===>

                           Subsystem Name: STK

                          -- Channel Interface --
                              Cluster  Channel
                                 0        A

                                   Enabled
                                 ===> Y

 Name ===> INT_0_A     Channel Speed ===> 4.5       Channel Type: PARALLEL

                        Base Address ===> 00
                       Address Range ===> 256
           Base Functional Device ID ===> 00

  SSIDs Spanned:  VCU  SSID    VCU  SSID    VCU  SSID    VCU  SSID
                    0  AC00      1  AD00      2  AE0O      3  AF00
****************************** BOTTOM OF DATA ********************************
```

Figure 8-19. *Channel Configuration panel—Parallel channel (SIBCA15)*

Display-only Fields

Subsystem Name The name of the SVA subsystem.

Cluster The cluster (0 or 1) to which the channel interfaces.

Channel The channel interface to which the channel is connected—within the specified cluster. Channel interfaces are designated A through P.

Up to 32 channels can exist—16 per cluster.

Channel Type The type of channel interface (PARALLEL in this case).

SSIDs Spanned The subsystem identifiers, listed by VCU, associated with the current address range and BFDID for this channel.

Procedure

1. Vary the channel offline to all hosts.
2. Type **N** in the **Enabled** field to disable the channel interface.
3. Tab to and update the following fields as needed:

   Name Optional. The name of the channel interface. Enter 1 to 8 characters in the set: a to z, A to Z, 0 to 9, $, @, _, #, -, +, &, ., /, or set the name to blanks.

Channel Speed The channel's data transfer rate—the speed (in megabytes per second) at which data travels between the host and the SVA controller.
Valid speeds for a parallel channel: 3.0 and 4.5

Base Address The starting base address (hexadecimal) that this channel interface can trap. Refer to Table 8-2 for valid base addresses for a given address range.

Address Range The number of addresses (decimal) to be trapped by the channel interface. Refer to Table 8-2 for valid address ranges.

Base Functional Device ID
The BFDID (hexadecimal) for the channel interface. Refer to Table 8-2 for valid BFDIDs for a given address range.

Table 8-2. *Valid configuration entries for a parallel channel*

Address Range (decimal)	Base Address and BFDID values (hexadecimal)
8	00 08 10 18 20 28 30 38 40 48 50 58 60 68 70 78 80 88 90 98 A0 A8 B0 B8 C0 C8 D0 D8 E0 E8 F0 F8
16	00 10 20 30 40 50 60 70 80 90 A0 B0 C0 D0 E0 F0
32	00 20 40 60 80 A0 C0 E0
64	00 40 80 C0
128	00 80
256	00

4. Issue the **submit** command.

   Result: The channel interface characteristics are updated, and the panel displays the updated fields. The SSIDs listed in the **SSIDs Spanned** field reflect the information you enter.

5. Type **Y** in the **Enabled** field and issue the **submit** command.

6. Vary the channel online to all hosts.

Panel Command Options

To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

next Displays the next CHANNEL CONFIGURATION panel—if you selected multiple channels.

previous Displays the previous CHANNEL CONFIGURATION panel—unless the first channel you selected is displayed.

end Cancels the entries you have made and displays the next CHANNEL CONFIGURATION panel or, if this is the last channel selected, returns to the CHANNEL SELECTION panel.

cancel Cancels the entries you have made, terminates all channel configuration, and returns to the CHANNEL SELECTION panel.

Configuring an ESCON Channel

For an ESCON channel, the only characteristic you can change is the channel interface name.

Example of the CHANNEL CONFIGURATION panel for an ESCON channel:

```
SIBCA16               *** CHANNEL CONFIGURATION ***               ROW 1 OF 4
COMMAND===>

                           Subsystem Name: STK

                          -- Channel Interface --
                              Cluster  Channel
                                 0        A

                                    Enabled
                                       Y

 Name ===> 0.A         Channel Speed: 20.0         Channel Type: ESCON

                        Base Address: 00
                       Address Range: 4096
          Base Functional Device ID: 00

  SSIDs Spanned:  VCU  SSID    VCU  SSID    VCU  SSID    VCU  SSID
                    0  AC00      1  AD00      2  AEOO      3  AF00
                    4  B400      5  B500      6  B6OO      7  B700
                    8  B800      9  B900     10  BA00     11  BB00
                   12  BC00     13  BD00     14  BE00     15  BF00
****************************** BOTTOM OF DATA ********************************
```

Figure 8-20. *Channel Configuration panel—ESCON channel (SIBCA16)*

Display-only Fields

Subsystem Name The name of the SVA subsystem.

Cluster The cluster (0 or 1) to which the channel interfaces.

Channel The channel interface to which the channel is connected—within the specified cluster. Channel interfaces are designated A through P.

Up to 32 channels can exist—16 per cluster.

Enabled The current channel status (Y=Enabled, N=Disabled)

Channel Speed The channel's data transfer rate—the speed (in megabytes per second) at which data travels between the host and the SVA controller.

Channel Type The type of channel interface (ESCON in this case).

Base Address The starting base address (hexadecimal) that this channel interface can trap.

Address Range The number of addresses (decimal) to be trapped by the channel interface.

Base Functional Device ID
The BFDID (hexadecimal) for the channel interface.

SSIDs Spanned The subsystem identifiers, listed by VCU, associated with the current address range and BFDID for this channel. (You can define 16 SSIDs on the V2X SVA, but only 4 on earlier SVAs.)

Procedure

1. Tab to and update the following field:

   Name The name of the channel interface. Enter 1 to 8 characters in the set: a to z, A to Z, 0 to 9, $, @, _, #, -, +, &, ., /, or set the name to blanks.

2. Issue the **submit** command.

Result: The channel interface name is updated and the panel displays the new name.

Panel Command Options

To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

next Displays the next CHANNEL CONFIGURATION panel—if you selected multiple channels.

previous Displays the previous CHANNEL CONFIGURATION panel—unless the first channel you selected is displayed.

end Cancels the entries you have made and displays the next CHANNEL CONFIGURATION panel or, if this is the last channel selected, returns to the CHANNEL SELECTION panel.

cancel Cancels the entries you have made, terminates all channel configuration, and returns to the CHANNEL SELECTION panel.

Configuring a SCSI I/O Interface

For a SCSI I/O interface, the only characteristic you can change is the channel interface name.

Example of the CHANNEL CONFIGURATION panel for a SCSI I/O interface:

```
SIBCA17                *** CHANNEL CONFIGURATION ***
COMMAND===>

                            Subsystem Name: STK

                           -- Channel Interface --
                               Cluster  Channel
                                  0        A

                                    Enabled
                                       Y

 Name  ===> INT_0_A     Channel Speed: 40.0        Channel Type: SCSI

                             DTL Count: 7
                           SCSI Domain: 001  007
                      SCSI Identifier: 4753424100000081

    Domains Supported: 16     Targets/Domain: 15      LUNs/Target: 8
```

Figure 8-21. *Channel Configuration panel—SCSI I/O interface (SIBCA17)*

Display-only Fields

Subsystem Name The name of the SVA subsystem.

Cluster The cluster (0 or 1) to which the channel interfaces.

Channel The channel interface to which the channel is connected—within the specified cluster. Channel interfaces are designated A through P.

Up to 32 channels can exist—16 per cluster.

Enabled The current channel status (Y=Enabled, N=Disabled)

Channel Speed The channel's data transfer rate—the speed (in megabytes per second) at which data travels between the host and the SVA controller.

Channel Type The type of channel interface (SCSI in this case).

DTL Count The number of domain-target-LUNs (DTLs) that have been identified for this channel.

SCSI Domain The identifier(s) of the SCSI domain(s) for this channel.

SCSI Identifier The SCSI identifier for this channel.

Domains supported The maximum number of domains supported for this type of interface.

Targets/Domain The maximum number of targets per domain supported for this type of interface.

LUNs/Target The maximum number of LUNs per target supported for this type of interface.

Procedure

1. Tab to and update the following field:

   Name The name of the channel interface. Enter 1 to 8 characters in the set: a to z, A to Z, 0 to 9, $, @, _, #, -, +, &, ., /, or set the name to blanks.

2. Issue the **submit** command.

Result: The channel interface name is updated and the panel displays the new name.

Panel Command Options

To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

next Displays the next CHANNEL CONFIGURATION panel—if you selected multiple channels.

previous Displays the previous CHANNEL CONFIGURATION panel—unless the first channel you selected is displayed.

end Cancels the entries you have made and displays the next CHANNEL CONFIGURATION panel or, if this is the last channel selected, returns to the CHANNEL SELECTION panel.

cancel Cancels the entries you have made, terminates all channel configuration, and returns to the CHANNEL SELECTION panel.

Configuring a Fibre Channel Interface

For a fibre channel interface, the only characteristic you can change is the channel interface name.

Example of the CHANNEL CONFIGURATION panel for a fibre channel interface:

```
SIBCA18                *** CHANNEL CONFIGURATION ***
COMMAND===>

                             Subsystem Name: STK

                            -- Channel Interface --
                                Cluster  Channel
                                   1        E

                                     Enabled
                                        Y

 Name  ===> FIBR_1.E    Channel Speed: 100.0       Channel Type: FIBRE

                                 World Wide Node Name: 500104F000411885
             SCSI Domain: 005                Port Name: 500104F000411880
                                               Address: 00000003

    Domains Supported: 16     Targets/Domain: 1       LUNs/Target: 256
```

Figure 8-22. *Channel Configuration panel—Fibre channel interface (SIBCA18)*

Display-only Fields

Subsystem Name The name of the SVA subsystem.

Cluster The cluster (0 or 1) to which the channel interfaces.

Channel The channel interface to which the channel is connected—within the specified cluster. Channel interfaces are designated A through P.

Up to 32 channels can exist—16 per cluster.

Enabled The current channel status (Y=Enabled, N=Disabled)

Channel Speed The channel's data transfer rate—the speed (in megabytes per second) at which data travels between the host and the SVA controller.

Channel Type The type of channel interface (FIBRE in this case).

World Wide Node Name The unique name for this fibre channel node.

SCSI Domain The identifier(s) of the SCSI domain(s) for this channel.

Port Name The fibre channel port name.

Address The fibre channel loop ID.

Domains supported The maximum number of domains supported for this type of interface.

Targets/Domain The maximum number of targets per domain supported for this type of interface.

LUNs/Target The maximum number of LUNs per target supported for this type of interface.

Procedure

1. Tab to and update the following field:

   Name The name of the channel interface. Enter 1 to 8 characters in the set: a to z, A to Z, 0 to 9, $, @, _, #, -, +, &, ., /, or set the name to blanks.

2. Issue the **submit** command.

Result: The channel interface name is updated and the panel displays the new name.

Panel Command Options

To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

next Displays the next CHANNEL CONFIGURATION panel—if you selected multiple channels.

previous Displays the previous CHANNEL CONFIGURATION panel—unless the first channel you selected is displayed.

end Cancels the entries you have made and displays the next CHANNEL CONFIGURATION panel or, if this is the last channel selected, returns to the CHANNEL SELECTION panel.

cancel Cancels the entries you have made, terminates all channel configuration, and returns to the CHANNEL SELECTION panel.

Configuring a FICON Channel

For a FICON channel, the only characteristic you can change is the channel interface name.

Example of the CHANNEL CONFIGURATION panel for a FICON channel:

```
SIBCA16                *** CHANNEL CONFIGURATION ***          Row 1 to 4 of 4
COMMAND===>

                            Subsystem Name: STK

                          -- Channel Interface --
                              Cluster  Channel
                                 0        A

                                  Enabled
                                     Y

 Name ===> 0.A          Channel Speed: 100.0        Channel Type: FICON

                                World Wide Node Name: 500104F0006FDDD0
                                           Port Name: 500104F00045F14C

  Base Address: 00     Address Range: 4096   Base Functional Device ID: 00

  SSIDs Spanned:  VCU  SSID    VCU  SSID    VCU  SSID    VCU  SSID
                    0  AC00      1  AD00      2  AEOO      3  AF00
                    4  B400      5  B500      6  B6OO      7  B700
                    8  B800      9  B900     10  BA00     11  BB00
                   12  BC00     13  BD00     14  BE00     15  BF00
```

Figure 8-23. *Channel Configuration panel—FICON channel (SIBCA19)*

Display-only Fields

Subsystem Name The name of the SVA subsystem.

Cluster The cluster (0 or 1) to which the channel interfaces.

Channel The channel interface to which the channel is connected—within the specified cluster. Channel interfaces are designated A through P.

Up to 32 channels can exist—16 per cluster.

Enabled The current channel status (Y=Enabled, N=Disabled)

Channel Speed The channel's data transfer rate—the speed (in megabytes per second) at which data travels between the host and the SVA controller.

Channel Type The type of channel interface (FICON in this case).

Base Address The starting base address (hexadecimal) that this channel interface can trap.

Address Range The number of addresses (decimal) to be trapped by the channel interface.

Base Functional Device ID
The BFDID (hexadecimal) for the channel interface.

SSIDs Spanned The subsystem identifiers, listed by VCU, associated with the current address range and BFDID for this channel. (You can define 16 SSIDs on the V2X SVA, but only 4 on earlier SVAs.)

Procedure

1. Tab to and update the following field:

Name The name of the channel interface. Enter 1 to 8 characters in the set: a to z, A to Z, 0 to 9, $, @, _, #, -, +, &, ., /, or set the name to blanks.

2. Issue the **submit** command.

Result: The channel interface name is updated and the panel displays the new name.

Panel Command Options

To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

next Displays the next CHANNEL CONFIGURATION panel—if you selected multiple channels.

previous Displays the previous CHANNEL CONFIGURATION panel—unless the first channel you selected is displayed.

end Cancels the entries you have made and displays the next CHANNEL CONFIGURATION panel or, if this is the last channel selected, returns to the CHANNEL SELECTION panel.

cancel Cancels the entries you have made, terminates all channel configuration, and returns to the CHANNEL SELECTION panel.

Functional Device Configuration

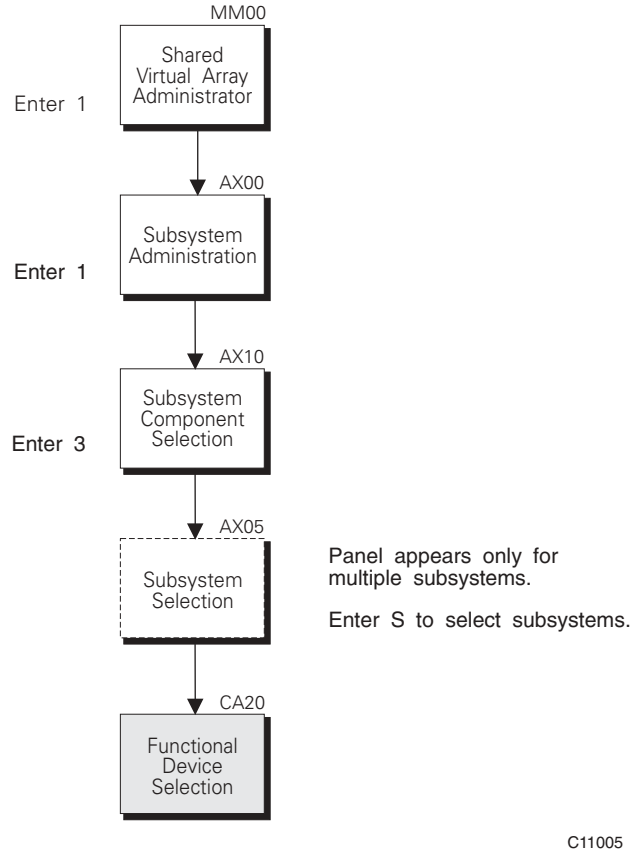
The functional device configuration panels enable you to define additional functional devices (including privileged ECAM devices), update the definition and/or status of functional devices, and delete functional devices.

You can define a maximum of 4096 functional devices on each V2X SVA subsystem. The number is less than 4096 if you define any 3390-9 devices. If you define ***all*** devices as 3390-9s, the maximum number is only 1365 devices per subsystem.

Note: For the maximum number of FDIDs on subsystems earlier than the V2X, see "Functional Differences between Subsystems" on page 1-3.

The configuration process begins with the FUNCTIONAL DEVICE SELECTION panel. The entries you make on this panel lead to either an Insert, Replicate, Initialize, Update, or Delete panel.

To display the FUNCTIONAL DEVICE SELECTION panel:



Examples of the FUNCTIONAL DEVICE SELECTION panels:

```
SIBCA20               *** FUNCTIONAL DEVICE SELECTION ***       ROW 1 OF 1,021
COMMAND===>                                                   SCROLL ===> PAGE

               Subsystem Name: TESTV2X         Find FDID===>
                           Fast Path Replicate ===> NO
Tot Vcyl:    27353088     Config Vcyl: 167600     Unconfig Vcyl: 27185488

               Device      -------Host--------- CKD SCSI SVAA --Functional--
      FDID P/T -Type- SSID Volser Unit -Status- R/W  R/W Comm -Cyls Capacity
____    00  P  33903  C001 BH0000 C000 MOUNTED   Y    N    N   3339   2838.0
____    01  P  33903                            Y    N    N   3339   2838.0
____    02  P  33903  C001 BH0002 C000 MOUNTED   Y    N    Y   3339   2838.0
____    03  P  33903                            Y    N    N   3339   2838.0
____    04  P  33903                            Y    N    N     42     35.7
____    05  P  33903                            Y    N    N   3339   2838.0
____    06  P  33903                            Y    N    N   3339   2838.0
____    07  P  33903                            Y    N    N   3339   2838.0
____    08  P  SCSIB                            Y    N    N  10017   3691.9
____    09  P  SCSIB                            Y    N    N  10017   3691.9
____    0A  P  SCSIB                            Y    N    N  10017   3691.9
____    0B  P  SCSIB                            Y    N    N  10017   3691.9
____    0C  P  SCSIB                            Y    N    N  10017   3691.9
____    0D  P  SCSIB                            Y    N    N  10017   3691.9
```

Figure 8-24. *Functional Device Selection panel for non-V2Xf subsystems (SIBCA20)*

```
SIBCA20               *** FUNCTIONAL DEVICE SELECTION ***       Row 76 of 93
COMMAND===>                                                   SCROLL ===> CSR

               Subsystem Name: PRODV2XF        Find FDID===>
                           Fast Path Replicate ===> NO
Tot Vcyl:    27353088     Config Vcyl: 167600     Unconfig Vcyl: 27185488

               Device      -------Host--------- CKD SCSI SVAA --Functional--
      FDID B/A -Type- SSID Volser Unit -Status- R/W  R/W Comm -Cyls Capacity
____   700  B  33903  7700 SW7700 7700 MOUNTED   Y    N    N   3339   2838.0
____   701  B  33903  7700                      Y    N    N   3339   2838.0
____   702  B  33903  7700                      Y    N    N   3339   2838.0
____   7EF  B  33903  7700                      Y    N    N   3339   2838.0
____   7F0  A  33903  7700                      Y    N    N      0      0.0
____   7FD  A  33903  7700                      Y    N    N      0      0.0
____   7FE  A  33903  7700                      Y    N    N      0      0.0
____   7FF  A  33903  7700                      Y    N    N      0      0.0
____   800  B  33903  7800                      Y    N    N  32760  27844.7
____   F11  B  33903  7F00                      Y    N    N   3339   2838.0
____   F12  B  33903  7F00                      Y    N    N   3339   2838.0
____   F13  B  33903  7F00                      Y    N    N   3339   2838.0
____   F14  B  33903  7F00                      Y    N    N   3339   2838.0
____   F15  B  33903  7F00                      Y    N    N   3339   2838.0
____   F16  B  33903  7F00                      Y    N    N   3339   2838.0
____   F17  B  33903  7F00                      Y    N    N   3339   2838.0
```

Figure 8-25. *Functional Device Selection panel for V2Xf subsystems (SIBCA20)*

On this panel you can:

- Insert additional functional device definitions
- Replicate lines for the purpose defining new functional devices

- Select SCSI devices to be initialized with volsers and host device numbers (only on non-V2Xf subsystems)
- Select functional device definitions to be updated
- Delete functional device definitions

In addition:

- Fast Path Replicate lets you generate new definition lines and then update them—bypassing the REPLICATE FUNCTIONAL DEVICE panel.
- The sort command (see next page) lets you reorder lines on the panel in the sequence that is most useful to you.

The data in the columns on this panel reflect the current functional device characteristics and are for display purposes only.

Column Headings

Tot Vcyl The total number of virtual cylinders that can be defined on this SVA subsystem.

Config Vcyl The total number of configured virtual cylinders that have been defined on this SVA subsystem.

Unconfig Vcyl The total number of unconfigured virtual cylinders that remain available to be defined on this SVA subsystem.

FDID The hexadecimal identifier of the functional device (0-3FF).

P/T The partition with which the device is associated (P=Production, T=Test). Appears only on non-V2Xf subsystems.

B/A The PAV type of the device (B=Base, A=Alias). Appears on V2Xf subsystems only.

Device Type The type of DASD device the functional device emulates.

SSID The subsystem identifier for the emulated 3990 controller with which the functional device is associated.

Note: The host information in the following three columns does not appear if device mapping is turned off.

Volser The volume serial number for the device.

Unit The host device number.

Status The host device status: ONLINE, OFFLINE, or MOUNTED.

CKD R/W Indicates whether the CKD functional device is write-protected.

SCSI R/W Indicates whether the SCSI functional device is write-protected.

SVAA Comm (SVAA Communications) **Y** in this field indicates the device is designated an ECAM device.

Cyls The number of cylinders for this functional device. (Set to zero for PAV Alias devices.)

Capacity The functional capacity, in megabytes, of this type of functional device (the device type being emulated). (Set to zero for PAV Alias devices.)

Capacity The functional capacity, in megabytes, of this type of functional device (the device type being emulated).

Using Line Commands

On some SVAA panels that display tables, you can enter commands called line commands to the left of any line (row) of data. On the FUNCTIONAL DEVICE SELECTION panel you can use the following line commands:

I*nnn* Insert (add) one or more functional device definitions
R*nnn* Replicate the characteristics of a functional device
N*nnn* Select one or more SCSI devices to be initialized with a volser and host device number
S*nnn* Select one or more functional device definitions to be updated
D*nnn* Delete one or more functional device definitions

nnn, which is optional, ranges from 1 to 999 and indicates the number of consecutive definitions to be inserted, replicated, initialized, updated, or deleted (default is 1). The total number of device definitions cannot exceed 4096 (1024 on subsystems earlier than the V2X). This number is lower if any 3390-9 devices are defined.

Using the Sort Command

You can control the order in which functional devices appear on this panel by entering a sort command in the command field. You can sort the functional devices in either ascending order (the **sorta** command) or descending order (the **sortd** command) by any one of the following parameters (column headings):

fdid, volser, unit, ba, pt, ssid, devtype, cyls, bytes

You can use either uppercase or lowercase.

Examples:

Type **sorta fdid** and press **Enter** to display the functional devices in ascending order by FDID.

Type **SORTD UNIT** and press **Enter** to display the functional devices in descending order by host device number.

Using Fast Path Replicate

Fast Path Replicate enables you to generate additional functional device definitions based upon an existing definition.

To add device definitions with Fast Path Replicate:

1. Type **YES** in the **Fast Path Replicate** field (near the top of the panel).
2. Tab to a functional device definition line to be replicated and enter **R***nnn* at the left end of the line. *nnn* (optional) represents the number of times to replicate the definition (maximum of 999). The default value for *nnn* is 1.

   The total number of device definitions cannot exceed 4096 (1024 on subsystems earlier than V2X). (Fewer devices can be defined if any 3390-9 devices are included.) If you specify an *nnn* value that is greater than the number of undefined devices, SVAA generates as many definitions as possible.

For example, to define three functional devices with the characteristics of **ENGV12**:

```
                Device      -------Host--------- CKD SCSI SVAA --Functional--
      FDID P/T -Type- SSID Volser Unit -Status- R/W  R/W Comm -Cyls Capacity
R3__    1A  P  33901  C001 ENGV12 C000 MOUNTED   Y    N    N   1113    946.0
```

Note: You can enter **R***nnn* on additional lines for more replications before proceeding to Step 3.

If you replicate a PAV Alias device, the PAVBASE value (the Base device to which the Alias is related) is also replicated. This is a convenient way of defining multiple additional PAV Aliases to an existing Base device.

3. Issue the **submit** command.

   The panel displays the added (replicated) functional device definition lines. The added lines are identical except for the unit numbers; SVAA assigns the next-available unit numbers automatically.

```
                Device      -------Host--------- CKD SCSI SVAA --Functional--
      FDID P/T -Type- SSID Volser Unit -Status- R/W  R/W Comm -Cyls Capacity
____    1A  P  33901  C001 ENGV12 C000 MOUNTED   Y    N    N   1113    946.0
____    1B  P  33901  C001        C001 MOUNTED   Y    N    N   1113    946.0
____    1C  P  33901  C001        C002 MOUNTED   Y    N    N   1113    946.0
____    1D  P  33901  C001        C003 MOUNTED   Y    N    N   1113    946.0
```

To replicate another functional device, repeat steps 1 to 3.

To change the characteristics of the added functional devices, tab to the first new device definition and, in the space at the left, type **S***nnn* (where *nnn* is the number of consecutive definitions you want to update). When you press **Enter**, the UPDATE FUNCTIONAL DEVICE panel appears with the device characteristics of the first line you selected (see page 8-57).

Technique for Quick PAV Setup of a VCU

To quickly setup an entire VCU of Base and Alias devices, you might want to use the following technique, which assumes that the VCU does not contain any previously defined devices:

1. Define one Base device using the lowest FDID in the VCU (e.g., 000 100, 200...)
2. Fast Path Replicate the Base device to create as many Base devices as are needed
3. Define one Alias device using the lowest unused FDID in the VCU and relate it to any Base device in the VCU
4. Fast Path Replicate the Alias device to fill out the remainder of the VCU with Alias devices
5. In a Static PAV environment, use the ISPF panels or the ALTER DEVICE command to reassign the Alias to Base relationships as desired

This technique is especially useful in a Dynamic PAV environment since the WorkLoad Manager (WLM) will adjust these initial PAV relationships as needed; the last step is therefore not required in a Dynamic PAV environment.

Example:

VCU 4 is completely undefined. You want to setup the VCU with 64 Base devices and 192 Aliases. You first define FDID 400 as a Base, then use Fast Path Replicate and a value of R63 on the line command to create the other 63 Base devices. You next define FDID 440 as an Alias device that is related to FDID 400, then use Fast Path Replicate and a value of R191 on the line command to create the other 191 Alias devices. If a Static PAV environment is in effect, you reassign the Alias to Base relationships as desired using the ISPF panels or the ALTER DEVICE command, or just let WLM reassign Aliases as needed if a Dynamic PAV environment is in effect.

Procedure for Functional Device Selection

Type line commands at the left end of as many lines as you wish and press **Enter**. The next panel to appear is determined by the line commands you entered:

I Displays the INSERT FUNCTIONAL DEVICE panel (see 8-40).

R Displays the REPLICATE FUNCTIONAL DEVICE panel (see 8-48).

N Displays the INITIALIZE FUNCTIONAL DEVICE panel (see 8-54).

S Displays the UPDATE FUNCTIONAL DEVICE panel (see 8-56).

D Displays the DELETE FUNCTIONAL DEVICE panel (see 8-61).

Requests are processed in the sequence in which the devices appear on the FUNCTIONAL DEVICE SELECTION panel.

Panel Command Options

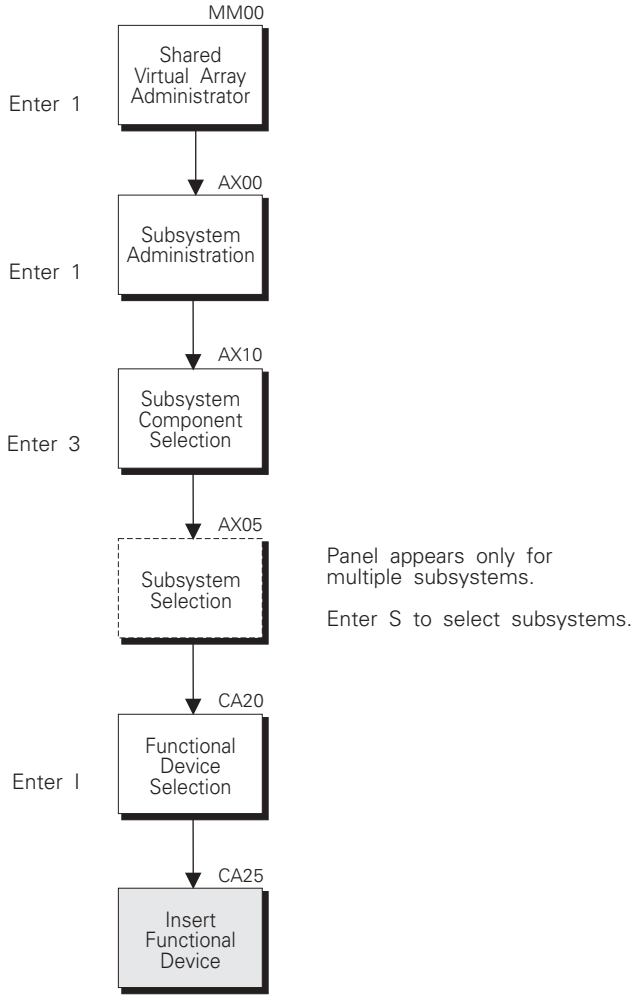
To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

cancel Cancels the entries you have made, terminates functional device configuration, and returns to the previous panel (SUBSYSTEM SELECTION or SUBSYSTEM COMPONENT SELECTION).

Inserting a Functional Device

The INSERT FUNCTIONAL DEVICE panel appears when you enter the Insert (I) command on one or more lines on the FUNCTIONAL DEVICE SELECTION panel.

To display the INSERT FUNCTIONAL DEVICE panel:


MM00
Shared Virtual Array Administrator
Enter 1
AX00
Subsystem Administration
Enter 1
AX10
Subsystem Component Selection
Enter 3
AX05
Subsystem Selection
Panel appears only for multiple subsystems.
Enter S to select subsystems.
CA20
Functional Device Selection
Enter I
CA25
Insert Functional Device
C11006

Examples of the INSERT FUNCTIONAL DEVICE panel:

```
SIBCA25               *** INSERT FUNCTIONAL DEVICE ***
COMMAND===>

                           Subsystem Name: TESTV2X

 Volume ID ===> ______     Operating System: VM          Subsystem ID:
 Unit Address ===> ____    Online:                       Mounted:
 SVAA Communication:       Device Type ===> ______       Domain Target -LUN-
                                                           ___  _____ _____

 Functional Device ID (FDID) ===> ____     Name ===> ________
                                           Partition (T=Test/P=Prod.)    : P

 ------------- Capacity --------------    --- Device Status (Y=Yes/N=No) ---
       Functional  --Phys. Used(MB)--      Y CKD Enabled      N SCSI Enabled
 Cyls     (MB)      Shared     Total       Y CKD R/W          N SCSI R/W
 -----  ----------  --------  --------     Y Cache Enabled    N Primary
     0         0.0                        Y DASD Fast Write  N Secondary
                                          N Privileged ECAM  N Data Bridge
                                                             N Status Bridge
                                          N Request Dev Init
```

Figure 8-26. *Insert Functional Device panel for non-V2Xf subsytems (SIBCA25)*

```
SIBCA25               *** INSERT FUNCTIONAL DEVICE ***
COMMAND===>

                           Subsystem Name: TESTV2X

 Volume ID ===> ______     Operating System: MVS         Subsystem ID:
 Unit Address ===> ____    Online:                       Mounted:
 SVAA Communication:       Device Type ===> ______       Domain Target -LUN-
                                                           ___  _____ _____

 Functional Device ID (FDID) ===> ____     Name ===> ________
                                           Partition (T=Test/P=Prod.)    : P

 ------------- Capacity --------------    --- Device Status (Y=Yes/N=No) ---
       Functional  --Phys. Used(MB)--      Y CKD Enabled      N SCSI Enabled
 Cyls     (MB)      Shared     Total       Y CKD R/W          N SCSI R/W
 -----  ----------  --------  --------     Y Cache Enabled    N Primary
 0____         0.0                        Y DASD Fast Write  N Secondary
                                          N Privileged ECAM  N Data Bridge
                                                             N Status Bridge
                                          N Request Dev Init
```

Figure 8-27. *V2X and V2X2 subsystems with FlexVolume support (SIBCA25)*

```
SIBCA25               *** INSERT FUNCTIONAL DEVICE ***
COMMAND===>

                            Subsystem Name: PRODV2XF

 Volume ID ===> ______      Operating System: VM          Subsystem ID:
 Unit Address ===> ____     Online:                       Mounted:
 SVAA Communication:        Device Type ===> ______


 Functional Device ID (FDID)  ===> ____     Name ===> ________
 PAV Base Device ID (PAVBASE) ===> ____

 ------------- Capacity --------------    --- Device Status (Y=Yes/N=No) ---
       Functional  --Phys. Used(MB)--      Y CKD Enabled      N SCSI Enabled
 Cyls     (MB)      Shared     Total       Y CKD R/W          N SCSI R/W
 -----  ----------  --------  --------     Y Cache Enabled    N Primary
 0____         0.0                        Y DASD Fast Write  N Secondary
                                          N Privileged ECAM  N Data Bridge
                                                             N Status Bridge
```

Figure 8-28. *Insert Functional Device panel for V2Xf subsystems (SIBCA25)*

These examples show how the fields are initialized.

All fields are either blank or set to defaults.

Display-only Fields

Subsystem Name The name assigned to the SVA subsystem.

Operating System The host operating system under which SVAA is running.

Subsystem ID The subsystem identifier (SSID) for the emulated 3990 controller with which the functional device is associated.

Online Indicates whether the functional volume has been varied online to the host operating system.

Mounted Indicates whether the functional device is mounted to the host operating system.

SVAA Communication **YES** in this field indicates the device has been designated an ECAM device (with the SET ECAMDEVICE subcommand); that is, it is used to communicate requests to the SVA subsystem.

Partition The partition with which the device is associated. Appears only on non-V2Xf subsystems

Cyls The number of cylinders for this functional device. (Set to zero for PAV Alias devices.). This is a display-only field on V960 and earlier subsystems.

Functional (MB) The device's functional capacity (in megabytes). (Set to zero for PAV Alias devices.)

Phys. Used(MB) Shared The amount of physical space (in megabytes) that is shared among functional devices as a result of a SnapShot command. (N/A indicates that SnapShot microcode is not installed on this subsystem.)

Phys. Used(MB) Total The physical space on the device (in megabytes) that is occupied by data after compression and compaction.

Primary Indicates if the device is a PPRC Primary.

Secondary Indicates if the device is a PPRC Secondary.

Procedure

1. Tab to and update the following fields as required:

   Volume ID Optional. The volume serial number to be assigned to a SCSI device (6 alphanumeric characters). (Device Type must be SCSIA or SCSIB.)

   Unit Address Optional. The host device number to be assigned to a SCSI device (1 to 4 hexadecimal digits). (Device Type must be SCSIA or SCSIB.)

   Note: If you enter a Volume ID and a Unit Address, you must enter **Y** for Request Device Initialization (lower right corner of panel) to initialize the SCSI device.

   Device Type Required. Valid types are: 3380J, 3380K, 3380KE, 33901, 33902, 33903, 33909, SCSIA, SCSIB

   Domain Target LUN Required on non-V2Xf subsystems only if you will need to access this device from an Open Systems platform. The SCSI address of the inserted device is initially displayed and must be changed. Domain and Target are each 1 to 2 digits; LUN is 1 to 3 digits.

   SCSI Blksize On non-V2Xf subsystems, this field appears and displays the default logical block size (512) when you enter a Device Type of SCSIA or SCSIB. Valid block sizes are: 512, 2048, 4096, 8192, and 16384.

   Functional Device ID (FDID) Required. Enter 1 to 2 hexadecimal digits. Duplicate FDIDs are rejected.

   Name Optional. Device name does not have to be unique. Enter 1 to 8 characters in the set: a to z, A to Z, 0 to 9, $, @, _, #, -, +, &, ., /, or set the name to blanks.

   PAVBASE Required for an Alias. Specify the FDID of the Base device to which this Alias is related. Appears only on V2Xf subsystems.

   Cyls The number of cylinders for this functional device. This field is modifiable only on V2X, V2X2, and V2Xf subsystems. This field must be zero when defining PAV Aliases or defining functional devices with the normal (default) number of cylinders for the specified device type. Once microcode support for Large Volumes is available, Large Volumes must be defined with a 33909 device type and 32760 cylinders. If defining a FlexVolume, the device type cannot be 33901 or 33902; the permissible number of cylinders depends on the specified device type as follows:

- If 3380J, Cyls must be from 1-885 cylinders
- If 3380KE, Cyls must be from 886-1770 cylinders
- If 3380K, Cyls must be from 1771-2655 cylinders
- If 33903, Cyls must be from 1-3339 cylinders
- If 33909, Cyls must be from 3340-32760 cylinders

CKD Enabled Enter either **Y** or **N**.

Y Enables host access to the CKD functional device.
N Disables host access to the CKD functional device.

Default: **Y**

SCSI Enabled Enter either **Y** or **N**.

Y Enables host access to the SCSI functional device.
N Disables host access to the SCSI functional device.

Default: **N**

CKD R/W Enter either **Y** or **N**.

Y Enables host write access to the CKD device.
N Disables host write access to the CKD device.

Default: **Y**

SCSI R/W Enter either **Y** or **N**.

Y Enables host write access to the SCSI device.
N Disables host write access to the SCSI device.

Default: **N**

Cache Enabled Enter either **Y** or **N**.

Y Enables caching.
N Disables caching.

Default: **Y**

When cache is disabled, caching is still turned on, but the caching algorithm is changed. In a write operation, tracks are queued for immediate destaging to the arrays, instead of being held in cache. In a read operation, a track is staged to cache and then queued for deallocation from cache as soon as the read is complete.

DASD Fast Write This option only provides 3990 compatibility; its setting (**Y** or **N**) has no effect on SVA operations.

Default: **Y**

Privileged ECAM You must designate at least one functional device as a privileged ECAM device—that is, as an eligible destination for Category 1-restricted messages. However, you should limit the number of such devices.

Enter either **Y** or **N**.

Y Makes the device *eligible* for Category 1-restricted messages.

N Makes the device *ineligible* for Category 1-restricted messages.

Default: **N**

Note: For **Y** to take effect, the **SVAA Communications** field on this panel must also be set to **YES**. (This is done by issuing a SET ECAMDEVICE subcommand for this device; see page 9-128 for details.)

Note: The use of privileged ECAM devices is normally limited to specific individuals—such as the Storage Administrator, a Systems Programmer, or an Operator. For security reasons, do not specify **Y** for devices that can be accessed—either as attached devices or in write mode as full-pack minidisks—by all users.

Data Bridge Enter either **Y** or **N**.

Y Defines device as a Data Bridge.
N Does not define device as a Data Bridge.

Default: **N**

Data Bridge devices must be defined using a 33909 device type.

Status Bridge Enter either **Y** or **N**.

Y Defines device as a Status Bridge.
N Does not define device as a Status Bridge.

Default: **N**

Status Bridge devices must be defined using a 33903 device type.

Request Dev Init This field applies only on non-V2Xf subsystems and applies only to SCSI devices. You can initialize a SCSI device with a volser and host device number at the time you define it.

Y Requests device initialization. **Note:** If you enter **Y**, you must also complete the Volume ID and Unit Address fields on this panel.
N Skips device initialization. If you have completed the Volume ID and Unit Address fields, entering **N** causes an error.

Default: **N**

2. Issue the **submit** command.

   Result: The panel is redisplayed in update mode. The following fields are filled in on the basis of the information you have entered:

   - Subsystem ID
   - Cyls
   - Functional (MB)
   - Phys. Used(MB) Shared
   - Phys. Used(MB) Total

Note: A newly defined device may have an operating system status of BOXED. To gain access to a boxed device, you may have to vary it offline and then online

again. (The VM BOXED status can also affect OS/390 operations when OS/390 is running under VM.)

Panel Command Options

To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

next Displays the next INSERT FUNCTIONAL DEVICE panel—if you inserted multiple devices.

previous Displays the previous INSERT FUNCTIONAL DEVICE panel—unless the first device you inserted is displayed.

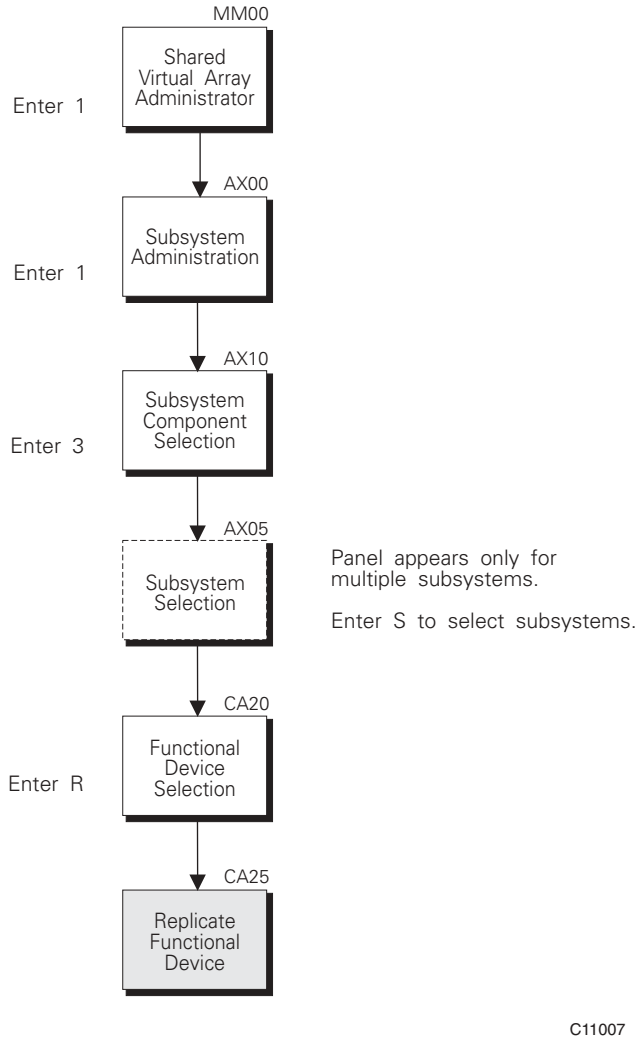
end Cancels the entries you have made and displays the next INSERT FUNCTIONAL DEVICE panel or, if this is the last device inserted, returns to the FUNCTIONAL DEVICE SELECTION panel.

cancel Cancels the entries you have made, skips processing any additional INSERT FUNCTIONAL DEVICE panels, and returns to the FUNCTIONAL DEVICE SELECTION panel.

Replicating a Functional Device

The REPLICATE FUNCTIONAL DEVICE panel appears when you enter the Replicate (R) command on one or more lines on the FUNCTIONAL DEVICE SELECTION panel.

To display the REPLICATE FUNCTIONAL DEVICE panel:



Examples of the REPLICATE FUNCTIONAL DEVICE panel:

```
SIBCA25               *** REPLICATE FUNCTIONAL DEVICE ***
COMMAND===>

                            Subsystem Name: TESTV2X

 Volume ID ===> ______      Operating System: VM          Subsystem ID:
 Unit Address ===> ____     Online:                       Mounted: NO
 SVAA Communication: NO     Device Type  ===> SCSIA_      Domain Target -LUN-
                            SCSI Blksize ===> 512__          7__  3____ 0____

 Functional Device ID (FDID) ===> 21__     Name ===> DEV00021
                                           Partition (T=Test/P=Prod.)    : P

 ------------- Capacity --------------    --- Device Status (Y=Yes/N=No) ---
       Functional  --Phys. Used(MB)--      Y CKD Enabled      Y SCSI Enabled
 Cyls     (MB)      Shared     Total       Y CKD R/W          Y SCSI R/W
 -----  ----------  --------  --------     Y Cache Enabled    N Primary
  3339      2838.0                        Y DASD Fast Write  N Secondary
                                           N Privileged ECAM  N Data Bridge
                                                              N Status Bridge
                                           N Request Dev Init
```

Figure 8-29. *Replicate Functional Device panel for non-V2Xf subsystems (SIBCA25)*

This example shows how the fields are initialized when a SCSI device has been selected for replication.

The following example shows how fields are initialized when a Base device on a V2Xf has been selected for replication.

```
SIBCA25               *** REPLICATE FUNCTIONAL DEVICE ***
COMMAND===>

                            Subsystem Name: PRODV2XF

 Volume ID :                Operating System: VM          Subsystem ID:
 Unit Address :             Online:                       Mounted:
 SVAA Communication:        Device Type  ===> 33903_


 Functional Device ID (FDID)  ===> 700_     Name ===> ABC_____
 PAV Base Device ID (PAVBASE) :

 ------------- Capacity --------------    --- Device Status (Y=Yes/N=No) ---
       Functional  --Phys. Used(MB)--      Y CKD Enabled      N SCSI Enabled
 Cyls     (MB)      Shared     Total       Y CKD R/W          N SCSI R/W
 -----  ----------  --------  --------     Y Cache Enabled    N Primary
  3339      2838.0                        Y DASD Fast Write  N Secondary
                                           Y Privileged ECAM  N Data Bridge
                                                              N Status Bridge
```

Figure 8-30. *Replicate Functional Device panel for Base on V2Xf subsystem (SIBCA25)*

The next example shows how fields are initialized if an Alias device on a V2Xf has been selected for replication.

```
SIBCA25              *** REPLICATE FUNCTIONAL DEVICE ***
COMMAND===>

                            Subsystem Name: PRODV2XF

 Volume ID :                Operating System: VM          Subsystem ID:
 Unit Address :             Online:                       Mounted:
 SVAA Communication:        Device Type  ===> 33903_


 Functional Device ID (FDID)  ===> 7F0_     Name ===> _______
 PAV Base Device ID (PAVBASE) :    700

 ------------ Capacity --------------    --- Device Status (Y=Yes/N=No) ---
        Functional  --Phys. Used(MB)--     Y CKD Enabled      N SCSI Enabled
  Cyls     (MB)      Shared     Total      Y CKD R/W          N SCSI R/W
 -----  ----------  --------  --------     Y Cache Enabled    N Primary
  3339      2838.0                        Y DASD Fast Write  N Secondary
                                          Y Privileged ECAM  N Data Bridge
                                                             N Status Bridge
```

Figure 8-31. *Replicate Functional Device panel for Alias on V2Xf subsystem*

Display-only Fields

Subsystem Name The name assigned to the SVA subsystem.

Operating System The host operating system under which SVAA is running.

Subsystem ID The subsystem identifier (SSID) for the emulated 3990 controller with which the functional device is associated.

Online Indicates whether the functional volume has been varied online to the host operating system.

Mounted Indicates whether the functional device is mounted to the host operating system.

SVAA Communication **YES** in this field indicates the device has been designated an ECAM device (with the SET ECAMDEVICE subcommand); that is, it is used to communicate requests to the SVA subsystem.

Partition The partition with which the device is associated. Appears only on non-V2Xf subsystems.

Cyls The number of cylinders for this functional device. (Set to zero for PAV Alias devices.)

Functional (MB) The device's functional capacity (in megabytes). (Set to zero for PAV Alias devices.)

Phys. Used(MB) Shared The amount of physical space (in megabytes) that is shared among functional devices as a result of a SnapShot command. (N/A indicates that SnapShot microcode is not installed on this subsystem.)

Phys. Used(MB) Total The physical space on the device (in megabytes) that is occupied by data after compression and compaction.

Primary Indicates if the device is a PPRC Primary.

Secondary Indicates if the device is a PPRC Secondary.

Procedure

1. Tab to and update the following fields as required:

Volume ID Optional. The volume serial number to be assigned to a SCSI device (6 alphanumeric characters). (Device Type must be SCSIA or SCSIB.)

Unit Address Optional. The host device number to be assigned to a SCSI device (1 to 4 hexadecimal digits). (Device Type must be SCSIA or SCSIB.)

Note: If you enter a Volume ID and a Unit Address, you must enter **Y** for Request Device Initialization (lower right corner of panel) to initialize the SCSI device.

Device Type Valid SCSI device types are SCSIA and SCSIB.

Domain Target LUN Required on non-V2Xf subsystems only from an Open Systems platform. The SCSI address of the replicated device is initially displayed and must be changed. Domain and Target are each 1 to 2 digits; LUN is 1 to 3 digits.

SCSI Blksize Optional. The logical block size of the replicated device is initially displayed. Appears only on non-V2Xf subsystems. Valid block sizes are: 512, 2048, 4096, 8192, and 16384.

Functional Device ID (FDID)
Required. Enter 1 to 2 hexadecimal digits. Duplicate FDIDs are rejected.

Name Optional. Device name does not have to be unique. Enter 1 to 8 characters in the set: a to z, A to Z, 0 to 9, $, @, _, #, -, +, &, ., /, or set the name to blanks. (Cannot be changed for a PAV Alias.)

PAVBASE Required for an Alias. Specify the FDID of the Base device to which this Alias is related. Appears only on V2Xf subsystems.

CKD Enabled Enter either **Y** or **N**. (Cannot be changed for a PAV Alias.)

Y Enables host access to the CKD functional device.
N Disables host access to the CKD functional device.

SCSI Enabled Enter either **Y** or **N**.

Y Enables host access to the SCSI functional device.
N Disables host access to the SCSI functional device.

CKD R/W Enter either **Y** or **N**. (Cannot be changed for a PAV Alias.)

Y Enables host write access to the CKD device.
N Disables host write access to the CKD device.

SCSI R/W Enter either **Y** or **N**.

Y Enables host write access to the SCSI device.
N Disables host write access to the SCSI device.

Cache Enabled Enter either **Y** or **N**. (Cannot be changed for a PAV Alias.)

Y Enables caching.
N Disables caching.

When cache is disabled, caching is still turned on, but the caching algorithm is changed. In a write operation, tracks are queued for immediate destaging to the arrays, instead of being held in cache. In a read operation, a track is staged to cache and then queued for deallocation from cache as soon as the read is complete.

DASD Fast Write This option only provides 3990 compatibility; its setting (**Y** or **N**) has no effect on SVA operations. (Cannot be changed for a PAV Alias.)

Privileged ECAM You must designate at least one functional device as a privileged ECAM device—that is, as an eligible destination for Category 1-restricted messages. However, you should limit the number of such devices. (Cannot be changed for a PAV Alias.)

Enter either **Y** or **N**.

Y Makes the device *eligible* for Category 1-restricted messages.
N Makes the device *ineligible* for Category 1-restricted messages.

Note: For **Y** to take effect, the **SVAA Communications** field on this panel must also be set to **YES**. (This is done by issuing a SET ECAMDEVICE subcommand for this device; see page 9-128 for details.)

Note: The use of privileged ECAM devices is normally limited to specific individuals—such as the Storage Administrator, a Systems Programmer, or an Operator. For security reasons, do not specify **Y** for devices that can be accessed—either as attached devices or in write mode as full-pack minidisks—by all users.

Data Bridge Enter either **Y** or **N**.

Y Defines device as a Data Bridge.
N Does not define device as a Data Bridge.

Default: **N**

Data Bridge devices must be defined using a 33909 device type.

Status Bridge Enter either **Y** or **N**.

Y Defines device as a Status Bridge.
N Does not define device as a Status Bridge.

Default: **N**

Status Bridge devices must be defined using a 33903 device type.

Request Dev Init This field appears only on non-V2Xf and applies only to SCSI devices. You can initialize a SCSI device with a volser and host device number at the time you define it.

- **Y** Requests device initialization. **Note:** If you enter **Y**, you must also complete the Volume ID and Unit Address fields on this panel.
- **N** Skips device initialization. If you have completed the Volume ID and Unit Address fields, entering **N** causes an error.

2. Issue the **submit** command.

   Result: The following fields are filled in on the basis of the information you have entered:

   - Subsystem ID
   - Phys. Used(MB) Shared
   - Phys. Used(MB) Total

Panel Command Options

To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

next Displays the next REPLICATE FUNCTIONAL DEVICE panel—if you replicated a device multiple times.

previous Displays the previous REPLICATE FUNCTIONAL DEVICE panel—unless the first replicate panel is displayed.

end Cancels the entries you have made and displays the next REPLICATE FUNCTIONAL DEVICE panel (if more panels remain) or returns to the FUNCTIONAL DEVICE SELECTION panel.

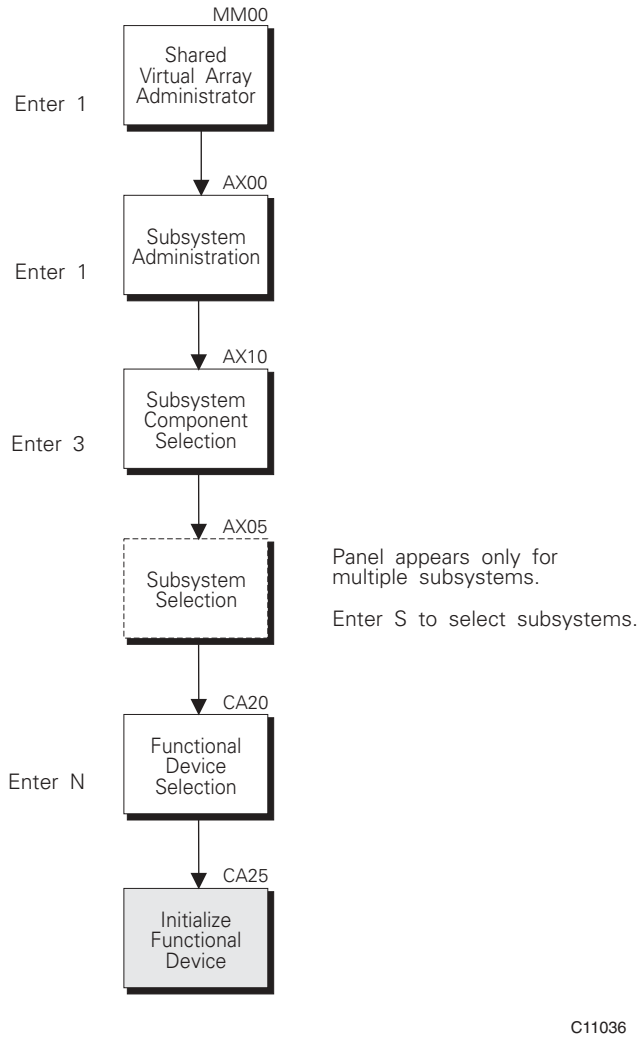
cancel Cancels the entries you have made, skips processing any other REPLICATE FUNCTIONAL DEVICE panels, and returns to the FUNCTIONAL DEVICE SELECTION panel.

Initializing a Functional Device

The INITIALIZE FUNCTIONAL DEVICE panel appears when you enter the Initialize (N) command on one or more lines on the FUNCTIONAL DEVICE SELECTION panel. This panel enables you to initialize a SCSI functional device with a volume serial number and a host device number.

The following example of the INITIALIZE FUNCTIONAL DEVICE panel shows how fields are initialized.

To display the INITIALIZE FUNCTIONAL DEVICE panel:



Example of the INITIALIZE FUNCTIONAL DEVICE panel:

```
SIBCA25              *** INITIALIZE FUNCTIONAL DEVICE ***
COMMAND===>

                            Subsystem Name: TEST

 Volume ID ===> ______      Operating System: VM          Subsystem ID: C004
 Unit Address ===> ____     Online: NO                    Mounted: NO
 SVAA Communication: NO     Device Type     : SCSIA       Domain Target -LUN-
                            SCSI Blksize    :   512          6__  0____ 0____

 Functional Device ID (FDID)    : 3E0      Name    : DEV00021
                                           Partition (T=Test/P=Prod.)    : P

 ------------- Capacity --------------    --- Device Status (Y=Yes/N=No) ---
       Functional  --Phys. Used(MB)--      Y CKD Enabled      Y SCSI Enabled
  Cyls     (MB)      Shared     Total      Y CKD R/W          Y SCSI R/W
 -----  ----------  --------  --------     Y Cache Enabled    N Primary
  3339      1230.2       0.0       0.0    Y DASD Fast Write  N Secondary
                                           N Privileged ECAM  N Data Bridge
                                                              N Status Bridge
```

Figure 8-32. *Initialize Functional Device panel (SIBCA25)*

Procedure

1. Tab to and update the following two fields:

   Volume ID — Required. The volume serial number to be assigned to the SCSI device (6 alphanumeric characters).

   Unit Address — Required. The host device number to be assigned to a SCSI device (1 to 4 hexadecimal digits).

2. Issue the **submit** command.

   Result: The panel is redisplayed in update mode.

Panel Command Options

To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

next Displays the next INITIALIZE FUNCTIONAL DEVICE panel—if you selected multiple devices for initialization.

previous Displays the previous INITIALIZE FUNCTIONAL DEVICE panel—unless the first device you selected is displayed.

end Cancels the entries you have made and displays the next INITIALIZE FUNCTIONAL DEVICE panel or, if this is the last device selected, returns to the FUNCTIONAL DEVICE SELECTION panel.

cancel Cancels the entries you have made, skips processing any additional INITIALIZE FUNCTIONAL DEVICE panels, and returns to the FUNCTIONAL DEVICE SELECTION panel.

Updating a Functional Device

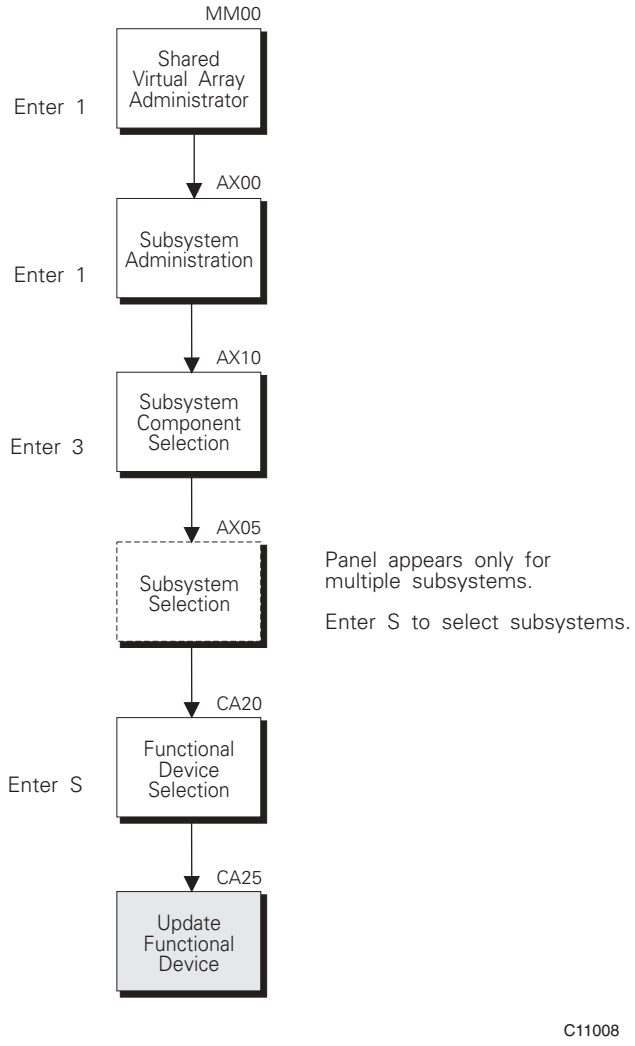
The UPDATE FUNCTIONAL DEVICE panel appears when you enter the Select (S) command on one or more lines on the FUNCTIONAL DEVICE SELECTION panel.

If you select more than one functional device for update, the panels appear in the order listed.

Notes:

1. You *cannot* update a functional device that is currently being used for privileged ECAM communications.
2. You *cannot* update a functional device that is part of a PPRC pair.
3. Question marks (?) will appear in certain fields for Bridge devices and PAV Alias devices since they are not mapped by SVAA device mapping.

To display the UPDATE FUNCTIONAL DEVICE panel:



Examples of the UPDATE FUNCTIONAL DEVICE panel:

```
SIBCA25               *** UPDATE FUNCTIONAL DEVICE ***
COMMAND===>

                            Subsystem Name: TESTV2X

 Volume ID    : SC0033      Operating System: VM          Subsystem ID: C001
 Unit Address    : 4021     Online: YES                   Mounted:
 SVAA Communication: NO     Device Type     : SCSIA       Domain Target -LUN-
                            SCSI Blksize    :   512          6__  3____ 7____

 Functional Device ID (FDID)    : 21       Name ===> _______
                                           Partition (T=Test/P=Prod.)    : P

 ------------- Capacity --------------    --- Device Status (Y=Yes/N=No) ---
       Functional  --Phys. Used(MB)--      Y CKD Enabled      Y SCSI Enabled
 Cyls     (MB)      Shared     Total      Y CKD R/W          Y SCSI R/W
 -----  ----------  --------  --------     Y Cache Enabled    N Primary
  3339      2838.0      0.0       47.3    Y DASD Fast Write  N Secondary
                                           N Privileged ECAM  N Data Bridge
                                           N Request Dev Attn N Status Bridge
```

Figure 8-33. *Update Functional Device panel for non-V2Xf subsystems (SIBCA25)*

```
SIBCA25               *** UPDATE FUNCTIONAL DEVICE ***
COMMAND===>

                            Subsystem Name: PRODV2XF

 Volume ID    : SW7700      Operating System: VM          Subsystem ID: 7700
 Unit Address    : 7700     Online: YES                   Mounted: YES
 SVAA Communication: NO     Device Type     : 33903


 Functional Device ID (FDID)    : 700      Name ===> ABC_____
 Number of Aliases              : 002      PAV Type (B=Base/A=Alias)    : B

 ------------- Capacity --------------    --- Device Status (Y=Yes/N=No) ---
       Functional  --Phys. Used(MB)--      Y CKD Enabled      N SCSI Enabled
 Cyls     (MB)      Shared     Total      Y CKD R/W          N SCSI R/W
 -----  ----------  --------  --------     Y Cache Enabled    N Primary
  3339      2838.0      0.0        0.1    Y DASD Fast Write  N Secondary
                                           Y Privileged ECAM  N Data Bridge
                                           N Request Dev Attn N Status Bridge
```

Figure 8-34. *Update Functional Device panel for Base device on V2Xf subsystems (SIBCA25)*

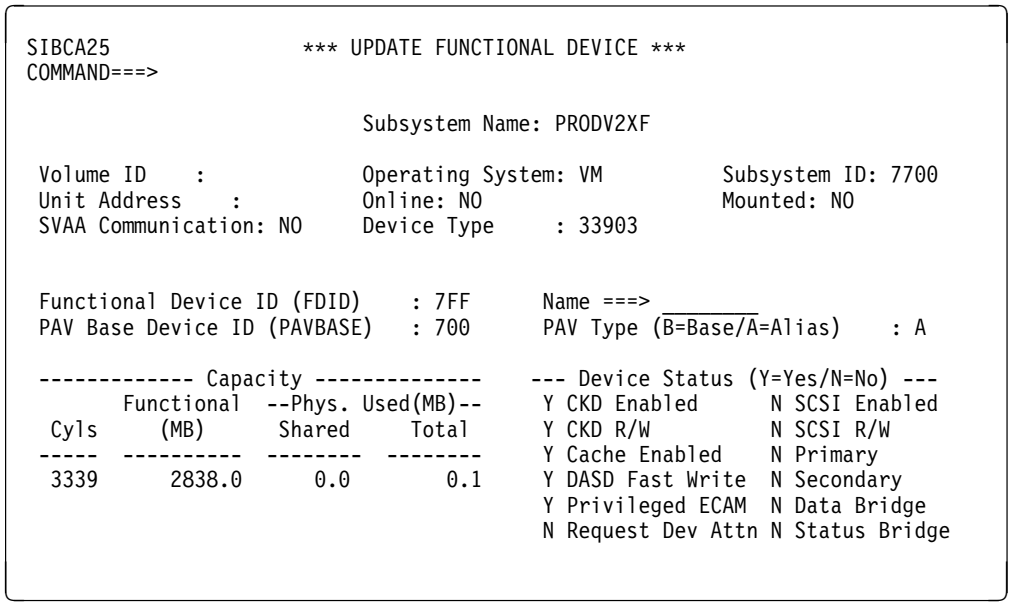


Figure 8-35. *Update Functional Device panel for Alias on V2Xf subsystems (SIBCA25)*

Display-only Fields

Subsystem Name The name assigned to the SVA subsystem.

Volume ID The volume serial number for the device. This field is blank if device mapping is turned off.

Operating System The host operating system under which SVAA is running.

Subsystem ID The subsystem identifier (SSID) for the emulated 3990 controller with which the functional device is associated.

Unit Address The host device number. This field is blank if the unit address is not defined to the host operating system or if device mapping is turned off.

Online Indicates whether the functional volume has been varied online to the host operating system.

Mounted Indicates whether the functional device is mounted to the host operating system.

SVAA Communication **YES** in this field indicates this has been designated an ECAM device (with the SET ECAMDEVICE subcommand).

Device Type The type of DASD device the functional device emulates.

Domain Target LUN The SCSI address of the device, if applicable. Appears only on non-V2Xf subsystems.

SCSI Blksize The logical block size for the SCSI device, if applicable. Appears only on non-V2Xf subsystems.

Functional Device ID (FDID)
The hexadecimal identifier (FDID) for the device.

Number of Aliases The number of Aliases for this Base. Appears only on V2Xf subsystems.

PAVBASE The FDID of the Base device to which this Alias is related. Appears only on V2Xf subsystems.

Partition The partition with which the device is associated. Appears only on V2Xf subsystems.

Cyls The number of cylinders for this functional device. (Set to zero for PAV Alias devices.)

Functional (MB) The device's functional capacity (in megabytes). (Set to zero for PAV Alias devices.)

Phys. Used(MB), Shared The amount of physical space (in megabytes) that is shared among functional devices as a result of a SnapShot command. (N/A indicates that SnapShot microcode is not installed on this subsystem.)

Phys. Used(MB), Total The physical space on the device (in megabytes) that is occupied by data after compression and compaction.

Primary Indicates if the device is a PPRC Primary.

Secondary Indicates if the device is a PPRC Secondary.

Procedure

1. Tab to and update the following fields as required.

   Name Optional. The device name does not have to be unique. Enter 1 to 8 characters in the set: a to z, A to Z, 0 to 9, $, @, _, #, -, +, &, ., /, or set the name to blanks. (Cannot be changed for a PAV Alias.)

   CKD Enabled Enter either **Y** or **N**. (Cannot be changed for a PAV Alias.)

   Y Enables host access to the CKD functional device.
   N Disables host access to the CKD functional device.

   SCSI Enabled Enter either **Y** or **N**.

   Y Enables host access to the SCSI functional device.
   N Disables host access to the SCSI functional device.

   CKD R/W Enter either **Y** or **N**. (Cannot be changed for a PAV Alias.)

   Y Enables host write access to the CKDdevice.
   N Disables host write access to the CKD device.

   SCSI R/W Enter either **Y** or **N**.

   Y Enables host write access to the SCSI device.
   N Disables host write access to the SCSI device.

   Cache Enabled Enter either **Y** or **N**. (Cannot be changed for a PAV Alias.)

   Y Enables caching.
   N Disables caching.

   When cache is disabled, caching is still turned on, but the caching algorithm is changed. In a write operation, tracks are queued for immediate destaging to the arrays, instead of being held in cache. In a read operation, a

track is staged to cache and then queued for deallocation from cache as soon as the read is complete.

DASD Fast Write This option only provides 3990 compatibility; its setting (**Y** or **N**) has no effect on SVA operations. (Cannot be changed for a PAV Alias.)

Privileged ECAM You must designate at least one functional device as a privileged ECAM device—that is, as an eligible destination for Category 1-restricted messages. However, you should limit the number of such devices.

Enter either **Y** or **N**. (Cannot be changed for a PAV Alias.)

Y Makes the device *eligible* for Category 1-restricted messages.
N Makes the device *ineligible* for Category 1-restricted messages.

Note: For **Y** to take effect, the **SVAA Communications** field on this panel must also be set to **YES**. (This is done by issuing a SET ECAMDEVICE subcommand for this device; see page 9-128 for details.)

Note: The use of privileged ECAM devices is normally limited to specific individuals—such as the Storage Administrator, a Systems Programmer, or an Operator. For security reasons, do not specify **Y** for devices that can be accessed—either as attached devices or in write mode as full-pack minidisks—by all users.

Data Bridge Enter either **Y** or **N**.

Y Defines device as a Data Bridge.
N Does not define device as a Data Bridge.

Default: **N**

Data Bridge devices must be defined using a 33909 device type.

Request Dev Attn Enter either **Y** or **N**.

Y Enables the request.
N Disables the request.

If **Y**, the **Enabled** field must also be set to **Y**.

When device attention is requested, a state-change interrupt is sent to all interfaces associated with a path group for that device. This command may also be used to free a hang condition in the host operating system.

Status Bridge Enter either **Y** or **N**.

Y Defines device as a Status Bridge.
N Does not define device as a Status Bridge.

Default: **N**

Status Bridge devices must be defined using a 33903 device type.

2. Issue the **submit** command.

Result: The functional device is updated and the panel displays the data you have entered.

Panel Command Options

To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

next Displays the next UPDATE FUNCTIONAL DEVICE panel—if you selected multiple devices.

previous Displays the previous UPDATE FUNCTIONAL DEVICE panel—unless the first update panel is displayed.

end Cancels the entries you have made and displays the next UPDATE FUNCTIONAL DEVICE panel (if more panels remain) or returns to the FUNCTIONAL DEVICE SELECTION panel.

cancel Cancels the entries you have made, skips processing any other UPDATE FUNCTIONAL DEVICE panels, and returns to the FUNCTIONAL DEVICE SELECTION panel.

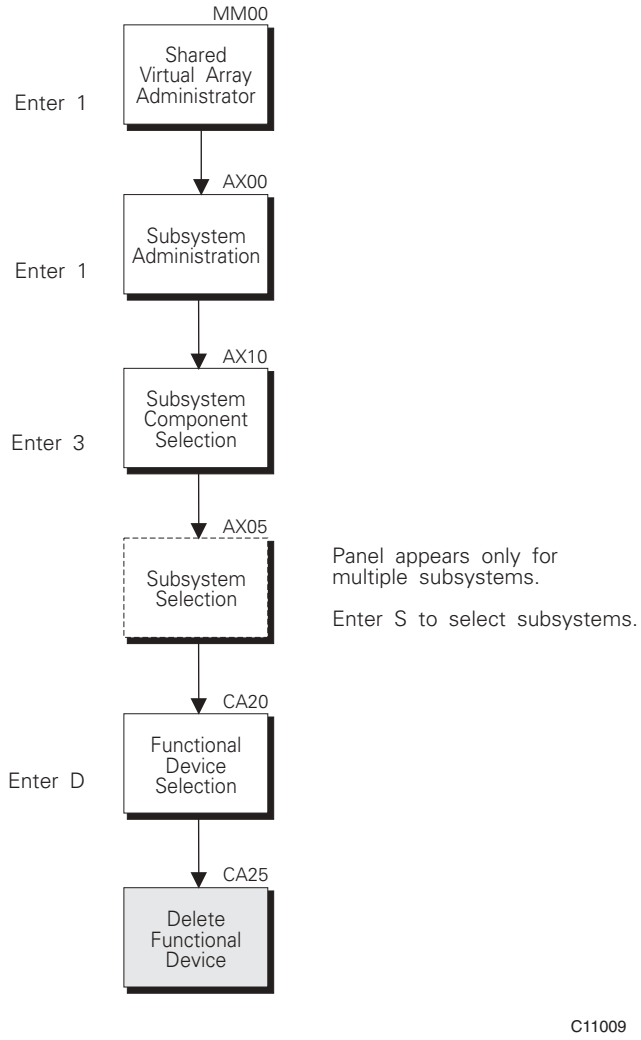
Deleting a Functional Device

The DELETE FUNCTIONAL DEVICE panel appears when you enter **D** on a device definition line on the FUNCTIONAL DEVICE SELECTION panel. This section describes the procedure for deleting the following types of functional devices:

- A device residing on a non-V2Xf subsystem
- A Base device on a V2Xf subsystem
- An Alias device on a V2Xf subsystem

To display the DELETE FUNCTIONAL DEVICE panel:

Delete Functional Device



Examples of the DELETE FUNCTIONAL DEVICE panel:

```
SIBCA25               *** DELETE FUNCTIONAL DEVICE ***
COMMAND===>

                           Subsystem Name: TESTV2X

 Volume ID    :            Operating System: VM          Subsystem ID: C001
 Unit Address    :         Online: NO                    Mounted: NO
 SVAA Communication: NO    Device Type     : SCSIA       Domain Target -LUN-
                           SCSI Blksize    :   512         ___  _____  _____

 Functional Device ID (FDID)    : 23       Name ===> DEV00021
                                           Partition (T=Test/P=Prod.)    : P

 ------------- Capacity --------------    --- Device Status (Y=Yes/N=No) ---
       Functional  --Phys. Used(MB)--      Y CKD Enabled      Y SCSI Enabled
 Cyls     (MB)      Shared     Total      Y CKD R/W          Y SCSI R/W
 -----  ----------  --------  --------     Y Cache Enabled    N Primary
  3339      2838.0       0.0       0.1    Y DASD Fast Write  N Secondary
                                           N Privileged ECAM  N Data Bridge
                                           N Request Dev Attn N Status Bridge
```

Figure 8-36. *Delete Functional Device panel for non-V2Xf subsystems (SIBCA25)*

```
SIBCA25               *** DELETE FUNCTIONAL DEVICE ***
COMMAND===>

                           Subsystem Name: PRODV2XF

 Volume ID    : SW7700     Operating System: VM          Subsystem ID: 7700
 Unit Address    : 7700    Online: YES                   Mounted: YES
 SVAA Communication: NO    Device Type     : 33903


 Functional Device ID (FDID)    : 700      Name    : ABC
 Number of Aliases              : 002      PAV Type (B=Base/A=Alias)    : B

 ------------- Capacity --------------    --- Device Status (Y=Yes/N=No) ---
       Functional  --Phys. Used(MB)--      Y CKD Enabled      Y SCSI Enabled
 Cyls     (MB)      Shared     Total      Y CKD R/W          Y SCSI R/W
 -----  ----------  --------  --------     Y Cache Enabled    N Primary
  3339      2838.0       0.0       0.1    Y DASD Fast Write  N Secondary
                                           N Privileged ECAM  N Data Bridge
                                           N Request Dev Attn N Status Bridge
```

Figure 8-37. *Delete Functional Device panel for Base on V2Xf subsystem (SIBCA25)*

```
SIBCA25               *** DELETE FUNCTIONAL DEVICE ***
COMMAND===>

                            Subsystem Name: PRODV2XF

 Volume ID    :             Operating System: VM          Subsystem ID: 7700
 Unit Address    :          Online: NO                    Mounted: NO
 SVAA Communication: NO     Device Type     : 33903


 Functional Device ID (FDID)    : 7FF      Name    :
 PAV Base Device ID (PAVBASE)   : 700      PAV Type (B=Base/A=Alias)    : A

 ------------ Capacity --------------    --- Device Status (Y=Yes/N=No) ---
        Functional  --Phys. Used(MB)--     Y CKD Enabled      N SCSI Enabled
  Cyls     (MB)      Shared     Total      Y CKD R/W          N SCSI R/W
 -----  ----------  --------  --------     Y Cache Enabled    N Primary
     0         0.0       0.0       0.0     Y DASD Fast Write  N Secondary
                                           Y Privileged ECAM  N Data Bridge
                                           N Request Dev Attn N Status Bridge
```

Figure 8-38. *Delete Functional Device panel for Alias on V2Xf subsystems (SIBCA25)*

Notes:

1. Deleting a functional device makes all data on the device inaccessible. Therefore, you should ***back up any critical data before deleting the device***.
2. Before performing the deletion, you must vary the device offline to all hosts. Note that PAV Base devices must be varied offline to all hosts before any related Alias device can be deleted.
3. If the device has a VM operating system status of BOXED, you may have to (1) vary the device offline to ensure its status is OFFLINE, (2) vary the device online to reestablish a path, and then (3) vary it offline again.

   Note:

4. You *cannot* delete a functional device that is part of a PPRC pair. You must first delete the pair and then you may delete the device.
5. The FORCE parameter is no longer required when deleting an Alias that is related to an offline Base device that contains user data.

Procedure

1. Check the **Online** field to verify that the device is not online.

   (This field should say **NO**.)

2. Check the **Phys. Used(MB), Total** field.

   If this field shows a value greater than zero, back-end storage (user data) exists on the device.

3. Issue the **submit** command.

   SVAA verifies the device is offline and then issues the message:

   ```
   Are you sure you want to delete this device?
   Reply Yes or No.
   ```

4. Type **Y** and press **Enter**.

Subsystem Checks Performed

The subsystem checks the following conditions:

- Device online
- PAV Status
- Back-end storage
- Busy state

Device online

This check prevents you from deleting a functional device that is currently being accessed by another host system.

If the device is not offline to all hosts, the following message appears:

```
device online to another system.
Reply Retry or Cancel.
```

Enter either **R** or **C**.

R Reissues the delete request.

But first, you should ensure that the functional device is offline to all hosts.

C Cancels the delete request.

PAV Status

This check prevents you from deleting a Base device (online or offline) that still has Alias devices related to it and from deleting Alias devices from an online Base device. No operator prompt is issued. However, if the PAV status is not correct, the delete will fail, and an error message is issued.

Back-end storage

The subsystem also checks for back-end storage.

Note: PAV Alias devices do not actually consume additional back-end storage. If data is found, the following message appears:

```
back-end storage exists for this device.
Reply FORCE or Cancel.
```

Enter either **FORCE** or **C**.

FORCE Deletes the back-end storage associated with the device. (Any tracks associated with the device and currently in cache are also deleted.)

C Cancels the delete request.

Busy state

The subsystem determines whether activity is occurring on the device. If the device is busy, the following message appears:

```
device is busy.  Reply Retry or Cancel.
```

Enter either **R** or **C**.

R Reissues the delete request.

The subsystem repeats all checks—to verify that this functional device is offline, contains no back-end storage, and is not busy.

C Cancels the delete request.

The panel for the next functional device you selected appears. If there is none, the UPDATE FUNCTIONAL DEVICE panel appears.

Result

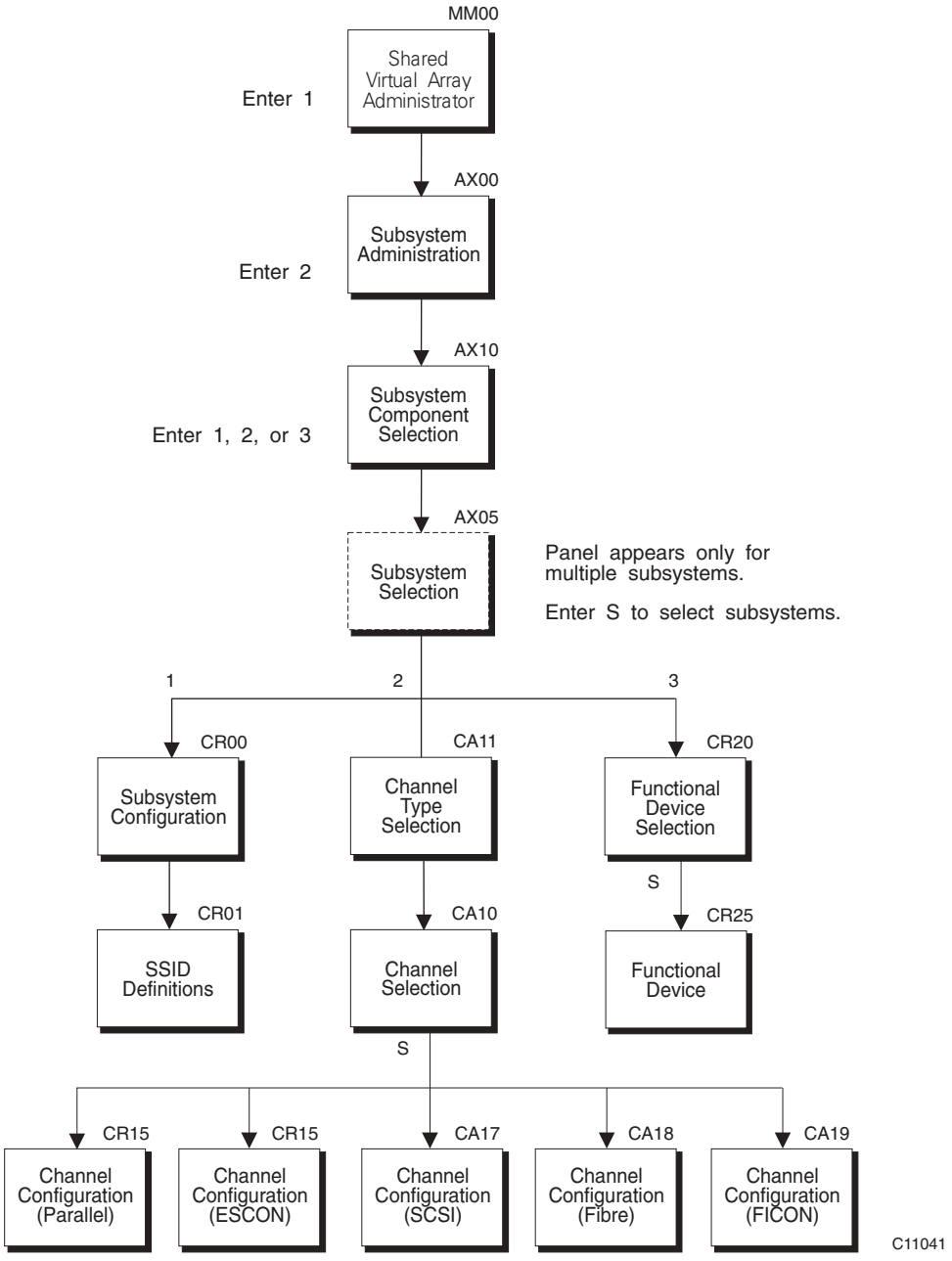
With the satisfactory completion of all checks, the subsystem sends a state-change interrupt to all channels and deletes the device.

The subsystem issues a message that the delete is complete.

Browsing the Current Configuration

The Browse function enables you to view the current characteristics and status of subsystem configurations, channel interfaces, and functional devices. To begin "browsing," select option 2, BROWSE, on the SUBSYSTEM ADMINISTRATION menu (page 8-10).

The sequence of panels you can access when browsing is illustrated in the following diagram:



The panels displayed with the Browse function are similar to many of the panels you use to update a subsystem configuration. Note the following differences:

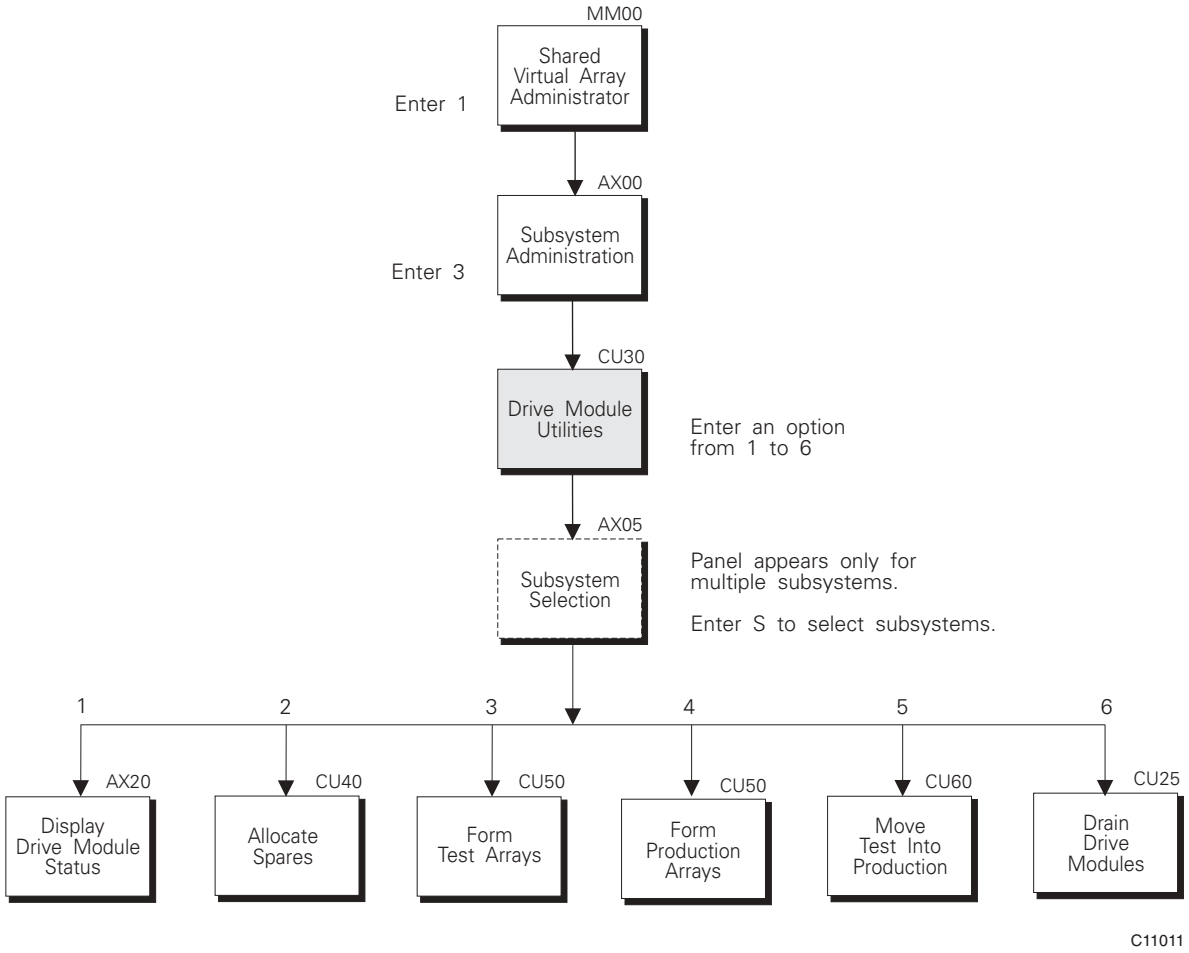
- "**BROWSE**" appears below the command field on each panel.

- The arrows (**===>**) that indicate data entry fields on the configuration update panels are replaced with colons on the browse panels.

Most important: All fields on the browse panels are for ***display only***; you *cannot* enter or modify data.

Drive Module Utilities

The DRIVE MODULE UTILITIES menu provides a selection of six different utilities for managing the status of the drive modules in the subsystem. To display this menu:



Example of the DRIVE MODULE UTILITIES menu:

```
SIBCU30                  *** DRIVE MODULE UTILITIES ***
OPTION ===>

   Subsystem ===>

   1  DISPLAY       - Display drive module status
   2  ALLOCATE      - Allocate spare drive modules
   3  FORM TEST     - Form test arrays
   4  FORM PROD     - Form production arrays
   5  MOVE TEST     - Move drive modules from test to production
   6  DRAIN         - Drain drive modules
```

Figure 8-39. *Drive Module Utilities menu (SIBCU30)*

Procedure

1. Type the number of an option.
2. Tab to **Subsystem** and type the name of the SVA subsystem—*if* SVAA is communicating with multiple SVA subsystems and you want to work with only one of them. (Skip this field if you want to work with more than one subsystem.)
3. Press **Enter**.

Result: The next panel to appear depends upon the number of SVA subsystems for which you have issued a SET ECAMDEVICE subcommand during the current SVAA session.

- For only one SVA subsystem:

  The next panel is the drive module utility panel for the option you have just selected.

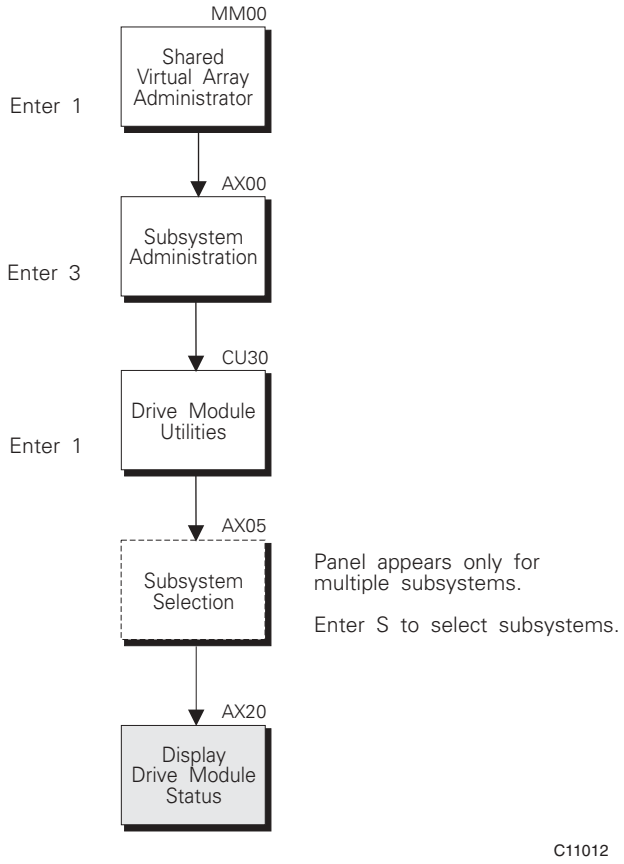
- For multiple SVA subsystems:

  The SUBSYSTEM SELECTION panel appears (see “Subsystem Selection” on page 8-13).

  Select one or more subsystems to be included in the drive module task you want to perform.

Displaying Drive Module Status

To display the DISPLAY DRIVE MODULE STATUS panel:



Example of the DISPLAY DRIVE MODULE STATUS panel:

```
SIBAX20               *** DISPLAY DRIVE MODULE STATUS ***          ROW 1 OF 32
COMMAND===> _                                                   SCROLL ===> PAGE
BROWSE
                            Subsystem Name: SVASYS00

                        ***       All Drives by Slot        ***
                   Drive Modules: 32       Available Spares: 2

   Ary0 P  13+2=15   Ary1 P  13+2=15    Ary2               Ary3
   Ary4              Ary5               Ary6               Ary7

   U.T.S Status Ary   U.T.S Status Ary   U.T.S Status Ary   U.T.S Status Ary
   0.0.0  P.A    0    0.0.1  P.A.   0    0.0.2  P.A    0    0.0.3  P.A     0
   0.0.4  P.A    1    0.0.5  P.A.   0    0.0.6  P.A    0    0.0.7  P.A     0
   0.1.0  P.A    0    0.1.1  P.A.   0    0.1.2  P.A    0    0.1.3  S.A     -
   0.1.4  P.A    0    0.1.5  P.A.   1    0.1.6  P.A    1    0.1.7  P.A     1
   0.2.0  P.A    1    0.2.1  P.A.   0    0.2.2  P.A    1    0.2.3  P.A     1
   0.2.4  P.A    1    0.2.5  P.A.   1    0.2.6  P.A    0    0.2.7  P.A     1
   0.3.0  P.A    1    0.3.1  P.A.   1    0.3.2  P.A    1    0.3.3  P.A     1
   0.3.4  P.A    0    0.3.5  S.A.   -    0.3.6  P.A    1    0.3.7  P.A     0
   1.0.0  U.N    -    1.0.1  U.N.   -    1.0.2  U.N     -   1.0.3  U.N     -
   1.0.4  U.N    -    1.0.5  U.N.   -    1.0.6  U.N     -   1.0.7  U.N     -
```

Figure 8-40. *Display Drive Module Status panel (SIBAX20)*

This panel displays the status of all drive modules in the subsystem.

Display-only Fields

Subsystem Name The name assigned to the SVA subsystem.

Drive Modules The total number of drive modules in the SVA subsystem (or in the specific partition displayed).

Available Spares The number of spare drive modules in the SVA subsystem.

Note: A negative number in this field indicates a serious condition—there are no spares available. You need to allocate or install at least one spare drive module.

Ary0 - Ary7 The array's partition (`P` or `T`) and its configuration.

Note: While a drive is being drained, the configuration can display a total that is too large (followed by a `?`), for example: `13+2=16?`

Column Headings

U.T.S The SVA unit (0 to 3), tray (0 to 3), and slot (0 to 7) in which the drive is located.

Status The status of the drive module. For example, **`P.A`** indicates the drive is in the Production partition and active.

Explanations of all drive module status codes appear in Appendix A, “Drive Module Status.”

Ary The array (0 to 7) to which the drive is assigned, or “-” to indicate the drive is not assigned to an array.

Panel Command Options

To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

The **part** command initiates a sequence of five panels that show drive module status by partition:

part Displays the status of all drive modules in the MAT partition:

```
SIBAX25               *** DISPLAY DRIVE MODULE STATUS ***          ROW 1 OF 1
COMMAND===> _                                                  SCROLL ===> PAGE
BROWSE

                           Subsystem Name: SVASYS00

                      *** Media Acceptance Test Partition ***
                  Drive Modules: 1        Available Spares: 17

   Ary0              Ary1               Ary2               Ary3
   Ary4              Ary5               Ary6               Ary7

   U.T.S Status Ary   U.T.S Status Ary   U.T.S Status Ary   U.T.S Status Ary
   0.0.3  M.A     -
```

Figure 8-41. *Display Drive Module Status panel—MAT partition (SIBAX25)*

Note that the **Ary0** through **Ary7** fields are empty in both the MAT partition and Spares partition displays because drive modules in those partitions are not assigned to any array.

next With the above panel displayed, **next** displays the status of drive modules in the “next” partition (the Spares partition):

```
SIBAX25               *** DISPLAY DRIVE MODULE STATUS ***          ROW 1 OF 5
COMMAND===> _                                                  SCROLL ===> PAGE
BROWSE

                           Subsystem Name: SVASYS00

                      ***         Spares Partition        ***
                  Drive Modules: 17       Available Spares: 17

   Ary0              Ary1               Ary2               Ary3
   Ary4              Ary5               Ary6               Ary7

   U.T.S Status Ary   U.T.S Status Ary   U.T.S Status Ary   U.T.S Status Ary
   0.1.0  S.A     -   0.1.1  S.A     -   0.1.2  S.A     -   0.1.3  S.A     -
   0.1.4  S.A     -   0.1.5  S.A     -   0.1.6  S.A     -   0.1.7  S.A     -
   0.2.0  S.A     -   0.2.1  S.A     -   0.2.2  S.A     -   0.2.4  S.A     -
   0.2.5  S.A     -   0.2.6  S.A     -   0.2.7  S.A     -   0.3.5  S.A
   0.3.7  S.A
```

Figure 8-42. *Display Drive Module Status panel—Spares partition (SIBAX25)*

You can issue the **next** command three more times to display the Test partition, Production partition, and Unavailable partition (in that order).

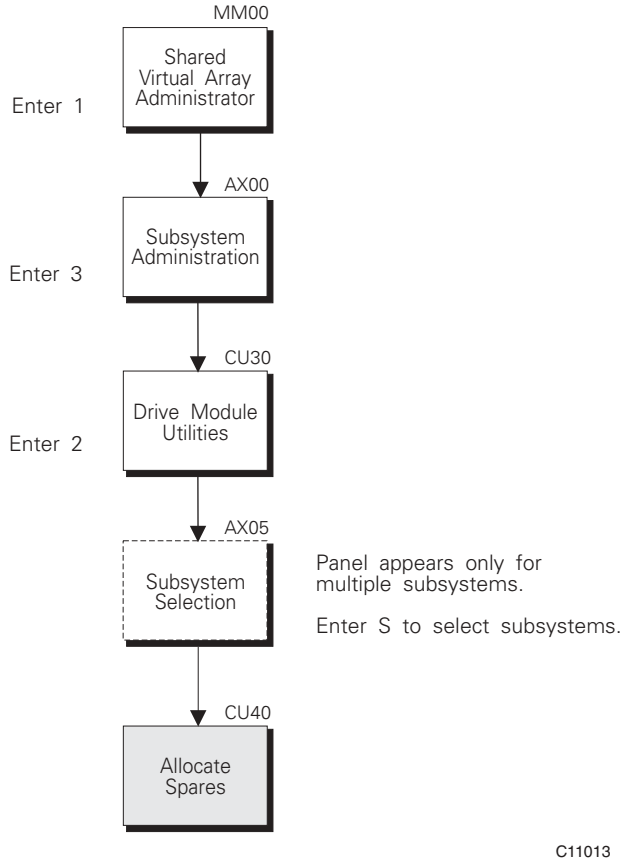
previous Displays the previous drive module status panel—the reverse of the **next** command (that is, from the Unavailable partition display, the order is: Production partition, Test partition, Spares partition, and MAT partition).

From any of the partition panels, issue the **end** command to return to the DISPLAY DRIVE MODULE STATUS panel.

end Returns to the DRIVE MODULE UTILITIES menu.

Allocating Spares

To display the ALLOCATE SPARES panel:



Example of the ALLOCATE SPARES panel:

```
SIBCU40                    *** ALLOCATE SPARES ***                ROW 1 OF 2
COMMAND===>                                                    SCROLL ===> PAGE


                          Subsystem Name: SVASYS00

                    *** Media Acceptance Test Partition ***
               Drive Modules: 8           Available Spares: 15

Selection Mode ===> I          (I = Include, X = Exclude)
Type S to Select Drive Module  (DEFAULT = ALL - valid for INCLUDE only)

   U.T.S Status Ary    U.T.S Status Ary    U.T.S Status Ary    U.T.S Status Ary
_  3.3.0   M.A   -  _  3.3.1   M.A   -  _  3.3.2   M.A   -  _  3.3.3   M.A   -
_  3.3.4   M.A   -  _  3.3.5   M.A   -  _  3.3.6   M.A   -  _  3.3.7   M.A   -
```

Figure 8-43. *Allocate Spares panel (SIBCU40)*

This panel enables you to move drive modules from the MAT partition to the Spares partition. It lists all the drive modules eligible to be moved into the Spares partition; that is, all drives with a status of M.A.

This procedure is necessary before you can form an array, if the spares required for the array are not available.

Display-only Fields

Subsystem Name The name assigned to the SVA subsystem.

Drive Modules The number of drive modules in the MAT partition.

Available Spares The number of spare drive modules in the subsystem.

Note: A negative number in this field indicates a serious condition—there are no spares available. You need to allocate or install at least one spare drive module.

Column Headings

U.T.S The SVA unit (0 to 3), tray (0 to 3), and slot (0 to 7) in which the drive is located.

Status The status of the drive module (e.g., **M.A** indicates the drive is in the MAT partition and active).

Explanations of all drive module status codes appear in Appendix A, “Drive Module Status.”

Ary As drives in the MAT partition are not assigned to any array, a “-” appears in this field.

Procedure

1. Perform one of the following actions:
   - To select all drives, issue the **submit** command.
   - To select one or more drives, type **S** next to the drives you want to allocate as spares, and issue the **submit** command.
   - To select most but not all drives, type **X** in the **Selection Mode** field, type **S** next to the drives you want to exclude, and issue the **submit** command.

   Result: The panel is refreshed and displays a message notifying you whether the operation is successful. The value in the **Available Spares** field is increased by the number of spares allocated. The value in the **Drive Modules** field is decreased by the same number.

Panel Command Options

To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

part Displays the status of all drive modules in the MAT partition (see “Panel Command Options” on page 8-72 for an example).

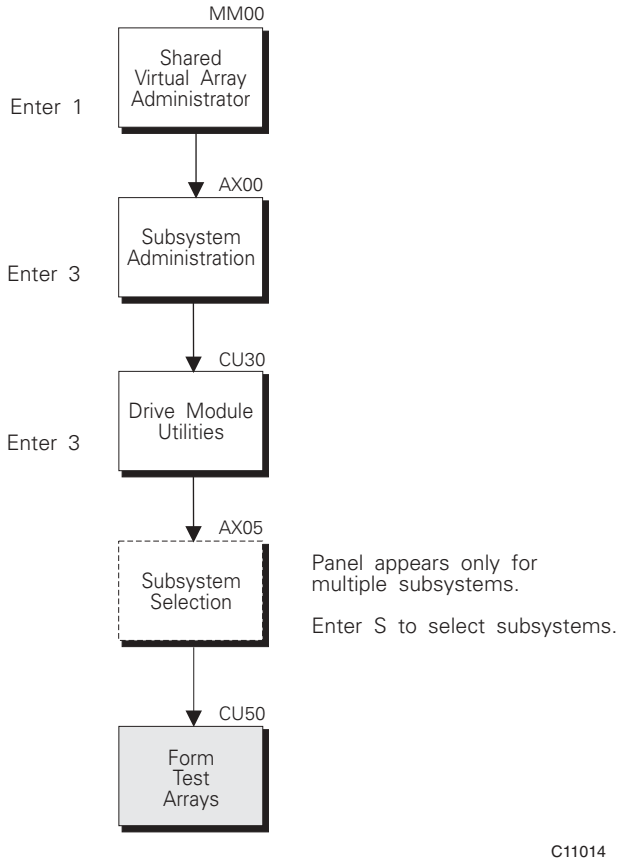
refresh Erases error messages and displays the field values currently in effect.

end Returns to the DRIVE MODULE UTILITIES menu.

Forming Test Arrays

Note: You cannot form Test arrays on the V2Xf, V2X2, V2X, V960, or SVA—only on subsystems running earlier microcode. See “Functional Differences between Subsystems” on page 1-3 for more information. (Existing Test arrays are still completely functional.)

To display the FORM TEST ARRAY(S) panel:



Example of the FORM TEST ARRAY(S) panel:

```
SIBCU50                    *** FORM TEST ARRAY(S) ***              ROW 1 OF 10
COMMAND===>                                                    SCROLL ===> PAGE


                            Subsystem Name: SVASYS00

                            *** Spares Partition ***
                  Drive Modules: 40        Available Spares: 40

       Number of Arrays ===> ALL  (1 to 7 or ALL)
             Array size ===> 13+2 (5+2 or 13+2)

   U.T.S Status Ary    U.T.S Status Ary    U.T.S Status Ary    U.T.S Status Ary
   0.1.1  S.A    -     0.2.6  S.A    -     0.3.3  S.A    -     1.3.5  S.A    -
   1.3.6  S.A    -     2.0.3  S.A    -     2.1.6  S.A    -     2.2.7  S.A    -
   3.0.0  S.A    -     3.0.1  S.A    -     3.0.2  S.A    -     3.0.3  S.A    -
   3.0.4  S.A    -     3.0.5  S.A    -     3.0.6  S.A    -     3.0.7  S.A    -
   3.1.0  S.A    -     3.1.1  S.A    -     3.1.2  S.A    -     3.1.3  S.A    -
   3.1.4  S.A    -     3.1.5  S.A    -     3.1.6  S.A    -     3.1.7  S.A    -
   3.2.0  S.A    -     3.2.1  S.A    -     3.2.2  S.A    -     3.2.3  S.A    -
   3.2.4  S.A    -     3.2.5  S.A    -     3.2.6  S.A    -     3.2.7  S.A    -
   3.3.0  S.A    -     3.3.1  S.A    -     3.3.2  S.A    -     3.3.3  S.A    -
```

Figure 8-44. *Form Test Array(s) panel (SIBCU50)*

This panel enables you to form one or more arrays for the Test partition. It lists all the drive modules in the Spares partition eligible to be used to form arrays.

If too few spares are available to form all the arrays you request, the subsystem forms as many arrays as possible. For an explanation of the number of spares required to form arrays, see “Forming Additional Arrays” on page 2-2.

Display-only Fields

Subsystem Name The name assigned to the SVA subsystem.

Drive Modules The number of drive modules in the Spares partition.

Available Spares The number of spare drive modules in the subsystem.

Note: A negative number in this field indicates a serious condition—there are no spares available. You need to allocate or install at least one spare drive module.

Column Headings

U.T.S The SVA unit (0 to 3), tray (0 to 3), and slot (0 to 7) in which the drive is located.

Status The status of the drive module (e.g., **S.A** indicates the drive is in the Spares partition and active).

Explanations of all drive module status codes appear in Appendix A, “Drive Module Status.”

Ary As drives in the Spares partition are not assigned to any array, a “-” appears in this field.

Procedure

1. You can enter an integer from 1 to 7 or **ALL** in the **Number of Arrays** field.

   Note: The first array must be formed at the LOP or the DOP when the subsystem is installed. Therefore, the maximum number of arrays you can form when you use this panel is 7.

   If you enter **ALL**, the subsystem forms as many arrays as the number of available spares allows.

2. Tab to **Array Size** and enter the size (5+2 or 13+2) of the arrays to be formed—if the size is to be different from the current subsystem default size, which is displayed.

   Note: You can form 5+2 arrays only on the 9393 or 9500 SVA.

3. Issue the **submit** command.

   Result: The panel is refreshed, displaying the information you entered and a message notifying you whether the operation is successful. The values in the **Drive Modules** and **Available Spares** fields are reduced by the number of spares used to form arrays.

Panel Command Options

To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

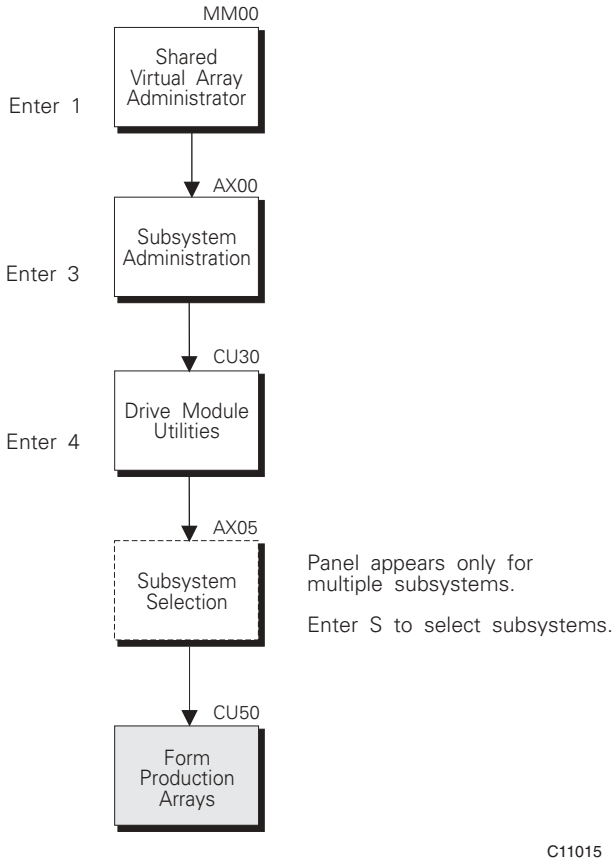
part Displays the status of all drive modules in the Spares partition (see “Panel Command Options” on page 8-72 for an example).

refresh Erases error messages and displays the field values currently in effect.

end Returns to the DRIVE MODULE UTILITIES menu.

Forming Production Arrays

To display the FORM PRODUCTION ARRAY(S) panel:



Example of the FORM PRODUCTION ARRAY(S) panel:

```
SIBCU50                *** FORM PRODUCTION ARRAY(S) ***            ROW 1 OF 10
COMMAND===>                                                   SCROLL ===> PAGE


                          Subsystem Name: SVASYS00

                          *** Spares Partition ***
                Drive Modules: 40        Available Spares: 40

     Number of Arrays ===> ALL  (1 to 7 or ALL)
           Array size ===> 13+2 (5+2 or 13+2)

   U.T.S Status Ary    U.T.S Status Ary    U.T.S Status Ary    U.T.S Status Ary
   0.1.1  S.A    -     0.2.6  S.A    -     0.3.3  S.A    -     1.3.5  S.A    -
   1.3.6  S.A    -     2.0.3  S.A    -     2.1.6  S.A    -     2.2.7  S.A    -
   3.0.0  S.A    -     3.0.1  S.A    -     3.0.2  S.A    -     3.0.3  S.A    -
   3.0.4  S.A    -     3.0.5  S.A    -     3.0.6  S.A    -     3.0.7  S.A    -
   3.1.0  S.A    -     3.1.1  S.A    -     3.1.2  S.A    -     3.1.3  S.A    -
   3.1.4  S.A    -     3.1.5  S.A    -     3.1.6  S.A    -     3.1.7  S.A    -
   3.2.0  S.A    -     3.2.1  S.A    -     3.2.2  S.A    -     3.2.3  S.A    -
   3.2.4  S.A    -     3.2.5  S.A    -     3.2.6  S.A    -     3.2.7  S.A    -
   3.3.0  S.A    -     3.3.1  S.A    -     3.3.2  S.A    -     3.3.3  S.A    -
```

Figure 8-45. *Form Production Array(s) panel (SIBCU50)*

This panel enables you to form one or more arrays for the Production partition. It lists all the drive modules in the Spares partition eligible to be used to form arrays.

If too few spares are available to form all the arrays you request, the subsystem forms as many arrays as possible. For an explanation of the number of spares required to form arrays, see “Forming Additional Arrays” on page 2-2.

Display-only Fields

Subsystem Name The name assigned to the SVA subsystem.

Drive Modules The number of drive modules in the Spares partition.

Available Spares The number of spare drive modules in the subsystem.

Note: A negative number in this field indicates a serious condition—there are no spares available. You need to allocate or install at least one spare drive module.

Column Headings

U.T.S The SVA unit (0 to 3), tray (0 to 3), and slot (0 to 7) in which the drive is located.

Status The status of the drive module (e.g., **S.A** indicates the drive is in the Spares partition and active).

Explanations of all drive module status codes appear in Appendix A, “Drive Module Status.”

Ary As drives in the Spares partition are not assigned to any array, a “-” appears in this field.

Procedure

1. Enter an integer from 1 to 7 or **ALL** in the **Number of Arrays** field.

   Note: The first array must be formed at the LOP when the subsystem is installed. Therefore, the maximum number of arrays you can form when you use this panel is 7.

   If you enter **ALL**, the subsystem forms as many arrays as the number of available spares allows.

   Note: You can form 5+2 arrays only on the 9393 or 9500 SVA. On those subsystems, you can form up to eight 5+2 arrays, but only four 13+2 arrays. Both array sizes can exist on one subsystem. The possible array combinations on one subsystem are:

   4 13+2 arrays and **0** 5+2 arrays
   3 13+2 arrays and **2** 5+2 arrays
   2 13+2 arrays and **4** 5+2 arrays
   1 13+2 arrays and **6** 5+2 arrays
   0 13+2 arrays and **8** 5+2 arrays

2. Tab to **Array Size** and enter the size (5+2 or 13+2) of the arrays to be formed—if the size is to be different from the current subsystem default size, which is displayed.

3. Issue the **submit** command.

   Result: The panel is refreshed, displaying the information you entered and a message notifying you whether the operation is successful. The values in the **Drive Modules** and **Available Spares** fields are reduced by the number of spares used to form arrays.

Panel Command Options

To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

part Displays the status of all drive modules in the Spares partition (see “Panel Command Options” on page 8-72 for an example).

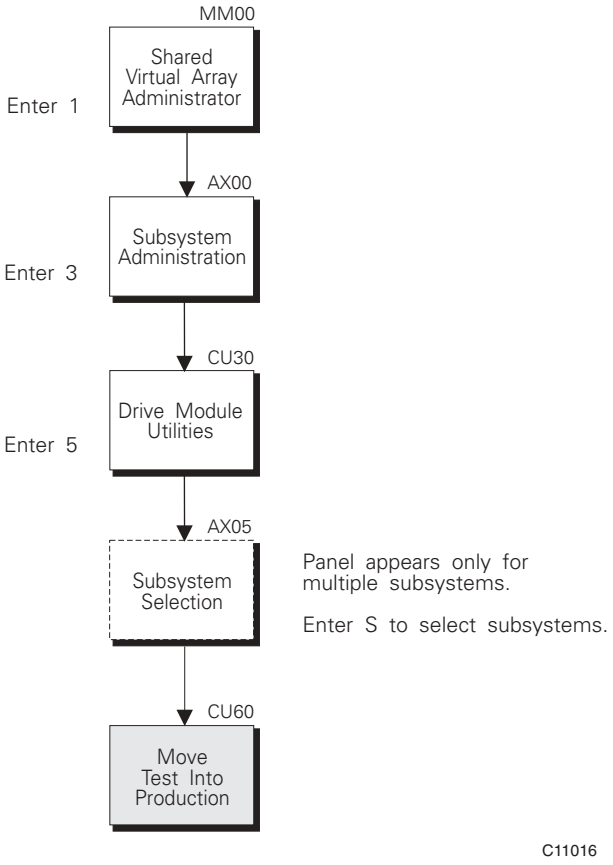
refresh Erases error messages and displays the field values currently in effect.

end Returns to the DRIVE MODULE UTILITIES menu.

Moving Test Partition into Production Partition

Note: This panel is not available on the V2Xf, V2X2, V2X, V960, or 9500 SVA. See “Functional Differences between Subsystems” on page 1-3 for more information.

To display the MOVE TEST INTO PRODUCTION panel:



Example of the MOVE TEST INTO PRODUCTION panel:

```
SIBCU60                  *** MOVE TEST INTO PRODUCTION ***          ROW 1 OF 4
COMMAND===> _                                                   SCROLL ===> PAGE

                            Subsystem Name: SVASYS00

                             *** Test Partition ***
                  Drive Modules: 15       Available Spares: 40

  Ary0 P 13+2=15      Ary1 T 13+2=15      Ary2              Ary3
  Ary4                Ary5                Ary6              Ary7

    U.T.S Status Ary   U.T.S Status Ary   U.T.S Status Ary   U.T.S Status Ary
    0.0.1  T.A    1    0.1.1  T.A    1    0.2.1  T.A    1    0.2.7  T.A    1
    0.3.1  T.A    1    1.0.1  T.A    1    1.1.1  T.A    1    1.2.1  T.A    1
    1.3.1  T.A    1    2.0.1  T.A    1    2.1.1  T.A    1    2.2.1  T.A    1
    3.0.1  T.A    1    3.1.1  T.A    1    3.2.1  T.A    1
```

Figure 8-46. *Move Test into Production panel (SIBCU60)*

This panel enables you to move all drive modules associated with the Test partition—including all functional device definitions and associated data—to the Production partition.

Display-only Fields

Subsystem Name The name assigned to the SVA subsystem.

Drive Modules The number of drive modules in the Test partition.

Available Spares The number of spare drive modules in the SVA subsystem.

Note: A negative number in this field indicates a serious condition—there are no spares available. You need to allocate or install at least one spare drive module.

Column Headings

U.T.S The SVA unit (0 to 3), tray (0 to 3), and slot (0 to 7) in which the drive is located.

Status The status of the drive module (e.g., **T.A** indicates the drive is in the Test partition and active).

Explanations of all drive module status codes appear in Appendix A, “Drive Module Status.”

Ary The array (0 to 7) to which the drive is assigned.

Procedure

1. Issue the **submit** command.

   Result: The panel is refreshed. The message “**MOVE TEST COMPLETE**.” appears if the operation is successful. The **Drive Modules** count is reduced by the number of Test partition drives that are moved to the Production partition.

Panel Command Options

To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

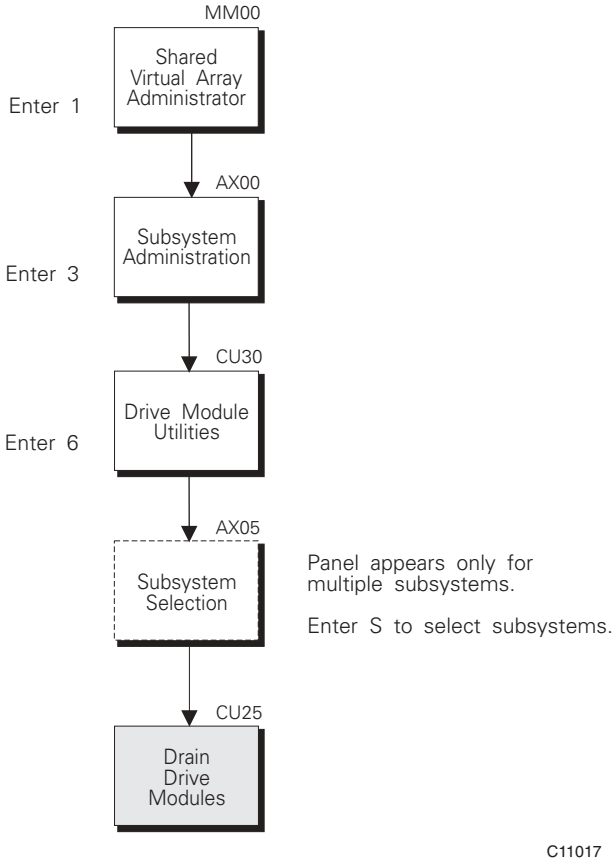
part Displays the status of all drive modules in the Test partition (see “Panel Command Options” on page 8-72 for examples of similar panels).

refresh Erases error messages and displays the field values currently in effect.

end Returns to the DRIVE MODULE UTILITIES menu.

Draining Drive Modules

To display the DRAIN DRIVE MODULE(S) panel:



Example of the DRAIN DRIVE MODULE(S) panel:

```
SIBCU25                 *** DRAIN DRIVE MODULE(S) ***             ROW 1 OF 17
COMMAND===> _                                                  SCROLL ===> PAGE

                          Subsystem Name: SVASYS00

                           Completion Notification
          Host Node ID ===> VMS001             User ID===> SMITH

               *** Array Selection (Type S to select only one) ***
 _ Ary0 T 13+2=15    _ Ary1 P 13+2=15    _ Ary2 P 13+2=15      Ary3
   Ary4              Ary5                Ary6                  Ary7

    *** Disk Array Unit(DAU)/Tray Selection (Type S to select only one) ***
      _ DAU 0             _ DAU 1               DAU 2               DAU 3
_ Tray 0 _ Tray 2    _ Tray 0 _ Tray 2      Tray 0   Tray 2     Tray 0   Tray 2
_ Tray 1 _ Tray 3    _ Tray 1 _ Tray 3      Tray 1   Tray 3     Tray 1   Tray 3

        *** Drive Module(s) Selection (Type S to select one or more) ***
   U.T.S Status Ary    U.T.S Status Ary    U.T.S Status Ary    U.T.S Status Ary
_  0.0.0  S.A    -   _  0.0.1  S.A    -   _  0.0.2  S.A    -   _  0.0.3  T.A    0
_  0.0.4  T.A    0   _  0.0.5  P.A    1   _  0.0.6  P.A    1   _  0.0.7  P.A    2
_  0.1.0  S.A    -   _  0.1.1  S.A    -   _  0.1.2  T.A    0   _  0.1.3  T.A    0
```

Figure 8-47. *Drain Drive Module(s) panel (SIBCU25)*

This panel enables you to initiate a drain of specific drive modules. When drives have been successfully drained, they are placed in the MAT partition for removal or reallocation. You can select drive modules to be drained in one of four ways:

- individually (by unit, tray, slot)
- by array
- by tray
- by DAU (disk array unit)

Notes:

1. You cannot drain the last drive module, last array, last tray, or last DAU.
2. You cannot drain a DAU or a tray if a Test partition is defined.
3. You cannot terminate a drain once it has started.

Before the SVA subsystem starts a drain, it ensures that there is sufficient subsystem capacity to hold the data to be drained. If available capacity is insufficient, the drain request fails.

Procedure

1. (Optional) The **Completion Notification** fields display the default values. To change the destinations for notification, tab to and update the following fields:

   Host Node ID — The host Node ID to which notice of drain completion should be sent.

   Default: Node ID from which you initiate the drain.

   User ID — The user ID of the individual to be notified.

   Default: Current user ID

2. To select components to be drained, type **S** to the left of:

   - **Ary** — the array to be drained, or
   - **DAU** — the disk array unit to be drained, or
   - **Tray** — the tray to be drained, or
   - one or more **U.T.S** designations — the drive module(s) to be drained.

   In a *single drive module* drain, all the data in the drive is moved to a spare drive module. Thus, for each Production or Test partition drive module to be drained, a spare drive module must be available. (No spare drive is required to drain a spare, however.) If the necessary spare drive modules are not available when a drain is requested, the drain request is rejected.

   In an *array* drain, all the data in the array is moved to other existing arrays in the same partition.

   Note: While a drive is being drained, the configuration can display a total that is too large (followed by a ?), for example: `Ary1 P 13+2=16?`. (When the drain is complete, the displayed total will be correct.)

   The method used to drain a DAU or a tray depends upon the number of spares available in addition to the number of spares reserved for existing arrays.

   - If, for each drive module in the DAU or tray to be drained, a spare drive is available outside that DAU or tray, each drive module is drained into one of the spares.
   - If the number of available spares is inadequate, the process involves draining arrays. In this case, drain activity may be observed in "associated" drive modules—modules that are part of an array being drained but are outside the "target" DAU or tray.

3. Issue the **submit** command.

   A confirm message appears:

   ```
   Once initiated, this drain cannot be terminated.
   Are you sure you wish to continue? (Reply YES or NO)
   ```

4. Type **YES** to continue and press **Enter**.

   Result: An SVAA message appears in the upper right corner of the panel. Issue the **help** command to get information about the message. If the drain is successfully initiated, a process identifier number for the drain is assigned.

Panel Command Options

To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

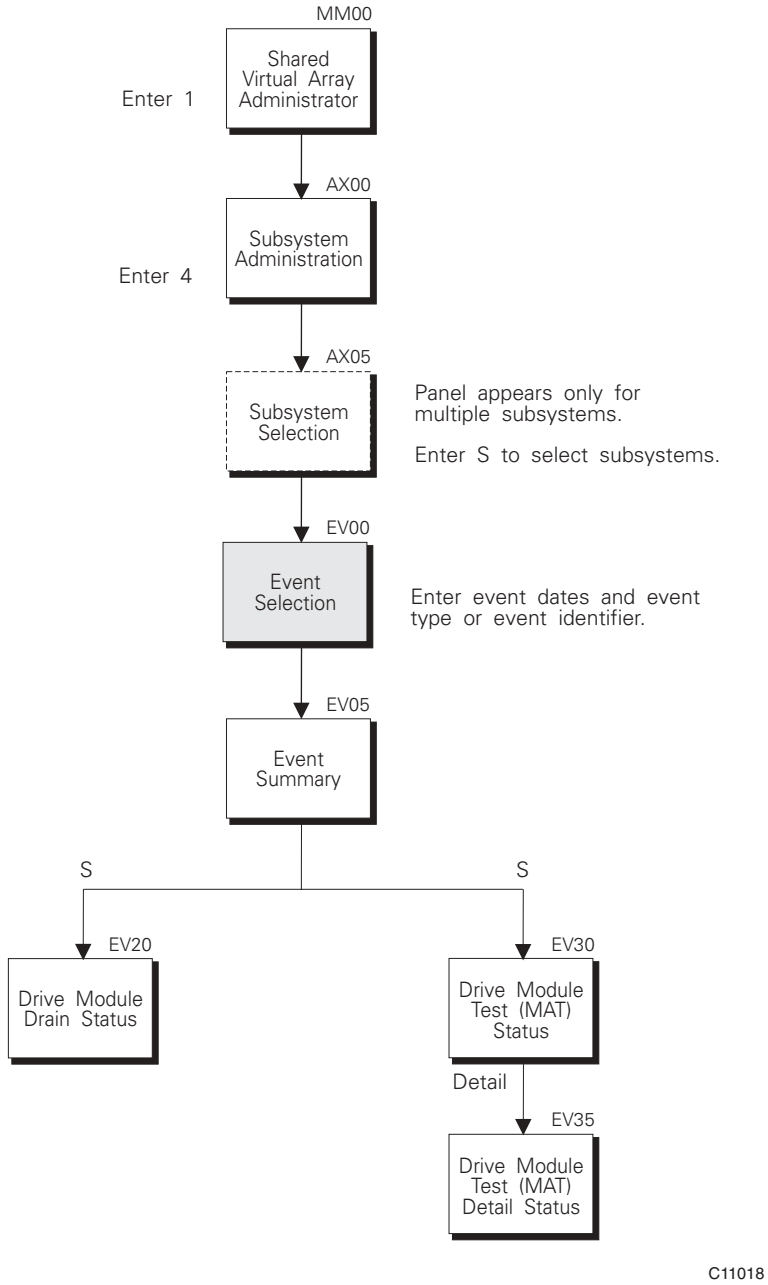
refresh Erases error messages and displays the field values currently in effect.

end Returns to the DRIVE MODULE UTILITIES menu.

Displaying Event Status

You can view the status of drain events that have been run within the last 60 days or are still in progress. You begin this activity by entering selection criteria on the EVENT SELECTION panel. In this way you shorten the list (which appears next) from which you select events for display.

To display the EVENT SELECTION panel:



Example of the EVENT SELECTION panel:

```
SIBEV00                      *** EVENT SELECTION ***
COMMAND===>

                           Subsystem Name: Multiple

 From Date:       06MAY1999  Display events beginning with this date. Default
                             is 7 days prior to today.  Format is ddmmmyyyy
                             or N format where N is from 0 to -60.

 To Date:         19MAY1999  Display events up to and including this date.
                             Format is ddmmmyyyy or N from 0 to -60.


 Type:            ALL__      Qualify selection by specific events.


 Identifier:      __________ Qualify selection by selecting a specific event
                             number. "LAST" may be used to indicate the last
                             event.
```

Figure 8-48. *Event Selection panel (SIBEV00)*

Use this panel to specify selection criteria for drains for which you would like to see status or historical data.

Procedure

1. Tab to and update the following fields:

   From Date Required unless you specify an **Identifier**. This is the starting date for event reporting. It must be within 60 days of today's date and earlier than the **To Date**.

   Enter the **From Date** in the form *ddmmmyyyy*, or enter a minus sign followed by a number to indicate the number of days prior to today. For example, -6 indicates that the starting date is six days ago; 0 indicates today's date.

   Default: 7 days prior to today's date

   To Date Required unless you specify an **Identifier**. This is the ending date for event reporting. It must be within 60 days of today's date and later than the **From Date**.

   Enter the **To Date** in the form *ddmmmyyyy*, or enter a minus sign followed by a number to indicate the number of days prior to today. For example, -2 indicates that the ending date is two days ago; 0 indicates today's date.

   Default: Today's date

   Type The type of events to be included in the report.

   Enter **DRAIN** or **ALL**.

   Default: **ALL**

Identifier The numeric process identifier of a specific drain to be reported upon or "**LAST**" to indicate the most recent drain.

If you enter a process identifier, only that process will be reported upon; the **From Date**, **To Date**, and **Type** fields are ignored.

If you enter **LAST**, the **From Date** and **To Date** fields are ignored. The **Type** field determines which last event(s) will be reported upon.

Default: none

2. Press **Enter**.

   Result: The EVENT SUMMARY panel appears.

```
                          *** EVENT SUMMARY ***
COMMAND===> _

                         Subsystem Name: Multiple

      Event      Subsystem     Initiating        Initiation      Completion
  Name  Identifier  Name     Nodeid   Userid    Date      Time  Date      Time
_ MAT   1507816024  ICESUB01 A0803    linda    01MAY1999 14:34
S DRAIN 0793394512  SVASYSD  C1271    john     01MAY1999 13:33
_ DRAIN 3165781440  ICESUB01 A0803    linda    27MAY1999 00:42 27OCT1999 02:23
S MAT   2209143271  SVASYSA  F0048    dorothy  27MAY1999 07:51 27OCT1999 09:20
_ DRAIN 1623887904  SVASYSC  B1774    dave     15MAY1999 22:01 16OCT1999 00:25
_ DRAIN 0921568232  SVASYSA  C1271    john     15MAY1999 23:18 16OCT1999 02:18
_ MAT   4359103625  SVASYSA  F0048    dorothy  11MAY1999 12:45 11OCT1999 14:22
_ MAT   1142783432  SVASYSA  F0048    dorothy  10MAY1999 12:21 10OCT1999  15:15
_ MAT   1002569018  SVASYSC  A0803    linda    08MAY1999 14:23 08OCT1999 20:21
_ MAT   4339022761  SVASYSA  A0803    linda    07MAY1999 12:21 07OCT1999 15:15
```

Figure 8-49. *Event Summary panel (SIBEV05)*

The EVENT SUMMARY panel displays summary information for events meeting the criteria you specified on the EVENT SELECTION panel.

Display-only Fields

Subsystem Name The name of the SVA subsystem selected on the SUBSYSTEM SELECTION panel. (**Multiple** indicates more than one subsystem was selected.)

Event Name The type of event.

Event Identifier The process ID number.

Subsystem Name The name of the SVA subsystem in which the event was initiated.

Initiating Node ID The host node ID from which the event was initiated.

Initiating User ID The ID of the user who initiated the event.

Initiation Date The date the user initiated the event.

Initiation Time The time the user initiated the event.

Completion Date The date the event completed execution (blank if not yet completed).

Completion Time The time the event completed execution (blank if not yet completed).

Procedure

To display additional information about specific events:

1. Tab to the desired events and type **S** to the left of each event name.
2. Press **Enter**.

   Result: A status display for the first selected event appears.

   See “Drive Module Drain Status” (below) for drain events, or “Media Acceptance Test Status” on page 8-92 for MAT events.

Drive Module Drain Status

The DRIVE MODULE DRAIN STATUS panel appears after you type an **S** next to a drain event on the EVENT SUMMARY panel.

```
                      *** DRIVE MODULE DRAIN STATUS ***
COMMAND===> _

                           Subsystem Name: SVASYSD

       Initiating Node ID: C1271             Started:   01MAY1999 13:33:02
       Initiating User ID: john              Completed:
       Drain Identifier: 0793394512          Elapsed Time:   02:20:21
                                             Percent Complete: 86

                           Completion Notification
        Host Node ID: C1271                    User ID: john

        Serial                      Serial                      Serial
U.T.S   Number  Status    U.T.S   Number  Status    U.T.S   Number  Status
0.0.0  00187256 P.A       0.0.1  00387256 P.A       0.1.2  00087256 S.A
0.0.3  00925618 P.A       0.0.4  00525618 P.A       0.1.5  00225618 S.A
0.0.6  00427831 P.A       0.1.7  00627831 P.A       0.2.0  00527831 S.A
0.2.1  00567261 S.A       0.2.2  00767261 P.A       0.2.3  00667261 S.A
0.2.4  00419201 P.A       0.2.5  00819201 S.A       0.2.6  00719201 S.A
0.2.7  00419201 P.A       0.3.0  00819201 S.A       0.3.1  00719201 S.A
```

Figure 8-50. *Drive Module Drain Status panel (SIBEV20)*

This panel displays detailed status information for a drain.

Display-only Fields

Subsystem Name The name of the SVA subsystem in which the drain was initiated.

Initiating Node ID The host node ID from which the drain was initiated.

Started The date and time the drain started.

Initiating User ID The user ID of the person who initiated the drain.

Completed	The time the drain completed (blank if not yet completed).
Drain Identifier	The process ID of the drain.
Elapsed Time	The elapsed execution time (hh:mm:ss) for the drain.
Percent Completed	The percentage of the drain that is complete.
Host Node ID	The host node ID to be notified when the drain completed.
User ID	The user ID of the person to be notified when the drain completed.
U.T.S	The SVA unit (0 to 3), tray (0 to 3), and slot (0 to 7) in which the drive is located.
Serial Number	The serial number of the drive module.
Device Status	The status of the drive module (partition code followed by the state code). Explanations of all drive module status codes appear in Appendix A, “Drive Module Status.”

Panel Command Options

To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

`refresh`	Updates the display with current information.
`next`	Displays the next selected event, if any.
`previous`	Displays the previously displayed event, if any.
`end`	Returns to the EVENT SUMMARY panel.
`end`	(again) Returns to the EVENT SELECTION panel.

Media Acceptance Test Status

The DRIVE MODULE TEST (MAT) STATUS panel appears after you type an **S** next to a MAT event on the EVENT SUMMARY panel.

```
                    *** DRIVE MODULE TEST (MAT) STATUS ***
COMMAND===> _

                           Subsystem Name: SVASYSA


       Initiating Node ID: F0048             Started:   27MAY1999 07:51:17
       Initiating User ID: dorothy           Completed: 27MAY1999 09:20:38
       Terminating Node ID: F0048            Elapsed time:   01:29:21
       Terminating User ID: toto             Iterations Completed: 1
       MAT Identifier: 2209143271

       Test Duration ---------------         Media Tests ------------------
           Number of Iterations  2              S Sequential  _ Read Only
           Time in Hours 0                      _ High-Low
                                                _ Random

       Test data patterns (Default to "worst case" data pattern)
          Media:       ____ ____ ____ ____ ____ ____ ____ ____
          Electronics: ____ ____ ____ ____ ____ ____ ____ ____
                       Completion Notification
        Host Node ID: D0562                    User ID: harry
```

Figure 8-51. *Drive Module Test (MAT) Status panel (SIBEV30)*

This panel displays summary status information for a Media Acceptance Test.

Display-only Fields

Subsystem Name The name of the SVA subsystem in which the MAT was initiated.

Initiating Node ID The host node ID from which the MAT was initiated.

Started The date and time the MAT started.

Initiating User ID The user ID of the person who initiated the MAT.

Completed The time the MAT completed (blank if not yet completed).

Terminating Node ID The host node ID from which the test is stopped.

Elapsed Time The elapsed execution time (hh:mm:ss) for the MAT.

Terminating User ID The user ID of the person who stopped the test.

Iterations Completed The number of test iterations completed.

MAT Identifier The process ID of the Media Acceptance Test.

Number of Iterations The number of iterations requested when the MAT was started.

Media Tests The type of MAT executed.

Time in Hours The test time requested when the MAT was initiated.

Media This data pattern stresses the drive module's media recording capabilities.

Electronics This data pattern stresses the drive module's data transfer capabilities.

Panel Command Options

To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

refresh Updates the display with current information.

detail Displays the DRIVE MODULE TEST (MAT) DETAIL STATUS panel (see the following section).

next Displays the next selected event, if any.

previous Displays the previously displayed event, if any.

end Returns to the EVENT SUMMARY panel.

end (again) Returns to the EVENT SELECTION panel.

Media Acceptance Test Detail Status

The DRIVE MODULE TEST (MAT) DETAIL STATUS panel appears after you issue the **detail** command on the DRIVE MODULE TEST (MAT) STATUS panel.

```
                  *** DRIVE MODULE TEST (MAT) DETAIL STATUS ***
COMMAND===> _

                            Subsystem Name: SVASYSA


MAT Identifier: 2209143271 Iterations Completed: 1    Elapsed Time: 01.29.21

        Serial          % of    Iter  % of   Motion   Seek   Tracks  Sectors
U.T.S   Number  Status  Total  Count  Iter.   Seeks  Errors  Tested  Assigned
0.0.0  00187256 M.A      100.      1   10.3    8612           40908         1
0.0.1  00925618 M.A      100.      1   11.3    8690           41279         0
0.0.2  00427831 M.A      100.      1    9.0    8511           40426         0
0.0.3  00567261 M.A      100.      1    9.3    8534           40537         0
0.0.4  00419201 M.A      100.      1   11.1    8674           41205         0
0.0.5  00782722 M.A      100.      1    8.3    8456           40166         0
0.0.6  00325551 M.A      100.      1   10.0    8589           40797         2
0.0.7  00719282 M.A      100.      1   11.1    8672           41199         0
0.1.0  00910119 M.A      100.      1    9.8    8573           40723         0
0.1.2  00319222 M.A      100.      1    8.9    8503           40389         0
```

Figure 8-52. *Drive Module Test (MAT) Detail Status panel (SIBEV35)*

This panel displays detailed status information for a MAT.

Display-only Fields

Subsystem Name The name of the SVA subsystem in which the MAT was initiated.

MAT Identifier The process ID of the Media Acceptance Test.

Iterations Completed The number of test iterations that have completed.

Elapsed Time	The time that has elapsed since the MAT started.
U.T.S	The SVA unit (0 to 3), tray (0 to 3), and slot (0 to 7) in which the drive is located.
Serial Number	The serial number of the drive module.
Status	The status of the drive module (the partition code followed by the state code). Explanations of all drive module status codes appear in Appendix A, “Drive Module Status.”
% of Total	The percentage of the test that is complete.
Iter Count	The number of test iterations that have been completed.
% of Iter.	The percentage of the current test iteration that is complete.
Motion Seeks	The number of times the read/write head has been positioned on a track.
Seek Errors	The number of errors encountered in trying to position the read/write head to a track.
Tracks Tested	The number of disk tracks that have been tested.
Sectors Assigned	The number of bad sectors on the disk.

Panel Command Options

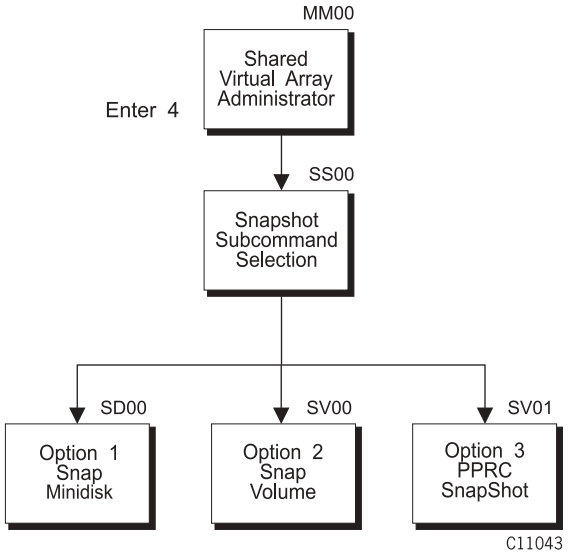
To execute an SVAA panel command, type the command in the command field (and press **Enter**) or press the corresponding function key.

`refresh` Updates the display with current information.

`end` Returns to the DRIVE MODULE TEST (MAT) STATUS panel.

Specifying SnapShot Subcommands

You can submit SNAP MINIDISK and SNAP VOLUME subcommands from the panels described in this section. The following diagram illustrates the panel sequence.



Begin by selecting option **4** on the main menu to display the SNAPSHOT SUBCOMMAND SELECTION panel.

Selecting a SnapShot Subcommand

```
SIBSS00              *** SNAPSHOT SUBCOMMAND SELECTION ***
OPTION  ===>

   1  SNAP MINIDISK - Specify Snap Minidisk Subcommand
   2  SNAP VOLUME   - Specify Snap Volume Subcommand
   3  PPRC SNAPSHOT - Specify Remote Snap Volume Subcommand
```

Figure 8-53. *SnapShot Subcommand Selection panel (SIBSS00)*

Enter **1**, **2**, or **3** to select the SnapShot subcommand you want to submit—either SNAP DATASET, SNAP VOLUME, or PPRC Remote SnapShot.

Specifying the Snap Minidisk Subcommand

Here is an example of the SPECIFY SNAP MINIDISK SUBCOMMAND panel:

```
SIBSM00            *** SPECIFY SNAP MINIDISK SUBCOMMAND ***
COMMAND===>

   Source Device ===>          From ===>

     Userid ===>           Linkmode ===>     Password ===>

   Target Device ===>          From ===>

     Userid ===>           Linkmode ===>     Password ===>

   For               ===> SOURCE    (SOUrce, TaRGet, ncyls)
   Datamover Name    ===> NONE      (NONE, macname)
   Relocate          ===> NO        (Yes, No)
   Debug             ===> OFF       (OFF, ON)
   Prompt            ===> YES       (Yes, No)
```

Figure 8-54. *Specify Snap Minidisk Subcommand panel (SIBSM00)*

Procedure

1. Tab to and update the following fields as necessary:

   Source Device — Required. The virtual device address of the source minidisk.

   From — Optional. The starting cylinder for the snap relative to the beginning of the minidisk: a whole number in the range 0 to n-1, where n is the number of cylinders in the minidisk.

   Default: **0**

   Userid — Optional. The VM userid that owns the minidisk specified by **Source Device** or **Target Device**. If you use this field, the device is a directory-defined minidisk. SnapShot uses the CP LINK command to link to the minidisk.

   If you do not use this field, the device is an existing virtual device in your virtual machine's I/O configuration.

   Linkmode — Optional. The link mode of the source or target minidisk, as specified in the CP LINK command documentation.

   For the source minidisk, link mode can be: **R, RR, W, WR, M, MR, MW, SR, SW, SM, ER,** or **EW**.

   For the target minidisk, link mode can be: **W, M, MW, SW, SM,** or **EW**.

   Default for the source minidisk: **RR**

   Default for the target minidisk: **W**

Password

Optional. The password to be supplied to CP for executing the LINK command for the minidisk specified by the Source Device or Target Device.

Note: Using an external security manager may preclude the use of this field.

Target Device

Required. The virtual device address of the target minidisk.

For

Optional. The number of cylinders to be snapped from the source minidisk to the target minidisk.

SOUrce All of the cylinders to the end of the source minidisk, starting with the cylinder specified in the **From** field for the source minidisk.

TaRGet All of the cylinders to the end of the target minidisk, starting with the cylinder specified in the **From** field for the target minidisk.

ncyls The number of contiguous cylinders to be snapped.

Default: **SOURCE**

Note: The number of cylinders specified must be available on both the source and target minidisks.

Datamover Name

Optional. When the source and target minidisks do not reside on the same SVA subsystem and partition, you can specify a data mover program to physically copy the minidisk without SnapShot.

If you do not specify a data mover and one is needed, or if SnapShot is unable to access the data mover, the operation is cancelled.

NONE Do not use a data mover.

macname The name of the SVAA macro that is to be invoked when SnapShot determines that a data mover is required.

Default: **NONE**

Relocate

Optional. Specifies whether the SVA is to relocate the count fields to real cylinder 0 of the DASD volume.

Yes Create target count fields that match the real cylinder location of the target device. **Yes** is valid only if the target device is defined to begin on real cylinder 0.

No Use the source count fields for the target count fields.

Default: **NO**

Incorrect use of this parameter may make the target minidisk unusable.

In normal use, VM neither requires nor supports relocated count fields.

Debug Optional. Enables or disables the logging of diagnostic messages. Use this parameter only at the request of your service representative.

OFF Disable the generation of diagnostic messages.
ON Enable the generation of diagnostic messages.

Default: **OFF**

Prompt Optional. Specifies whether a prompt is to be displayed about the source and target minidisks, giving you the option to either continue or cancel the request.

Yes Display the prompt.
No Do not display the prompt.

Default: **YES**

2. Issue the **submit** command to execute the SNAP MINIDISK subcommand.

Specifying the Snap Volume Subcommand

Here is an example of the SPECIFY SNAP VOLUME SUBCOMMAND panel:

```
SIBSV00             *** SPECIFY SNAP VOLUME SUBCOMMAND ***
COMMAND===>

   Source Volume ===>         or Unit Addr ===>       From ===>

   Target Volume ===>         or Unit Addr ===>       From ===>

   For                      ===> SOURCE    (SOUrce, TaRGet, ncyls)
   Datamover Name           ===> NONE      (NONE, macname)
   Relocate                 ===> NO        (Yes, No)
   Debug                    ===> OFF       (OFF, ON)
   Prompt                   ===> YES       (Yes, No)


   Note: This subcommand is intended for privileged VM users only.
```

Figure 8-55. *Specify Snap Volume Subcommand panel (SIBSV00)*

Procedure

1. Tab to and update the following fields as necessary:

   Source Volume — The volume serial number of the source device.

   You can specify the source by either **Source Volume** or **Unit Addr**—not both. The volume must be online to the host attempting the snap operation. In no case can PAV Alias devices be used as the source of a snap operation.

   Unit Addr — The unit address (hexadecimal), as known to the host operating system, of the source or target volume. The device must be online to the host attempting the snap.

   From — Optional. The starting cylinder for the snap relative to the beginning of the volume: a whole number in the range 0 to n-1, where n is the number of cylinders in the volume.

   Default: **0**

   Target Volume — Required. The volume serial number of the target device. In no case can PAV Alias devices be used as the target of a snap operation.

   For — Optional. The number of cylinders to be snapped from the source volume to the target volume.

   - **SOUrce** All of the cylinders to the end of the source volume, starting with the cylinder specified in the **From** field for the source volume.
   - **TaRGet** All of the cylinders to the end of the target volume, starting with the cylinder specified in the **From** field for the target volume.

ncyls The number of contiguous cylinders to be snapped.

Default: **SOURCE**

Note: The number of cylinders specified must be available on both the source and target volumes.

Datamover Name Optional. When the source and target volumes do not reside on the same SVA subsystem and partition, you can specify a data mover program to physically copy the volume without SnapShot.

If you do not specify a data mover and one is needed, or if SnapShot is unable to access the data mover, the operation is cancelled.

NONE Do not use a data mover.
macname The name of the SVAA macro that is to be invoked when SnapShot determines that a data mover is required to perform the copy operation.

Default: **NONE**

Relocate Optional. Specifies whether the SVA is to relocate the count fields to real cylinder 0 of the DASD volume.

Yes Create target count fields that match the real cylinder location of the target device. **Yes** is valid only if the target device is defined to begin on real cylinder 0.
No Use the source count fields for the target count fields.

Default: **NO**

Debug Optional. Enables or disables the logging of diagnostic messages. Use this parameter only at the request of your service representative.

OFF Disable the generation of diagnostic messages.
ON Enable the generation of diagnostic messages.

Default: **OFF**

Prompt Optional. Specifies whether a prompt is to be displayed about the source and target volumes, giving you the option to either continue or cancel the request.

Yes Display the prompt.
No Do not display the prompt.

Default: **YES**

2. Issue the **submit** command to execute the SNAP VOLUME subcommand.

Specifying the PPRC Remote SnapShot Volume Subcommand

Here is an example of the SPECIFY PPRC REMOTE SNAPSHOT VOLUME SUBCOMMAND panel:

```
SIBSV01            *** PPRC REMOTE SNAPSHOT VOLUME ***
COMMAND===>

   Source Volume ===> ______  or Unit Addr ===> AED7              From ===> 0

   Remote FDID   ===> 3E7   and Serial Number ===> 7025           From ===> 0


   For                      ===> SOURCE                (SOUrce, ncyls)
   Relocate                 ===> NO                    (Yes, No)
   Debug                    ===> OFF                   (OFF, ON)
   Prompt                   ===> YES                   (Yes, No)



   Note: This subcommand is intended for privileged VM users only.
```

Figure 8-56. *PPRC Remote SnapShot Volume panel (SIBSV01)*

Procedure

Note: Complete descriptions of the following parameters, including restrictions on their use, are provided in the SNAP VOLUME subcommand documentation beginning on page 9-136.

1. Tab to and update the following fields as necessary:

   Source Volume — The volume serial number of the volume to be snapped.

   You can specify the source by either **Source Volume** or **Unit Addr**—not both. The volume must be online to the host attempting the snap operation.

   Unit Addr — The unit address (as known to the host operating system) of the source or target volume. You can specify the source or target by either **Volume** or **Unit Addr**—not both. The volume must be online to the host attempting the snap operation.

   Remote FDID — Identifies the target functional device ID for the SnapShot request.

   Serial Number — Specifies the serial number of the remote SVA that is connected via PPRC.

   From — The starting cylinder for the remote snapshot operation.

   For — Identifies the number of cylinders to copy.

   SOUrce Use the source volume cylinder count.
   ncyls Decimal cylinder value.

   Relocate — Specifies whether count fields are to be relocated on the target DASD volume.

Yes Create target count fields that match the real cylinder location. This value is valid only if the target device is defined to begin on real cylinder 0.
No Use the original source count fields for the target volume.

Debug Enables or disables the logging of diagnostic messages. Use this parameter only at the request of your service representative.

OFF Disable the generation of diagnostic messages.
ON Enable the generation of diagnostic messages.

Prompt Specifies whether a continuation prompting message should be generated.

Yes Display a prompt message.
No Do not issue a prompt message.

2. Issue the **submit** command to execute the PPRC SNAPSHOT VOLUME subcommand.

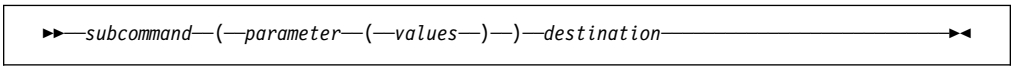
Chapter 9. SVAA Subcommands and Commands

Chapter Summary

Subcommands of SIBADMIN

You can issue SVAA subcommands through SIBADMIN. This enables you to configure the SVA subsystem from CMS.

The general form of SVAA subcommands is shown in the following diagram (the conventions used in the syntax diagrams in this book are explained on page xiv):



where:

subcommand is a subcommand described in this chapter.

parameter is the name of a parameter described in this chapter. (More than one parameter, together with its values, may be included in the subcommand.)

values is one or more of the acceptable values for the specified parameter.

destination is a destination for the output of this particular subcommand to override the destination currently in effect for all SVAA subcommands. For more information, see "Redirecting Subcommand Output" on page 9-8.

Note: You can include a *destination* for output at the end of any SVAA subcommand. However, because you would generally not use it, the destination option is not shown in the subcommand syntax diagrams in this chapter.

Executing Commands from SIBADMIN

In the CMS environment, you can:

- Enter **SIBADMIN** followed by any SVAA subcommand (press **Enter**).
- Enter only **SIBADMIN** and press **Enter**. This establishes the "**SIB**" environment; SVAA returns the **SIB:** prompt, at which you can:
  - Enter an SVAA subcommand. SVAA executes the subcommand and again displays the **SIB:** prompt. Enter another subcommand, or
  - Enter **end** to return to the CMS environment.

See "Issuing Subcommands Interactively" on page 3-3 for more detail.

Executing Macros from SIBADMIN

In SIBADMIN, you can invoke an SVAA macro to execute a frequently used series of commands, which may include SVAA subcommands. Creating a macro eliminates the task of entering the commands individually. To execute a macro, either:

- Enter **MACRO** *macroname*, where *macroname* is the name of the file that contains the macro (see "MACRO Subcommand" on page 9-108)
- If IMPEX is set on, simply enter the name of the macro in the appropriate environment

Include comments in an SVAA macro following the rules of the environment.

System Operator Commands

Some of the SVAA subcommands are also available to the VM system operator, enabling the operator to interact with the SVA subsystem from a host console. These "subcommands" are marked "*System Operator command*" at the beginning of their descriptions in this chapter. They are:

ATTN DEVICE
DISPLAY CHANNEL
DISPLAY DEVICE
DISPLAY NCL
VARY CHANNEL
VARY DEVICE

The ATTN and VARY subcommands provide the functions performed by the physical channel and device switches that exist on earlier model direct access storage device (DASD) controllers.

Rules for Entering Subcommands and Parameters

Follow these rules when entering SVAA subcommands and their parameters:

- Enter each parameter name only once—SVAA does not allow duplicate parameters.
- Follow each parameter name by the values for that parameter and enclose the set of values in a single pair of parentheses. You must enter a value between the parentheses—for example, DEVPERF() and DEVPERF( ) are not allowed.
- Enter each parameter value only once where multiple values are allowed—SVAA ignores duplicate values.
- Arrange the whole set of parameters in any order.
- Enclose the whole set of parameters within parentheses.
- Optionally, for ease of reading, start each new parameter on a new line (you can add additional spaces or use new lines anywhere you want).

Note: In SIB prompt mode on **VM**, before entering the # character in a parameter value (# is acceptable in certain names and task identifiers), make sure that # is not defined as the line-end character for your terminal. (If # is the line-end character, use the appropriate escape character for your terminal or turn terminal line-end off.) The same restrictions apply to all of the terminal-control characters you have defined.

Case

You can enter subcommands and parameters in either uppercase or lowercase, but SVAA treats both as uppercase. However, the *values* you enter for certain parameter variables are case sensitive; i.e., "**a**" and "**A**" are interpreted as different characters.

Whether uppercase and lowercase characters are actually interpreted differently for case-sensitive values is determined by the current setting of the SET CASE subcommand (see "SET CASE" on page 9-124). If you have issued the **SET CASE(MIXED)** subcommand, case is preserved; that is, uppercase and lowercase characters are interpreted differently. However, if **SET CASE(UPPER)**, the default, is in effect, SVAA interprets all lowercase input as uppercase.

The values you assign to SVA subsystem names, site names, channel names, device names, release identifiers, and collection identifiers are all case sensitive. A reminder of this fact appears below the “Values:” line wherever one of these parameters is described in this chapter.

To ensure that SVAA correctly interprets the lowercase characters you use for a case-sensitive name, regardless of the current setting of the SET CASE subcommand, enclose the name in matching quotation marks, either single quotes or double quotes. For example: **'subsysA'** and **"Task123"**. However, in a SEND subcommand, which may involve nested sets of quotation marks, use double quotes for one set and single quotes for the other.

All other parameter values—i.e., those without a note regarding case—are not case sensitive. Such parameters include device addresses and volsers. For example, **3A0** and **3a0** are the same unit address.

Wildcard Characters

Wildcard characters (* and ?) provide a way for you to specify multiple values for a parameter without typing all of the values individually. You use wildcard characters to indicate positions within a parameter value at which legitimate alphanumeric characters can be substituted according to the following rules:

- The asterisk (*) is the generic wildcard character; it can be replaced by any number of alphanumeric characters or special characters that are acceptable for the specific variable.

  You can separate multiple generic wildcard characters by any number of alphanumeric characters. For example:

  VOLUME(*ROLL*)

  Any volser containing the character sequence **ROLL** is included. Examples are: **PYROLL** and **ROLLFW**

- The question mark (?) is the specific wildcard character; it can be replaced by exactly one alphanumeric character. For example:

  VOLUME(PR?D*) Includes all volumes that start with **PR** and have a **D** in the fourth position.

  VOLUME(PR??D*) Includes all volumes that start with **PR** and have a **D** in the fifth position.

Leading zeros are not significant in matching wildcard specification of device addresses. For example, if you specify **3***, in a device address, devices **3000** to **3FFF**, **300** to **3FF**, **30** to **3F**, and **3** match that specification. However, if you specify **03*** in a device address, only devices **300** to **3FF**, **30** to **3F**, and **3** match that specification.

Ranges

A *range* is a set of sequential values that is defined by the first and last values in the set. Range specifications must adhere to these rules:

- The two values must be of the same data type but have different values.
- The two values must be separated by a colon.
- Except in ranges of units, the two values must contain the same number of characters. Use leading zeroes if necessary.

- Except in unit ranges, both values must contain at least one numeric (decimal) character and the numerics must be in the same position in each value. (Numerics are not required in unit ranges, so AAA:FFF is a valid range of units.)
- The values can be times, single unit addresses, volume serial numbers, or subsystem names. However, it is not necessary for all the values to represent addresses, volsers, or units, or names that exist.

  For example, you can enter a pair of volume serial numbers (volsers), each consisting of 1 to 6 alphanumeric characters, such as:

  ```
  P001:P009
  ```

- Except in time ranges, the first value must be less than the second.
- Elements in a range cannot contain wildcard characters.
- Multiple ranges within the same parameter must be separated by spaces.
- In time and date ranges, multiple ranges cannot overlap.
- Between two values, only the right-most numeric sequences can differ. All other characters must match.

Note: In ranges of volsers or device names, hexadecimal "digits" are not considered to be numeric. For example, **SYS000:SYS0FF** is not a valid range. Also, **SYS009:SYS015** is a valid range, but does not include **SYS00A** through **SYS00F**.

Examples of valid ranges:

Range	Volsers Defined
A00B0:A00B8	A00B0, A00B1, ... , A00B8
A3B2C5:A3B2C7	A3B2C5, A3B2C6, A3B2C7
2VM31C:2VM49C	2VM31C, 2VM32C, 2VM33C, ... 2VM49C
005:009	005 to 009
05:12	05 to 12

Examples of invalid ranges:

Range	Reason Invalid
A20B30:A29B30	The varying sequence (20 ... 29) is not the right-most numeric sequence.
A20B1:A20B99	The elements have differing numbers of digits.
SYS1A:SYSA2	The numerics are not in the same position and the non-numeric portions do not match.

Lists

A *list* consists of two or more parameter values or ranges separated by spaces. The entire list must be enclosed in parentheses. For example:

```
SUBSYS(SUBSYS1 SUBSYS3:SUBSYS6 SUBSYS9)
```

You can use wildcard characters (* and ?) within lists—*if* the parameter is one for which wildcard characters are allowed. For example:

```
EXCLUDEVOLUME(ABC000 ABC* TST??s TST5*)
```

Subcommand Continuation

Because many of the SVAA subcommands are longer than the typical line or record, you may need to continue a subcommand across several records. The method of continuation depends on the facilities of the execution environment:

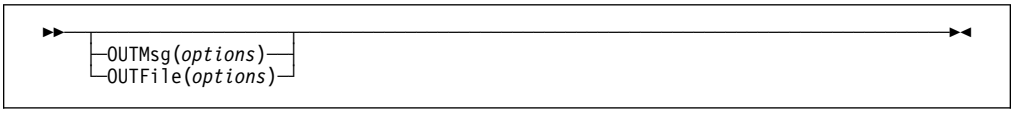
- Under REXX in CMS, use the REXX method of continuation.
- Within a REXX EXEC, there is a limitation of 512 characters for a statement. You can overcome the limitation by building your command in a series of concatenated clauses.

The examples in this chapter use hyphens to show continuation.

Redirecting Subcommand Output

SVAA sends the output of SVAA subcommands to the destination specified in the most recent SET DESTINATION subcommand. For any specific subcommand, you can override this destination by specifying a *destination* at the end of the subcommand (as shown on page 9-4).

The syntax for the *destination* is:



where *options* are any of the subparameters allowed for the OUTFILE or OUTMSG parameters of the SET DESTINATION subcommand (that is, any of *filespec*, DEFAULT, OFF, TERMINAL, or VARIABLE). See "SET DESTINATION" on page 9-125 for explanations of these subparameters.

Subcommand Descriptions

The SVAA subcommands are presented in alphabetical order beginning on page 9-10. At the beginning of each subcommand description, the subcommand is identified as a "***Subcommand of SIBADMIN***" or as a "***System Operator command***"—or both.

The description of each subcommand consists of:

- An explanation of the command's purpose
- A syntax diagram
- Descriptions of all parameters
- Examples using the subcommand

Parameter Descriptions

Immediately under each parameter name, the parameter is identified as either "***Required***", "***Optional***", or "***Conditional***". The term **Conditional** means that the parameter is neither required nor completely optional but that its use is related to other parameters. A parenthetical note explains the conditions for its use.

After a brief description of the parameter's purpose, some or all of the following types of information may appear:

Abbreviation: The uppercase portion of the parameter name as shown in the syntax box.

Values: A description of valid input, with any restrictions.

Default form: The default form for numeric input—either hexadecimal or decimal. To use the form that is *not* the default you must include the **X** or **D** prefix. (Sometimes the default form is the *only* form allowed.)

Default value: The default value, if one exists, or “None,” if there is no default.

Examples: Some valid examples of parameter entries.

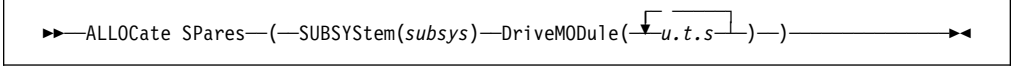
ALLOCATE SPARES Subcommand

*** *Subcommand of SIBADMIN***

The ALLOCATE SPARES subcommand moves one or more drive modules from the MAT partition to the Spares partition.

Note: To be allocated as a spare, a drive module must be in the MAT partition and in an active state (i.e., it must have a status of M.A).

ALLOCATE SPARES



Parameters

SUBSYSTEM (subsys)

Required

This parameter specifies the name of the SVA subsystem to which the spares belong.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If the subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

Default value: None

Examples:
```
SUBSYSTEM(SUB1)
SUBSYS(SUBSYS1)
SUBSYS('IBsuba1')
```

DRIVEMODULE (u.t.s)

Required

This parameter designates one or more drive modules to be moved from the MAT partition to the Spares partition.

Abbreviation: **DMOD**

Values: *u.t.s* (3 digits separated by periods) identifies a specific drive module, where:

- *u* identifies the disk array unit (0 to 3)
- *t* identifies the tray (0 to 3)
- *s* identifies the slot (0 to 7)

You can use ranges, lists, and wildcard characters.

Default value: None

Examples:
```
DRIVEMODULE(0.1.4)
DMOD(1.2.2 1.2.7 1.3.?)
DMOD(0.*)
```

Examples of ALLOCATE SPARES

Example 1.

```
ALLOCATE SPARES (-
     SUBSYS(STKSYS00)-
     DMOD(1.*) )
```

All drives with a status of M.A in disk array unit 1 will be moved to the Spares partition.

Example 2.

```
ALLOCATE SPARES (-
     SUBSYS(STKSYS00)-
     DMOD(0.0.0:0.2.7) )
```

All drives with a status of M.A in slots 0.0.0 to 0.2.7 will be moved to the Spares partition.

Example 3.

```
ALLOCATE SPARES (-
     SUBSYS(STKSYS00)-
     DMOD(0.1.3 0.1.5 0.2.? 0.3.?) )
```

All drives with a status of M.A in the following slots will be moved to the Spares partition: slots 0.1.3, 0.1.5, and all slots in trays 0.2 and 0.3.

ALTER CHANNEL Subcommand

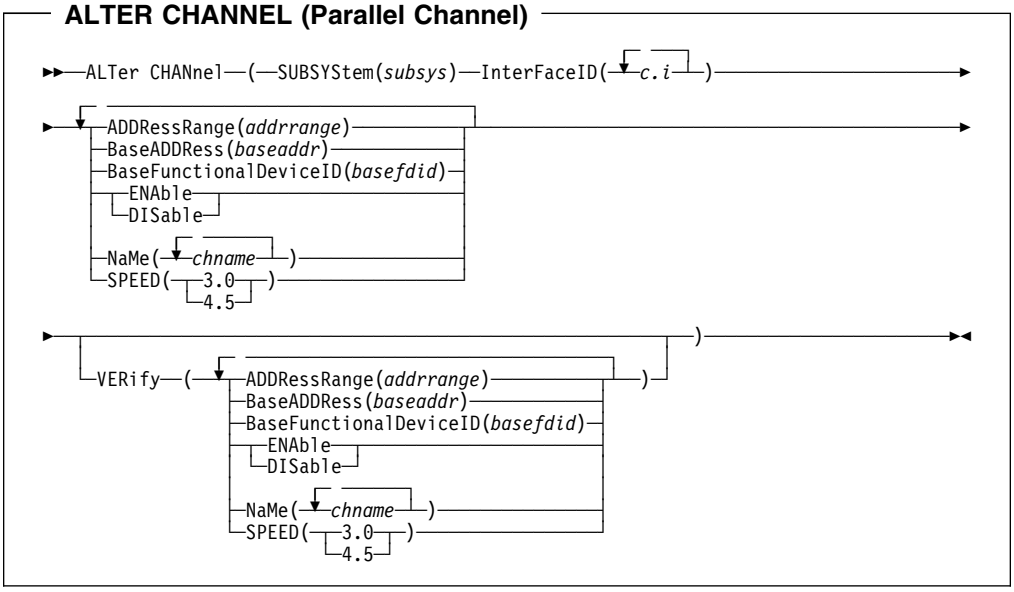
*** *Subcommand of SIBADMIN***

The ALTER CHANNEL subcommand alters the characteristics of a channel interface. The characteristics the subcommand can alter depend on the channel type:

- For a ***parallel*** (bus and tag cables) channel, you can alter one or more of six characteristics.
- For an ***ESCON*** or ***FICON*** channel, you can change only the channel interface name. To alter any other characteristics of an ESCON or FICON channel, you must use the LOP or the DOP. (Disabling the channel does not apply—an ESCON channel cannot be enabled or disabled.)
- For a ***SCSI*** or ***fibre channel*** I/O interface, you can change only the interface name.

Note: You cannot alter the characteristics of a channel interface that is used by a PPRC pair.

Parallel Channel: Syntax and Subcommand Usage



Note: Before issuing this subcommand for a parallel channel, you must vary the channel offline to all hosts.

The channel interface *must be disabled* before you can alter channel interface characteristics. You can use the subcommand's ENABLE | DISABLE parameter to ensure that this is handled properly. Whether the ENABLE | DISABLE parameter is processed first or last depends upon the existing status of the channel interface. To illustrate, here are two ways to use the parameter:

- Issue the subcommand, including the parameters to be changed, together with the DISABLE parameter.

  SVAA first processes the DISABLE parameter and then alters the channel interface characteristics as specified.

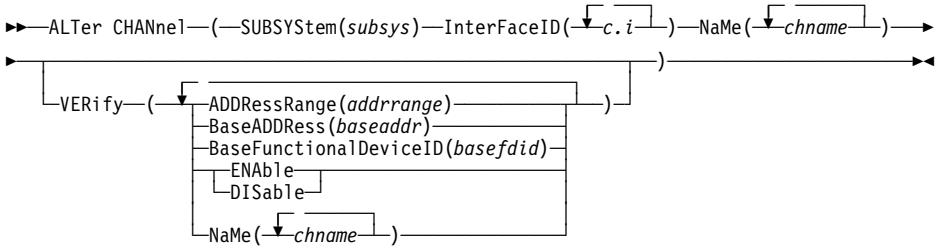
- If you believe the channel is already disabled (by the operator or a previous subcommand), issue the subcommand with the parameters to be changed, the ENABLE parameter, and VERIFY(DISABLE).

  SVAA first processes the VERIFY(DISABLE) parameter. If it verifies that the channel interface is disabled, SVAA alters the channel interface characteristics as specified and then processes the ENABLE parameter.

  See Examples 1 and 2 on page 9-17 for examples of parallel channel subcommand syntax.

ESCON or FICON Channel: Syntax and Subcommand Usage

ALTER CHANNEL (ESCON or FICON Channel)

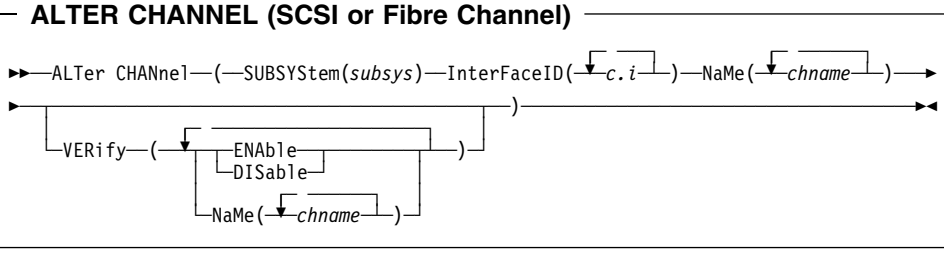


For an ESCON or FICON channel, you can change only the channel interface name (with the NAME parameter). To alter any other characteristics of an ESCON channel you must use the LOP or the DOP.

See Example 3 on page 9-18 for an example of ESCON channel subcommand syntax. See Example 4 on page 9-18 for an example of FICON channel subcommand syntax.

SCSI Bus or Fibre Channel: Syntax and Subcommand Usage

ALTER CHANNEL (SCSI or Fibre Channel)



For a SCSI bus or a fibre channel, you can change only the interface name (with the NAME parameter).

Parameters

SUBSYSTEM (subsys)

Required

This parameter specifies the name of the SVA subsystem to which the channel interface is attached.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If the subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

Default value: None

Examples:
```
SUBSYSTEM(SUB1)
SUBSYS(SUBSYS1)
```

INTERFACEID (c.i)

Required

This parameter specifies one or more (up to 32) channel interfaces of the SVA subsystem.

Abbreviation: **IFID**

Values: *c.i* (2 alphanumeric characters separated by a period) specifies a channel interface, where:

- *c* identifies one of the two clusters (0 or 1) in the subsystem
- *i* is the interface ID (A through P) associated with a specific cluster

You can use ranges and lists, but not wildcard characters.

Default value: None

Examples:
INTERFACEID(0.A) (interface A on cluster 0)
IFID(0.A:0.J) (interfaces A to J on cluster 0)
IFID(0.P) (interface P on cluster 0)

ADDRESSRANGE (addrrange)

For a parallel channel: This is one of a group of six parameters of which you must enter at least one: ADDRR, BADDR, BFDID, ENA | DIS, NM, and SPEED.

For an ESCON or FICON channel: This parameter is not allowed. Address range for an ESCON or FICON channel can be changed only at the LOP or the DOP.

For a SCSI or fibre channel: This parameter is not allowed.

This parameter defines the range of addresses to be trapped by the channel interface.

Abbreviation: **ADDRR**

Values: *addrrange* is one of the values in the Address Range columns in Table 9-1 on page 9-15.

Default form: Decimal (hexadecimal values require the X prefix)

Default value: None

Examples:
ADDRR(128) (decimal 128)
ADDRR(D'128') (decimal 128)
ADDRR(X'80') (decimal 128)

Table 9-1. *Valid configuration entries for a parallel channel*

Address Range		Base Address and BFDID values	
(hex)	**(dec)**	**(hexadecimal)**	**(decimal)**
8	**8**	00 08 10 18 20 28 30 38 40 48 50 58 60 68 70 78 80 88 90 98 A0 A8 B0 B8 C0 C8 D0 D8 E0 E8 F0 F8	00 08 16 24 32 40 48 56 64 72 80 88 96 104 112 120 128 136 144 152 160 168 176 184 192 200 208 216 224 232 240 248
10	**16**	00 10 20 30 40 50 60 70 80 90 A0 B0 C0 D0 E0 F0	00 16 32 48 64 80 96 112 128 144 160 176 192 208 224 240
20	**32**	00 20 40 60 80 A0 C0 E0	00 32 64 96 128 160 192 224
40	**64**	00 40 80 C0	00 64 128 192
80	**128**	00 80	00 128
100	**256**	00	00

BASEADDRESS (baseaddr)

For a parallel channel: This is one of a group of six parameters of which you must enter at least one: ADDRR, BADDR, BFDID, ENA | DIS, NM, and SPEED.

For an ESCON or FICON channel: This parameter is not allowed. Base address for an ESCON or FICON channel can be changed only at the LOP or the DOP.

For a SCSI or fibre channel: This parameter is not allowed. (Base address does not apply to these channel types.)

This parameter defines the base address to be trapped by the channel interface.

Abbreviation: **BADDR**

Values: *baseaddr* is one of the “Base Address and BFDID values” shown in Table 9-1.

Default form: Hexadecimal (decimal values require the D prefix)

Default value: None

Examples:

```
BADDR(40)      (decimal 64)
BADDR(X'40')   (decimal 64)
BADDR(D'64')   (decimal 64)
```

BASEFUNCTIONALDEVICEID (basefdid)

For a parallel channel: This is one of a group of six parameters of which you must enter at least one: ADDRR, BADDR, BFDID, ENA | DIS, NM, and SPEED.

For an ESCON or FICON channel: This parameter is not allowed. The base FDID for an ESCON or FICON channel can be changed only at the LOP or the DOP.

For a SCSI or fibre channel: This parameter is not allowed. (Base FDID does not apply to these channel types.)

This parameter identifies the base FDID for the channel interface.

Abbreviation: **BFDID**

Values: *basefdid* is one of the “Base Address and BFDID values” shown in Table 9-1.

Default form: Hexadecimal (decimal values require the D prefix)

Default value: None

Examples: **BFDID(40)** (decimal 64)
BFDID(X'40') (decimal 64)
BFDID(D'64') (decimal 64)

ENABLE | DISABLE

For a parallel channel: This is one of a group of six parameters of which you must enter at least one: ADDRR, BADDR, BFDID, ENA | DIS, NM, and SPEED.

For an ESCON, FICON, SCSI, or fibre channel: This parameter is not allowed. (These channel types cannot be enabled or disabled.)

This parameter enables or disables the channel interface. The channel interface must be disabled before you can alter channel characteristics (see the discussion at the beginning of the ALTER CHANNEL description).

Abbreviation: **ENA** or **DIS**

Default value: None

NAME (chname)

For a parallel channel: This is one of a group of six parameters of which you must enter at least one: ADDRR, BADDR, BFDID, ENA | DIS, NM, and SPEED.

For an ESCON, FICON, SCSI, or fibre channel: You must enter this parameter; the channel (or I/O) interface name is the only characteristic you can alter for these channel types.

This parameter specifies the names to be assigned to the channel or I/O interfaces.

Abbreviation: **NM**

Values: *chname* is a name for a channel or I/O interface. You can enter 1 to 8 characters or a null string. The following characters are accepted, even as the *first* character: a to z, A to Z, 0 to 9, $, @, #, -, _, +, &, ., / A null string, entered as **NAME('')** or **NAME("")**, sets the name to all blanks.

Note: If **SET CASE(UPPER)** is in effect, and you use lowercase characters in a channel name and don't want them converted to uppercase, you must enclose the name in matching quotes.

You can use ranges and lists, but not wildcard characters.

Notes:

1. When specifying a range, both names must contain at least one numeric (decimal) character, which must be in the right-most position in each name (as in the third example below).
2. In a range specification, hexadecimal “alphabetic digits” (A-F) are not recognized as numeric. See the rules and examples for specifying ranges (beginning on page 9-6).

Default value: None

Examples:
```
NM('1stCHAN')
NM(SYBSYS1)
NM(CHAN00:CHAN10)
```

SPEED (3.0 | 4.5)

For a parallel channel: This is one of a group of six parameters of which you must enter at least one: ADDRR, BADDR, BFDID, ENA | DIS, NM, and SPEED.

For an ESCON, FICON, SCSI, or fibre channel: This parameter is not allowed. (The speed for these channel types cannot be altered.)

This parameter sets the channel's data transfer speed in megabytes/second.

Note: A speed must be set before a parallel channel interface can be enabled.

Values: **3.0** or **4.5**

Default value: None

VERIFY (subparameters)

(Optional)

This parameter provides a way for you to insure that you are modifying the correct channel/interface and characteristics. Enter one or more of the following subparameters, together with what you expect its current value to be.

ADDRR (*addrrange*) (not allowed for a SCSI or fibre interface)
BADDR (*baseaddr*) (not allowed for a SCSI or fibre interface)
BFDID (*basefdid*) (not allowed for a SCSI or fibre interface)
ENA | DIS
NM (*chname*)
SPEED (3.0 | 4.5) (not allowed for a SCSI or fibre interface)

The VERIFY parameter compares the value you specify to the actual current channel or I/O interface value. If all subparameter values you enter match the current channel or I/O interface values, the ALTER continues. However, if the VERIFY fails, the ALTER CHANNEL subcommand is rejected.

Abbreviation: **VER**

Default value: None

Examples of ALTER CHANNEL

Example 1. Parallel channel

```
ALTER CHANNEL (-
     SUBSYS(SVASUB01)-
     IFID(0.A:0.H)-
     NM(CHAN01:CHAN08)-
     DIS-
     SPEED(4.5)-
     ADDRR(256)-
     BADDR(00)-
     BFDID(00)-
     VER(NM(CH1:CH8) SPEED(3.0)) )
```

On SVA subsystem **SVASUB01**, this subcommand selects channel interfaces **A** to **H** on cluster **0** to be altered. With the **VERIFY** parameter present, it verifies that the current channel names for the specified IFIDs are **CH1** through **CH8** and that the data transfer speed for all eight channels is currently set to **3.0**. If the VERIFY is successful, the **DIS** parameter disables the channel interfaces. It then renames the channels **CHAN01** through **CHAN08**. For all eight channels, it sets the data transfer speed to **4.5**, sets the address range to **256**, and sets the base address and base FDID to **00**.

Example 2. Parallel channel

```
ALT CHAN (-
     SUBSYS('sub02')-
     IFID(1.A)-
     ENA-
     SPEED(3.0)-
     ADDRR(64)-
     BADDR(40)-
     BFDID(40)-
     VER(DIS) )
```

On SVA subsystem **sub02**, this subcommand selects channel interface **A** on cluster **1**. It verifies that the channel interface is disabled and, if so, sets the data transfer speed to **3.0**, sets the address range to **64**, and sets the base address and base FDID to **40**. Finally, it enables the channel interface.

Example 3. ESCON channel

```
ALTER CHANNEL (-
     SUBSYS(SVASYS01)-
     IFID(0.I:0.L)-
     NM(ESCON01:ESCON04) )
```

On SVA subsystem **SVASYS01**, this subcommand selects channel interfaces **I** through **L** on cluster **0** and changes the names of those channels to **ESCON01** through **ESCON04**.

Example 4. FICON channel

```
ALTER CHANNEL (-
     SUBSYS(SVASYS04)-
     IFID(0.I:0.L)-
     NM(FICON01:FICON04) )
```

On SVA subsystem **SVASYS04**, this subcommand selects channel interfaces **I** through **L** on cluster **0** and changes the names of those channels to **FICON01** through **FICON04**.

ALTER DEVICE Subcommand

***** ***Subcommand of SIBADMIN***

The ALTER DEVICE subcommand changes the definition of one or more SVA functional devices. It has no defaults. Any parameter not specified retains its current setting.

Notes:

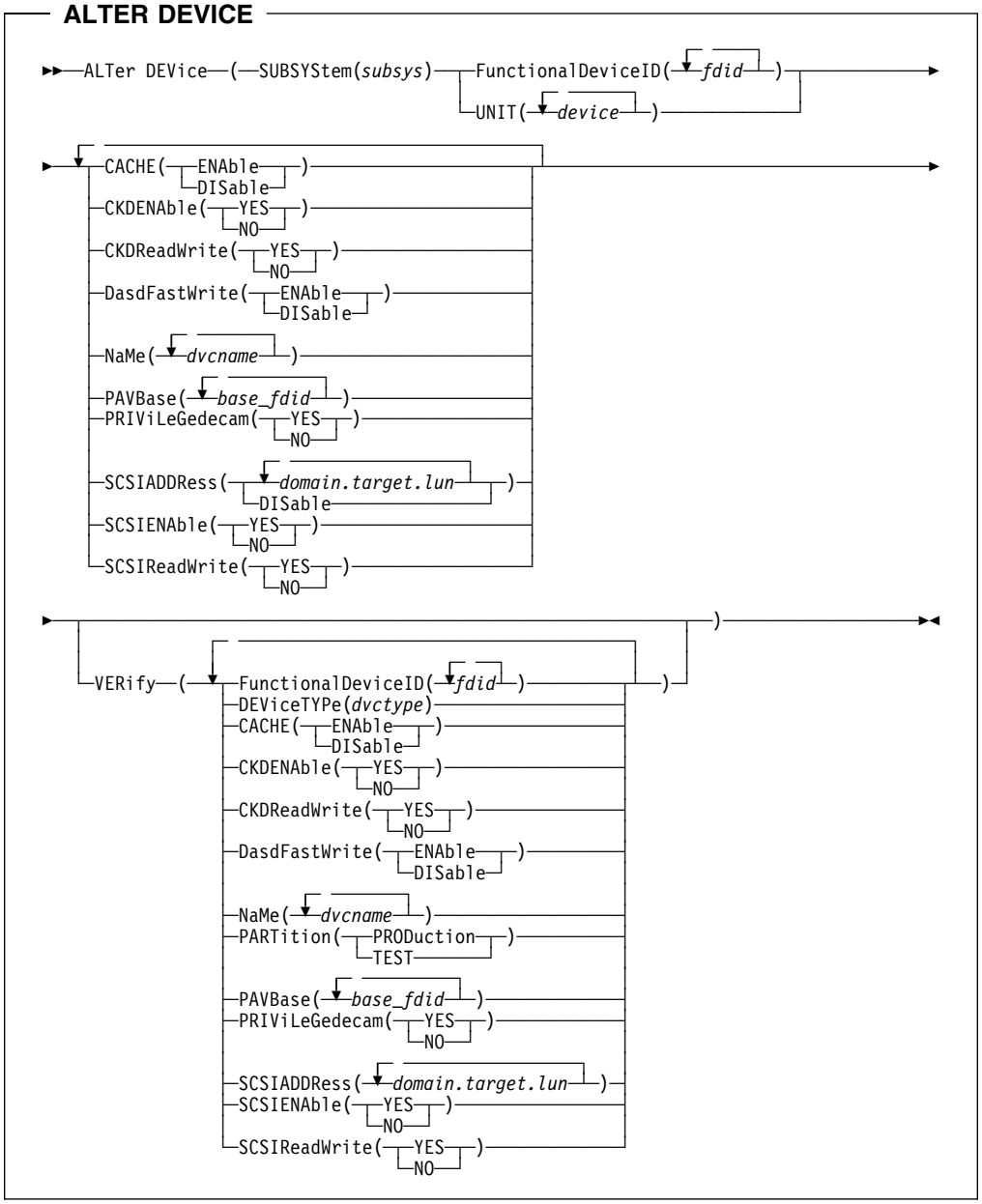
1. You cannot alter a device's FDID, device type, PAV type (Base/Alias), or partition. Instead, you must delete the device and then redefine it with the new characteristics. First, however, you must back up the data stored on the device—if you want to retain that data. Once you have redefined the device, you can restore the data. One exception: you can change the partition for all drive modules in the Test partition with the MOVE TESTPARTITION subcommand.

   If changing the device type or PAV type of a device, make sure that the change is consistent with the device definitions in HCD.

2. You cannot alter the characteristics of a device that is part of a PPRC pair.

3. You cannot alter the PRIVILEGEDECAM, SCSIENABLE, or SCSIREADWRITE values for Power PPRC Bridge devices. Also, you cannot specify a value for the SCSIADDRESS parameter for Power PPRC Bridge devices.
4. You cannot alter the CACHE, CKDENABLE, CKDREADWRITE, DASDFASTWRITE, NAME, or PRIVILEGEDECAM values for PAV Alias devices.
5. If an Alias device is reassigned to a different Base device, both must be defined within the same Virtual Control Unit (VCU); crossing VCU boundaries is not allowed.
6. The device type (3380 or 3390) of an Alias device must always match that of its related Base device. This requirement does not prevent an Alias from being reassigned to a Base device with a larger or smaller capacity, but it does prevent any attempt to reassign an Alias of one device type to a Base of a different device type. For example, a 3380-J Alias cannot be reassigned to a 3390-9 Base, but a 3390-9 Alias can be reassigned to a 3390-3 Base.

ALTER DEVICE



Parameters

SUBSYSTEM (subsys)

Required

This parameter specifies the name of the SVA subsystem with which the functional device is associated.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If the subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

Default value: None

Examples:
```
SUBSYSTEM(ICESUB01)
SUBSYS(SUBSYS_1)
SUBSYS('subabc')
```

FUNCTIONALDEVICEID (fdid)

Conditional (To identify the device, you must enter either this parameter or the UNIT parameter—*not both*.)

This parameter specifies devices by their SVA functional device identifiers (FDIDs).

Abbreviation: **FDID**

Values: *fdid* is a functional device identifier: 1 to 3 hexadecimal digits or 1 to 4 decimal digits. See the table on page 1-3 for ranges of FDID values by subsystem type.

You can use ranges and lists, but not wildcard characters.

Default form: Hexadecimal (decimal values require the D prefix)

Examples:

FDID(40)	(decimal 64)
FDID(X'40')	(decimal 64)
FDID(D'64')	(decimal 64)
FDID(10 12 2F)	(decimal 16, 18, and 47)
FDID(D'64':D'127')	(decimal 64 through 127)

UNIT (device)

Conditional (To identify the device, you must enter either this parameter or the FDID parameter—*not both*. However, if the device is not defined to the host operating system in which SVAA is running, you must use FDID.)

This parameter specifies devices as they are defined to the host in which SVAA is running.

Note: Device mapping must be on to use this parameter.

Values: *device* is a host device number: 1 to 4 hexadecimal digits. Decimal representation (D prefix) is not accepted.

You can use ranges and lists, but not wildcard characters.

Default form: Hexadecimal

Examples: **UNIT(0234)**
UNIT(X'0234')
UNIT(222:233)
UNIT(200 300)

CACHE (ENA | DIS)

Conditional (This is one of a group of nine parameters of which you must enter at least one: CACHE, CKDENA, CKDRW, DFW, NM, PRIVLG, SCSIADDR, SCSIEN, and SCSIRW.)

This parameter specifies whether caching for the device is to be enabled or disabled. The CACHE parameter setting has no effect on V2Xf operations or performance. If CACHE is specified, a warning message is issued as a reminder, but the subcommand is not rejected.

When cache is disabled, caching is still turned on, but the caching algorithm is changed. In a write operation, tracks are queued for immediate destaging to the arrays instead of being held in cache. In a read operation, a track is staged to cache and then queued for deallocation from cache as soon as the read is complete. You cannot alter this value for PAV Alias devices.

Values: **ENA** or **DIS**

Default value: None

Example: **CACHE(DIS)**

CKDENABLE (YES | NO)

Conditional (This is one of a group of nine parameters of which you must enter at least one: CACHE, CKDENA, CKDRW, DFW, NM, PRIVLG, SCSIADDR, SCSIEN, and SCSIRW.)

This parameter enables or disables host access to the CKD functional device.

Note: You ***must*** vary the device offline to all hosts before you disable the device with this parameter.

Notes:

1. You ***must*** vary the device offline to all hosts before you disable the device (**CKDENA(NO)**) with this parameter.
2. You cannot alter this value for PAV Alias devices.

Abbreviation: **CKDENA**

Values: **YES** or **NO**

Default value: None

Example: **CKDENA(YES)**

CKDREADWRITE (YES | NO)

Conditional (This is one of a group of nine parameters of which you must enter at least one: CACHE, CKDENA, CKDRW, DFW, NM, PRIVLG, SCSIADDR, SCSIEN, and SCSIRW.)

This parameter specifies whether to allow write access to the CKD functional device. **YES** allows writes; **NO** allows no writes. You cannot alter this value for PAV Alias devices.

Abbreviation: **CKDRW**

Values: **YES** or **NO**

Default value: None

Example: **CKDRW(NO)**

DASDFASTWRITE (ENA | DIS)

Conditional (This is one of a group of nine parameters of which you must enter at least one: CACHE, CKDENA, CKDRW, DFW, NM, PRIVLG, SCSIADDR, SCSIEN, and SCSIRW.)

This parameter only provides 3990 compatibility; its setting has no effect on SVA operations or performance. You cannot alter this value for PAV Alias devices. If DASDFASTWRITE is specified for a V2Xf subsystem, a warning message is issued as a reminder, but the subcommand is not rejected.

Abbreviation: **DFW**

Values: **ENA** or **DIS**

Default value: None

Example: **DFW(DIS)**

NAME (dvcname)

Conditional (This is one of a group of nine parameters of which you must enter at least one: CACHE, CKDENA, CKDRW, DFW, NM, PRIVLG, SCSIADDR, SCSIEN, and SCSIRW.)

This parameter specifies the names to be assigned to the devices identified by the FDID or UNIT parameter. You cannot alter this value for PAV Alias devices.

Abbreviation: **NM**

Values: *dvcname* is a name for a functional device. You can enter 1 to 8 characters or a null string. The following characters are accepted, even as the *first* character: a to z, A to Z, 0 to 9, $, @, #, -, _, +, &, ., / A null string, entered as **NAME('')** or **NAME("")**, sets the name to all blanks.

Note: If **SET CASE(UPPER)** is in effect, and you use lowercase characters in a channel name and don't want them converted to uppercase, you must enclose the name in matching quotes.

You can use ranges and lists, but not wildcard characters.

Notes:

1. When specifying a range, both names must contain at least one numeric (decimal) character, which must be in the right-most position in each name (as in the third example below).
2. In a range specification, hexadecimal “alphabetic digits” (A-F) are not recognized as numeric. See the rules and examples for specifying ranges (beginning on page 9-6).

Default value: None

Examples:
```
NAME(PAYROLL)
NM('financ00')
NM(EMPLFIL1:EMPLFIL4)
NM(PROJ71 PROJ112 PROJ149)
NM("")
```

PAVBASE (base_fdid)

Optional for Alias devices; invalid for Base devices

This parameter specifies the Base device to which this Alias is to be re-assigned. PAVBASE cannot specify an Alias device.

An Alias device can be reassigned to a different Base device in three ways:

1. automatically by the Workload Manager (WLM) component of an OS/390 or z/OS operating system
2. manually by using the ALTER DEVICE subcommand
3. manually by using the DEFINE DEVICE subcommand

To reassign an Alias device to a different Base device using the ALTER DEVICE subcommand, specify the FDID of the new Base (which must previously exist and can be online or offline) in the PAVBASE parameter of the subcommand. To verify the current PAV relationship before reassigning the Alias, add the VERIFY parameter and specify the FDID of the old Base in the PAVBASE sub-parameter.

Abbreviation: **PAVB**

Values: *base_fdid* is the same as a functional device identifier: 1 to 3 hexadecimal digits (0 to FFF).

Ranges, lists, and wildcard characters cannot be used

Default value: None

Example: **PAVB(411)**

PRIVILEGEDECAM (YES | NO)

Conditional (This is one of a group of nine parameters of which you must enter at least one: CACHE, CKDENA, CKDRW, DFW, NM, PRIVLG, SCSIADDR, SCSIEN, and SCSIRW.)

This parameter specifies whether the functional device is eligible for use as the transmission path for Category 1-restricted SVAA Extended Control and Monitoring (ECAM) messages to the SVA subsystem.

Note: For **PRIVLG(YES)** to take effect, the device must also be designated an ECAM device with the SET ECAMDEVICE subcommand (see page 9-128 for details).

You can specify **NO** for *most* devices—to limit the number of privileged ECAM devices—but you must specify **PRIVLG(YES)** for *at least one* device.

The use of privileged ECAM devices is normally limited to specific individuals (for example, the Storage Administrator, a Systems Programmer, or an Operator). For security reasons, do not specify **YES** for devices that can be accessed either as attached devices, or in write mode as full-pack minidisks, by the general user community.

Note: You cannot specify **PRIVLG(YES)** for Power PPRC Bridge devices. You cannot alter this value for PAV Alias devices.

Abbreviation: **PRIVLG**

Values: **YES** or **NO**

Default value: None

Example: **PRIVLG(YES)**

SCSIADDRESS (domain.target.lun | DISable)

Conditional (This is one of a group of nine parameters of which you must enter at least one: CACHE, CKDENA, CKDRW, DFW, NM, PRIVLG, SCSIADDR, SCSIEN, and SCSIRW.)

This parameter either assigns or removes the SCSI address identifier for a functional device. Entering a SCSI address (in the form of *domain.target.lun*) assigns it to the device. Entering **DISable** removes the current SCSI address assignment from the device.

Note: You cannot specify a SCSIADDRESS for Power PPRC Bridge devices.

Abbreviation: **SCSIADDR**

Values: *domain.target.lun* or **DISable**

domain.target.lun (3 decimal numbers separated by periods) specifies a SCSI address, where:

domain	is the logical domain address (1 to 2 decimal digits)
target	is the SCSI target identifier (1 to 2 decimal digits)
lun	is the logical unit number (LUN) for the SCSI physical device (1 to 3 decimal digits)

Default value: None

Examples:
```
SCSIADDRESS(0.8.15)
SCSIADDR(1.03.03 0.07.12)
SCSIADDR(DIS)
```

SCSIENABLE (YES | NO)

Conditional (This is one of a group of nine parameters of which you must enter at least one: CACHE, CKDENA, CKDRW, DFW, NM, PRIVLG, SCSIADDR, SCSIEN, and SCSIRW.)

This parameter enables or disables host access to the SCSI functional device.

Note: You cannot specify SCSIENABLE(YES) for Power PPRC Bridge devices.

Abbreviation: **SCSIENA**

Values: **YES** or **NO**

Default value: None

Example: **SCSIENA(NO)**

SCSIREADWRITE (YES | NO)

Conditional (This is one of a group of nine parameters of which you must enter at least one: CACHE, CKDENA, CKDRW, DFW, NM, PRIVLG, SCSIADDR, SCSIEN, and SCSIRW.)

This parameter specifies whether write access to the SCSI functional device is to be allowed. **YES** allows writes; **NO** allows no writes.

Note: You cannot specify SCSIREADWRITE(YES) for Power PPRC Bridge devices.

Abbreviation: **SCSIRW**

Values: **YES** or **NO**

Default value: None

Example: **SCSIRW(YES)**

VERIFY (subparameters)

Optional

This parameter provides a way for you to insure that you are modifying the correct devices and values. Enter one or more of the following subparameters, together with what you expect its current value to be.

FDID (*fdid*)
DEVTYP (*dvctype*)
CACHE (ENA | DIS)
CKDENA (YES | NO)
CKDRW (YES | NO)
DFW (ENA | DIS)
NM (*dvcname*)
PART (PROD | TEST)
PAVB (*base_fdid*)
PRIVLG (YES | NO)
SCSIADDR (*domain.target.lun* | DIS)
SCSIEN (YES | NO)
SCSIRW (YES | NO)

Notes:

1. To use VERIFY FDID you must specify the devices in the subcommand with the UNIT parameter (see example below).
2. You can verify the current DEVICETYPE and PARTITION for the devices, although you cannot alter these values with the ALTER DEVICE subcommand.

The VERIFY parameter compares the values you specify to the actual current values for the device. If all subparameter values you enter match the current values, the ALTER continues. However, if the VERIFY fails, the ALTER DEVICE subcommand is rejected.

Abbreviation: **VER**

Default value: None

Examples of ALTER DEVICE

Example 1.

```
ALTER DEVICE (-
     SUBSYS(SVASYS02)-
     FDID(D'128':D'137' D'139')-
     CKDRW(YES) )
```

This subcommand allows write access to CKD functional devices **128** through **137** and also **139** in SVA subsystem **SVASYS02**.

Example 2.

```
ALT DEV (-
     SUBSYS('svasub1')-
     UNIT(22B)-
     PRIVLG(YES)-
     VER(FDID(2B) PRIVLG(NO)) )
```

This subcommand first verifies that functional device **2B** in SVA subsystem **svasub1** is defined to the host system as unit **022B** and is not currently defined as a privileged ECAM device. If the VERIFY succeeds, the subcommand redefines functional device **2B** as a privileged ECAM device.

Example 3.

```
ALT DEV (-
     SUBSYS(SVASUBA)-
     UNIT(22A:22F)-
     NM(SPECS01:SPECS06)-
     VER(FDID(2A:2F)) )
```

This subcommand first verifies that functional devices **2A** through **2F** in subsystem **SVASUBA** are defined to the host system as units **022A** through **022F**. If the VERIFY succeeds, the subcommand names the devices **SPECS01** through **SPECS06**.

Example 4.

```
ALT DEV (-
     SUBSYS(SVASUB3)-
     FDID(7FF)-
     PAVB(701)-
     VER(PAVB(700)) )
```

On SVA subsystem **SVASUB3** this subcommand verifies that functional device **7FF** as an Alias device that is currently related to functional device **700**, a Base device. If verification is successful, Alias **7FF** is reassigned to functional device **701**, a previously-existing Base device.

ALTER SUBSYSTEM Subcommand

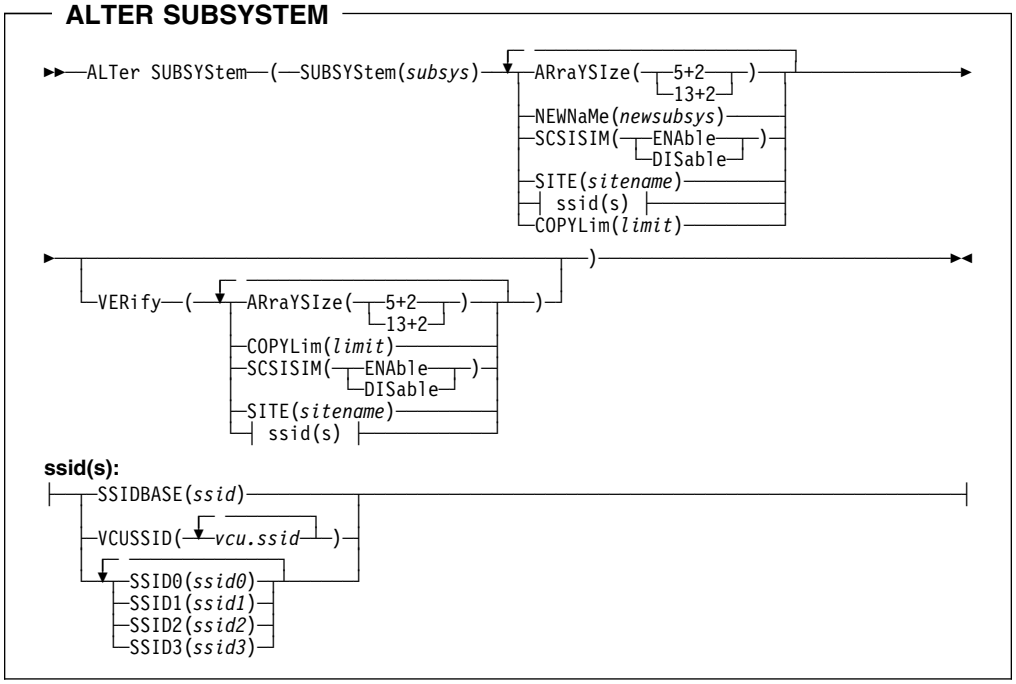
***** ***Subcommand of SIBADMIN***

The ALTER SUBSYSTEM subcommand enables you to:

- Change (only on the 9393 or 9500 SVA) the existing array size setting for the subsystem: 5+2 or 13+2. **The only array size available on the V2X, V2X2, V2Xf, or V960 SVA is 13+2.**
- Change an existing SVA subsystem name
- Change your site name
- Enable service information messages (SIMs) for SCSI devices
- Assign subsystem IDs (SSIDs) for emulated 3990 controllers
- Designate the total number of concurrent PPRC pair synchronizations

Notes:

1. Two individual parameters (SSIDBASE and VCUSSID) and a group of parameters (SSID0 through SSID3) are available for assigning SSIDs. These parameters are mutually exclusive; you can use only one method—either SSIDBASE, VCUSSID, or the SSID0 through SSID3 group.
2. You *cannot* redefine an SSID on a subsystem on which PPRC is enabled. You must first have your hardware support representative disable PPRC capability for the subsystem. After you have redefined the SSID, PPRC can be re-enabled for the subsystem.



Parameters

In addition to the SUBSYSTEM parameter, you must enter at least one of: ARYSI, NEWNM, SCSISIM, SITE, SSIDBASE, VCUSSID, SSID0, SSID1, SSID2, or SSID3.

SUBSYSTEM (subsys)

Required

This parameter specifies the existing name for the SVA subsystem.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If the subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

Default value: None

Examples:
```
SUBSYS(SVASYS2)
SUBSYS('icesuba1')
```

ARRAYSIZE (5+2 | 13+2)

Optional

This parameter specifies the number of drive modules to be used in forming a new array (user data drives + redundancy data drives). This does not affect existing arrays.

Abbreviation: **ARYSI**

Values: **5+2** or **13+2**

New arrays will have a drive module capacity equivalent to the first value plus the second value—for example, 5+2 indicates a capacity equivalent to 5 user data drives and 2 redundancy drives.

Note: You can form a 5+2 array only on the 9393 or 9500 SVA—not on earlier subsystems or on the V2X or V960 SVA.

Default value: None

Example: **ARYSI(13+2)**

COPYLIM (limit)

Optional

This parameter specifies the total number of concurrent PPRC pair synchronzations per SVA subsystem. The total includes the number of pairs being established with MODE(COPY) as well as the number of formerly suspended pairs being re-established with MODE(RESYNC).

Abbreviation: **COPYL**

Values: *limit* is the total number of concurrent PPRC pair synchronzations per SVA subsystem: 1 to 2 decimal digits from 0 to 32.

A value of 0 allows the SVA subsystem to optimize synchronization of four PPRC pairs established between a primary and secondary subsystem.

A non-zero value specifies the number of background copy sessions allowed to execute concurrently while synchronizing primary and secondary device pairs.

You cannot use ranges, lists, or wildcard characters.

Note: Changes to **COPYLIM** do not necessarily take effect immediately. If the value of **COPYLIM** is increased, new synchronizations are immediately added up to the new value. However, if the value is decreased, current synchronizations are ***not*** immediately removed. As pairs complete synchronization, the total number of synchronizations is gradually reduced down to the new value.

Default value: 0

Examples: **COPYLIM(4)**

NEWNAME (newsubsys)

Optional

This parameter specifies the new name to be assigned to the SVA subsystem.

Note: Within your site, each SVA subsystem name must be unique.

Abbreviation: **NEWNM**

Values: *newsubsys* is a new subsystem name, 1 to 8 characters long. The following characters are accepted, even as the *first* character: a to z, A to Z, 0 to 9, $, @, #, -, _, +, &, ., /

Note: If **SET CASE(UPPER)** is in effect, and you use lowercase characters in the name and don't want them converted to uppercase, you must enclose the name in matching quotes.

Default value: None

Examples:
```
NEWNAME(1SUBSYS)
NEWNM(SUBSYS_2)
NEWNM('subsys1')
```

SCSISIM (ENAble | DISable)

Optional

This parameter specifies whether service information messages (SIMs) from SCSI devices are to be enabled or disabled.

Values: **ENA** or **DIS**

Default value: None

Example: **SCSISIM(ENA)**

SITE (sitename)

Optional

You can use this parameter to identify your company, organization, or location. Use this name when you call StorageTek Software Support

Values: *sitename* is a name of your choosing. You can enter 1 to 8 characters or a null string. The following characters are accepted, even as the *first* character: a to z, A to Z, 0 to 9, $, @, #, -, _, +, &, ., / A null string, entered as **SITE('')** or **SITE("")**, sets the name to all blanks.

Note: If **SET CASE(UPPER)** is in effect, and you use lowercase characters in the site name and don't want them converted to uppercase, you must enclose the name in matching quotes.

Default value: None

Examples: **SITE("AcmeBank")**
SITE(REMOTE1)

SSIDBASE (ssid)

Optional. If you enter this parameter, you cannot use the VCUSSID parameter or the SSID0 through SSID3 parameters.

This parameter enables you to assign SSIDs to all virtual control units (VCUs) in the subsystem by entering one SSID—for VCU 0 (the "base" SSID). Consecutive hexadecimal SSIDs are assigned to all VCUs in ascending order, beginning with the base SSID.

Notes:

1. This parameter changes any existing SSIDs that are different from the sequence of SSIDs defined by the **SSIDBASE** value.
2. You must assign a ***unique*** SSID to each VCU in your installation.
3. The actual number of SSIDs is governed by the maximum number of virtual control units supported by the subsystem (see "Functional Differences between Subsystems" on page 1-3).
4. You *cannot* redefine an SSID on a subsystem on which PPRC is enabled. You must first have your hardware support representative disable PPRC capability for the subsystem. Then, after you have redefined the SSID, PPRC can be re-enabled for the subsystem.

Values: 4 hexadecimal digits ranging from 0001 to FFFC.

You cannot use ranges or wildcard characters.

Note: The SSID value specified must not allow the last SSID to exceed FFFF. For example, on a subsystem that supports 16 SSIDs, FFF0 is the highest valid entry for SSIDBASE.

Default form: Hexadecimal

Default value: None

Example: **SSIDBASE(00F0)**

VCUSSID (vcu.ssid ...)

Optional. If you enter this parameter, you cannot use the SSIDBASE parameter or the SSID0 through SSID3 parameters.

Each SSID (subsystem identifier) is used to identify a different VCU (a 3990 controller emulated by the SVA subsystem). This parameter enables you to assign SSIDs to one or more VCUs individually.

Notes:

1. You must assign a ***unique*** SSID to each VCU in your installation.
2. The actual number of SSIDs is governed by the maximum number of virtual control units supported by the subsystem (see "Functional Differences between Subsystems" on page 1-3).
3. You *cannot* redefine an SSID on a subsystem on which PPRC is enabled. You must first have your hardware support representative disable PPRC capability for the subsystem. Then, after you have redefined the SSID, PPRC can be re-enabled for the subsystem.

Values: Each *vcu.ssid* entry assigns an SSID to a VCU, where:

vcu is a 1- or 2-digit (decimal) virtual control unit number.
ssid is a unique 4-digit (hexadecimal) subsystem identifier ranging from 0001 to FFFF.

You cannot use ranges or wildcard characters.

Default value: None

Examples:
VCUSSID(0.0010)
VCUSSID(13.00F1 14.00F2 5.00E5)

SSID0 through SSID3 (ssid0 through ssid3)

Optional. If you enter any of these four parameters, you cannot use the SSIDBASE or VCUSSID parameter.

Note: The VCUSSID and SSIDBASE parameters are replacements for the SSID0, SSID1, SSID2 and SSID3 parameters. Therefore, SSID0, SSID1, SSID2 and SSID3 will be removed from this document with the next release of SVAA.

Each SSID (subsystem identifier) is used to identify a different VCU (a 3990 controller emulated by the SVA subsystem).

Notes:

1. You must assign a ***unique*** SSID to each VCU in your installation.
2. You *cannot* redefine an SSID on a subsystem on which PPRC is enabled. You must first have your hardware support representative disable PPRC capability for the subsystem. Then, after you have redefined the SSID, PPRC can be re-enabled for the subsystem.

Values: *ssid0* through *ssid3* are unique, four-digit (hexadecimal) subsystem identifiers ranging from 0001 to FFFF. Decimal representation (D prefix) is not accepted.

Default form: Hexadecimal

Default value: None

Examples:
```
SSID0(00F0)
SSID1(X'00F1')
```

VERIFY (subparameters)

Optional

This parameter provides a way for you to insure that you are modifying the correct subsystem value. The VERIFY parameter compares the values you specify to the actual current values for the SVA subsystem. If all subparameter values you enter match the current values, the ALTER continues. However, if the VERIFY fails, the ALTER SUBSYSTEM subcommand is rejected.

Enter one or more of the following subparameters (exceptions: see Notes below), together with what you expect its current value to be.

ARYSI (5+2 | 13+2)
COPYLIM (*limit*)
SCSISIM (ENA | DIS)
SITE (*sitename*)
SSIDBASE (*ssid*)
VCUSSID (*vcu.ssid ...*)
SSID0 (*ssid0*)
SSID1 (*ssid1*)
SSID2 (*ssid2*)
SSID3 (*ssid3*)

Notes:

1. The three forms of specifying SSIDs are mutually exclusive. You can enter either SSIDBASE or VCUSSID, or one or more of SSID0 through SSID3.
2. There must be match between the SSID-related subparameters (SSIDBASE, VCUSSID, SSID0, SSID1, SSID2, or SSID3) you specify in the VERIFY parameter, and the SSID-related parameters you specify in the non-VERIFY portion of the ALTER SUBSYSTEM subcommand.

   To illustrate, here are some correct and incorrect examples.

   Correct examples:

   ```
   ALT SUBSYS (SUBSYS(XYZ) SSIDBASE(4000) VERIFY(SSIDBASE(5000) ) )
   ALT SUBSYS (SUBSYS(XYZ) VCUSSID(0.1000) VERIFY(VCUSSID(0.2000) ) )
   ALT SUBSYS (SUBSYS(XYZ) SSID1(1000) SSID3(3000)-
        VERIFY(SSID1(4000) SSID3(6000) ) )
   ```

   Incorrect examples:

   ```
   ALT SUBSYS (SUBSYS(XYZ) SSIDBASE(4000) VERIFY(VCUSSID(1.5000) ) )
   ALT SUBSYS (SUBSYS(XYZ) VCUSSID(0.1000) VERIFY(SSID2(2000) ) )
   ALT SUBSYS (SUBSYS(XYZ) SSID1(1000) SSID3(3000) VERIFY(SSIDBASE(9000) ) )
   ALT SUBSYS (SUBSYS(XYZ) SSID1(1000) VERIFY(SSID3(3000) ) )
   ```

Abbreviation: `VER`

Default value: None

Examples:
```
VERIFY(ARYSI(13+2) )
VER(SSIDBASE(0010) )
```

Examples of ALTER SUBSYSTEM

Example 1.

```
ALTER SUBSYSTEM (-
     SUBSYSTEM(IBSUB01)-
     ARRAYSIZE(13+2)-
     SSIDBASE(0400) )
```

For SVA subsystem **IBSUB01**, this subcommand sets the array size for the subsystem to **13+2** (newly formed arrays will have a capacity equivalent to 13 user data drives and 2 redundancy data drives). SSIDs are assigned to all VCUs (emulated 3990 controllers) in the subsystem beginning with **0400** for VCU 0.

Example 2.

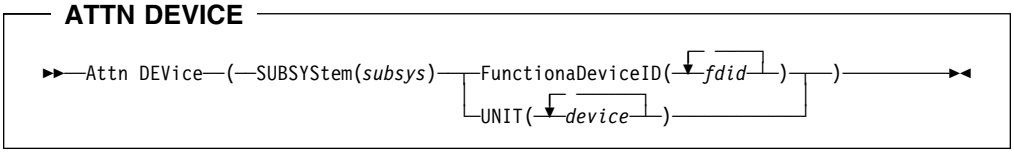
```
ALT SUBSYS (-
     VER(SITE('MainHQ') ARYSI(13+2) )-
     SUBSYS(SUBSYSA1)-
     ARYSI(5+2)-
     NEWNM(ICESUBA1) )
```

This subcommand first verifies that, for SVA subsystem **SUBSYSA1**, the site name is defined as **MainHQ** and that the current ARRAYSIZE setting for the subsystem is **13+2**. If the VERIFY succeeds, the subcommand renames the subsystem **ICESUBA1** and sets the array size for the subsystem to **5+2**.

ATTN DEVICE Subcommand

* ***Subcommand of SIBADMIN***
* ***System Operator command***

The ATTN DEVICE subcommand initiates a state-change interrupt for specific functional devices. State-change interrupts are sent to the interface in each path group and all interfaces without path groups formed which are associated with a device. If the host operating system misses a “device end” from the SVA subsystem and experiences a hang condition, you can issue this subcommand in an attempt to free the condition. You cannot send attention interrupts to PAV Alias devices.



Parameters

SUBSYSTEM (subsys)

Required

This parameter specifies the name of the SVA subsystem with which the functional device is associated.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If the subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

Default value: None

Examples:
```
SUBSYSTEM('icesubA')
SUBSYS(SUBSYS1)
```

FUNCTIONALDEVICEID (fdid)

Conditional (To identify the device, you must enter either this parameter or the UNIT parameter—*not both*.)

This parameter specifies devices by their SVA FDIDs.

Abbreviation: **FDID**

Values: *fdid* is a functional device identifier: 1 to 3 hexadecimal digits or 1 to 4 decimal digits. See the table on page 1-3 for ranges of FDID values by subsystem type.

You can use ranges and lists, but not wildcard characters.

Default form: Hexadecimal (decimal values require the D prefix)

Examples:

FDID(40)	(decimal 64)
FDID(D'64')	(decimal 64)
FDID(21 22 2D)	(decimal 33, 34, and 45)
FDID(10:12)	(decimal 16 through 18)

UNIT (device)

Conditional (To identify the device, you must enter either this parameter or the FDID parameter—*not both*. However, if the device is not defined to the host operating system in which SVAA is running, you must use FDID.)

This parameter specifies devices as they are defined to the host in which SVAA is running.

Note: Device mapping must be on to use this parameter.

Values: *device* is a host device number: 1 to 4 hexadecimal digits.

Decimal representation (D prefix) is not accepted.

You can use ranges and lists, but not wildcard characters.

Default form: Hexadecimal

Examples:
```
UNIT(234)
UNIT(X'0234')
UNIT(222:233)
UNIT(200 300)
```

Examples of ATTN DEVICE

Example 1.

```
ATTN DEVICE (-
     SUBSYSTEM(ICESUB1)-
     UNIT(123) )
```

This subcommand initiates a state-change interrupt for all interfaces associated with the functional device (in subsystem **ICESUB1**) that is defined to the host as unit **123**.

Example 2.

```
A DEV (-
     SUBSYS('subsysA')-
     FDID(21 23 A1:A4) )
```

This subcommand initiates a state-change interrupt for all interfaces associated with functional devices **21**, **23**, and **A1** through **A4** in subsystem **subsysA**.

DEFINE DEVICE Subcommand

**** Subcommand of SIBADMIN***

The DEFINE DEVICE subcommand defines the characteristics of a functional device. You can define up to 4096 devices in a V2X SVA, but only 1024 in earlier SVA subsystems. (These numbers are lower if any 3390-9 devices are defined.)

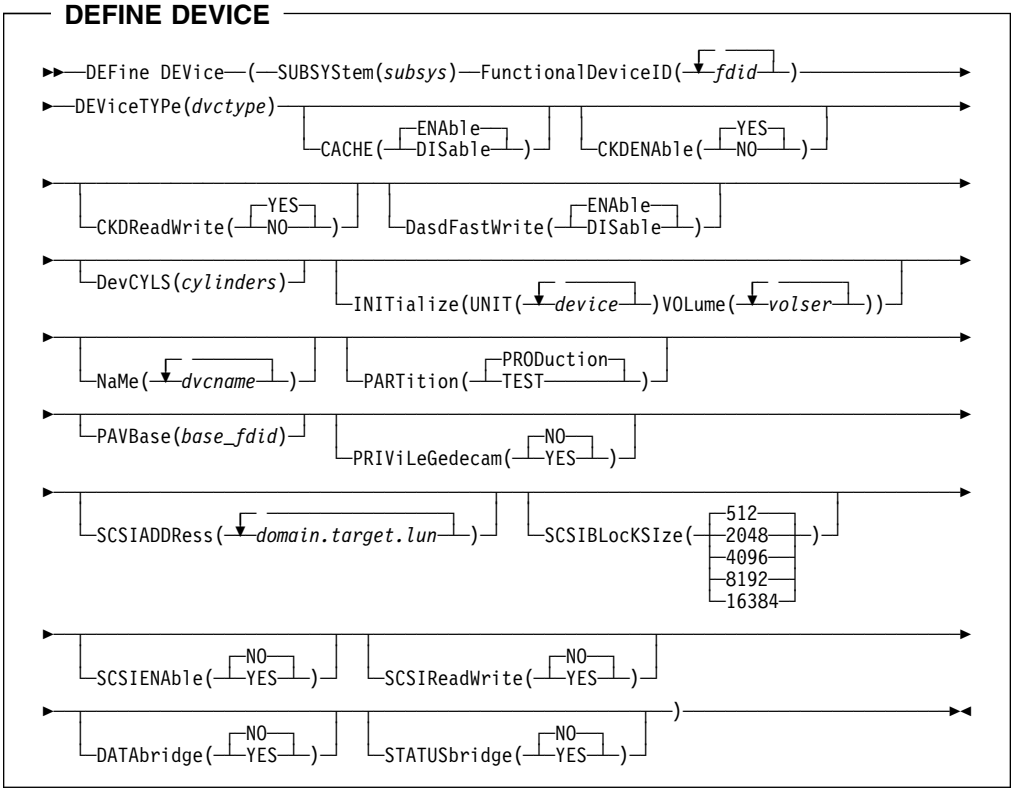
Notes:

1. In VM, a newly defined device may have an operating system status of BOXED. To gain access to a boxed device, you may have to vary it offline and then online again. (The VM BOXED status can also affect OS/390 operations when OS/390 is running under VM.)
2. Once you have defined a device, you cannot alter its device type, FDID, PAV type (Base/Alias), or partition. Instead, you must delete the device and then redefine it with the new characteristics. If changing the device type or PAV type, make sure that the change is consistent with the device definitions in HCD.

   Important!

   Always keep your V2Xf Base and Alias device definitions consistent with your HCD.

   It is extremely important to always keep your V2Xf Base and Alias device definitions your HCD definitions. See “PAV Configuration Considerations” on page 2-15 for more information.
3. A PAV Base device must be defined before any of its related Alias devices can be defined. You cannot define a Base and its related Alias devices in a single define operation.
4. A Base device is not required to have any related Alias devices. However, if the Base device does have aliases, all Alias devices must be defined within the same Virtual Control Unit (VCU); crossing VCU boundaries is not allowed. Since a VCU has a maximum of 256 devices, a single Base device can be defined with up to 255 Aliases, or 128 Base devices can be defined with one Alias each, etc.
5. Initialization of an Alias device during the device definition process is not allowed.
6. When defining an Alias device, any specified values for the CACHE, CKDENABLE, CKDREADWRITE, DASDFASTWRITE, and PRIVILEGEDECAM parameters are ignored. The values of the related Base device are instead implicitly assigned to the Alias.
7. The NAME parameter cannot be specified when defining an Alias device.



Parameters

SUBSYSTEM (subsys)

Required

This parameter specifies the name of the SVA subsystem for the devices to be defined.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If the subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

Default value: None

Examples:
```
SUBSYSTEM(SUB1)
SUBSYS(SUBSYS1)
SUBSYS('icebox1')
```

FUNCTIONALDEVICEID (fdid)

Required

This parameter specifies the functional device identifiers (FDIDs) of the devices to be defined.

Abbreviation: **FDID**

Values: *fdid* is a functional device identifier: 1 to 3 hexadecimal digits or 1 to 4 decimal digits. See the table on page 1-3 for ranges of FDID values by subsystem type.

FDID can be a range or list of Base devices, a range or list of Alias devices, but **cannot** be a range or list of Base and Alias devices intermixed together in a single DEFINE DEVICE subcommand.

Default form: Hexadecimal (decimal values require the D prefix)

Examples:
```
FDID(40)      (decimal 64)
FDID(X'40')   (decimal 64)
FDID(D'64')   (decimal 64)
```

DEVICETYPE (dvctype)

Required

This parameter specifies the type of functional device to be emulated.

Note: The device type (3380 or 3390) of an Alias device must always match that of its related Base device. This requirement does not prevent an Alias from being defined to a Base device with a larger or smaller capacity, but it does prevent any attempt to define an Alias of one device type to a Base of a different device type. For example, a 3380-J Alias cannot be defined and related to a 3390-9 Base, but a 3390-9 Alias can be defined and related to a 3390-3 Base.

Abbreviation: **DEVTYP**

Values: *dvctype* identifies the device type and model descriptor and consists of 5 to 6 alphanumeric characters.

Valid entries are: **3380J**, **3380K**, **3380KE**, **33901**, **33902**, **33903**, **33909**, **SCSIA** (3390-3 with SCSI format), and **SCSIB** (3390-9 with SCSI format).

Default value: None

Examples:
```
DEVICETYPE(3380J)
DEVTYP(33901)
DEVTYP(SCSIA)
```

CACHE (ENA | DIS)

Optional

This parameter specifies whether caching for the functional device is to be enabled or disabled. This parameter setting has no effect on V2Xf operations or performance. If CACHE is specified, a warning message is issued as a reminder, but the subcommand is not rejected.

When cache is disabled, caching is still turned on, but the caching algorithm is changed. In a write operation, tracks are queued for immediate destaging to the arrays instead of being held in cache. In a read operation, a track is staged to cache and then queued for deallocation from cache as soon as the read is complete.

Values: **ENA** or **DIS**

Default value: **ENA**

Example: **CACHE(DIS)**

CKDENABLE (YES | NO)

Optional

This parameter enables or disables host access to the CKD functional device.

Abbreviation: **CKDENA**

Values: **YES** or **NO**

Default value: **YES**

Example: **CKDENA(NO)**

CKDREADWRITE (YES | NO)

Optional

This parameter specifies whether to allow write access to the CKD functional device. **YES** allows writes; **NO** allows no writes.

Abbreviation: **CKDRW**

Values: **YES** or **NO**

Default value: **YES**

Example: **CKDRW(NO)**

DASDFASTWRITE (ENA | DIS)

Optional

This parameter only provides 3990 compatibility; its setting has no effect on SVA operations or performance. This parameter setting has no effect on V2Xf operations or performance. If DASDFASTWRITE is specified, a warning message is issued as a reminder, but the subcommand is not rejected.

Abbreviation: **DFW**

Values: **ENA** or **DIS**

Default value: **ENA**

Example: **DFW(DIS)**

DATABRIDGE (NO | YES)

Optional

This parameter specifies whether the CKD functional device is to be defined as a Power PPRC Data Bridge. **NO** does not define the device as a Power PPRC Data Bridge. **YES** does define the device as a Power PPRC Data Bridge, and the device type must be specified as 33909 in this case.

Abbreviation: **DATA**

Values: **NO** or **YES**

Default value: **NO**

Example: **DATA(YES)**

DEVCYLS (cylinders)

Optional

This parameter specifies the number of cylinders to use when defining a CKD functional device as a FlexVolume or as a Large Volume. Use of the DEVCYLS parameter is subject to the following requirements:

- DEVCYLS is supported only on V2X, V2X2, and V2Xf subsystems.
- DEVCYLS cannot be specified with the DATABRIDGE or STATUSBRIDGE, parameters since Large Volumes and FlexVolumes cannot be defined as PPRC Bridge devices.

- DEVCYLS cannot be specified with the PAVBASE parameter.
- DEVCYLS cannot be specified when the DEVICETYPE parameter specifies a SCSI device type (SCSIA or SCSIB) since Large Volumes and FlexVolumes cannot be defined as SCSI devices.
- Since SCSI devices are not supported on V2Xf subsystems, DEVCYLS cannot be specified with the SCSIADDRESS, SCSIBLOCKSIZE, SCSIENABLE, or SCSIREADWRITE parameters on a V2Xf subsystem.
- Large Volumes can only be defined as 3390-9 CKD devices with 32760 cylinders, so DEVICETYPE(33909) and DEVCYLS(32760) must be specified when defining a Large Volume.
- FlexVolumes can be defined as 3380 or 3390 CKD devices subject to the following further requirements:
  - DEVICETYPE(33901) or DEVICETYPE(33902) cannot be specified when defining a FlexVolume in order to maintain compatibility with the IBM 2105 ESS
  - If DEVICETYPE(3380J) is specified, DEVCYLS must be a value from 1-885 cylinders
  - If DEVICETYPE(3380KE) is specified, DEVCYLS must be a value from 886-1770 cylinders
  - If DEVICETYPE(3380K) is specified, DEVCYLS must be a value from 1771-2655 cylinders
  - If DEVICETYPE(33903) is specified, DEVCYLS must be a value from 1-3339 cylinders
  - If DEVICETYPE(33909) is specified, DEVCYLS must be a value from 3340-10017 cylinders if Large Volume microcode support is not installed or the subsystem is a V2X or V2X2
  - If DEVICETYPE(33909) is specified, DEVCYLS must be a value from 3340-32760 cylinders if Large Volume microcode support is installed and the subsystem is a V2Xf or V2X4f

    Note: A 3390-9 device defined with 32759 cylinders is technically a FlexVolume; a 3390-9 device defined with 32760 cylinders is technically a Large Volume.

Abbreviation: **DCYLS**

Values: *cylinders* specifies the number of cylinders and must be a decimal value within the above limits. The absence of the DEVCYLS parameter on a DEFINE DEVICE subcommand implies that the device will be defined with the normal (default) number of cylinders for that device type.

Default value: **NO**

Example: **DCYLS(42)**

INITIALIZE (UNIT (device) VOLUME (volser))

Optional

Use this parameter only if you are specifying a **DEVICETYPE** of **SCSIA** or **SCSIB**.

Note: If you are running as an MVS guest under VM, you cannot use this parameter; there is no path. To initialize the device, you must first define the device (with this subcommand), then attach the device to the MVS system under VM, and finally initialize the device with the INITIALIZE DEVICE subcommand.

To initialize SCSI-format devices, this parameter specifies device numbers and volume serial numbers (volsers) for each **SCSIA** or **SCSIB** device you are defining. If you use this parameter, you must supply at least as many device numbers (units) and volsers as the number of FDIDs you are defining in this subcommand.

Abbreviation: **INIT**

The UNIT and VOLume subparameters are both required.

Values: **UNIT**(*device*) specifies one or more host device numbers (each *device* is 1 to 4 hexadecimal digits).

VOL(*volser*) specifies one or more volume serial numbers (each *volser* is 6 alphanumeric characters).

You can enter lists and ranges of device numbers and volsers, but cannot use wildcard characters.

Default values: None

Examples:
```
INIT( UNIT(220) VOL(DATA12) )
INIT( UNIT(2D4 2D6 2D7) VOLUME(PROD02:PROD04) )
INIT( UNIT(3A0:3AD) VOL(FILE01 FILE02 FILE05:FILE16) )
```

Notes:

1. The values for FDID, UNIT, and VOLUME can be specified in any order. The order of the values for one subparameter can be different from the order for the others.
2. The values for FDID, UNIT, and VOLUME are associated by their relative position within the expanded list of single values, lists of values, and ranges of values.
3. If you specify more device numbers (units) and volsers than FDIDs (specified with the FDID parameter), the excess unit and volser numbers are ignored.

NAME (dvcname)

Optional

This parameter specifies the names to be assigned to the functional devices identified by the FDID parameter.

Abbreviation: **NM**

Values: *dvcname* is a name for a functional device. You can enter 1 to 8 characters or a null string. The following characters are accepted, even as the *first* character: a to z, A to Z, 0 to 9, $, @, #, -, _, +, &, ., / A null string, entered as **NAME('')** or **NAME("")**, sets the name to all blanks.

Note: If **SET CASE(UPPER)** is in effect, and you use lowercase characters in a channel name and don't want them converted to uppercase, you must enclose the name in matching quotes.

You can use ranges and lists, but not wildcard characters.

Notes:

1. When specifying a range, both names must contain at least one numeric (decimal) character, which must be in the right-most position in each name (as in the third example below).
2. In a range specification, hexadecimal "alphabetic digits" (A-F) are not recognized as numeric. See the rules and examples for specifying ranges (beginning on page 9-6).

Default value: None

Examples:
```
NAME(PAYROLL)
NM(AR002)
NM(FILE001:FILE004)
NM(PROJ71 PROJ112 PROJ149)
NM('myfile')
```

PARTITION (PRODUCTION | TEST)

Optional

This parameter specifies the partition with which the device is to be associated.

Note: You cannot assign a device to the Test partition on the V2X, V960, or 9500 SVA—only on subsystems running earlier microcode. See "Functional Differences between Subsystems" on page 1-3 for more information.

Abbreviation: `PART`

Values: `PROD` or `TEST`

Default value: `PROD`

Example: `PART(PROD)`

PAVBASE (base_fdid)

Optional for Base devices; Required for Alias devices

This parameter specifies the Base device to which this Alias is related. PAVBASE cannot specify an Alias device.

To define a Base device, the PAVBASE parameter must **not** be specified on the define request, and the device must not already exist.

To define an Alias device, the PAVBASE parameter **must** be specified on the define request. The related Base device must already exist (it can be online or offline), and the value of the PAVBASE parameter must specify the FDID of the related Base.

Note: An Alias device can be reassigned to a different Base device in three ways:

1. automatically by the Workload Manager (WLM) component of a OS/390 or z/OS operating system
2. manually by using the SVAA ALTER DEVICE subcommand
3. manually by using the SVAA DEFINE DEVICE subcommand

Abbreviation: `PAVB`

Values: *base_fdid* is the same as a functional device identifier: 1 to 3 hexadecimal digits (0 to FFF).

Ranges, lists, and wildcard characters cannot be used.

Default value: None

Example: **PAVB(411)**

PRIVILEGEDECAM (YES | NO)

Optional

This parameter specifies whether the device is eligible for use as the transmission path for Category 1-restricted SVAA Extended Control and Monitoring (ECAM) messages to the SVA subsystem.

Note: For **PRIVLG(YES)** to take effect, the device must also be designated an ECAM device with the SET ECAMDEVICE subcommand (see page 9-128 for details).

You can specify **NO** for *most* devices—to limit the number of privileged ECAM devices—but you must specify **PRIVLG(YES)** for *at least one* device.

The use of privileged ECAM devices is normally limited to specific individuals (for example, the Storage Administrator, a Systems Programmer, or an Operator). For security reasons, do not specify **YES** for devices that can be accessed either as attached devices, or in write mode as full-pack minidisks, by the general user community.

Abbreviation: **PRIVLG**

Values: **YES** or **NO**

Default value: **NO**

Example: **PRIVLG(NO)**

SCSIADDRESS (domain.target.lun)

Optional

This parameter specifies the SCSI address for the functional device.

Abbreviation: **SCSIADDR**

Values: *domain.target.lun* (3 decimal numbers separated by periods) specifies a SCSI address, where:

domain	is the logical domain address (1 to 2 decimal digits)
target	is the SCSI target identifier (1 to 2 decimal digits)
lun	is the logical unit number (LUN) for the SCSI physical device (1 to 3 decimal digits)

Default value: None

Examples: **SCSIADDRESS(0.8.15)**
SCSIADDR(01.03.003 00.07.012)

SCSIBLOCKSIZE (512 | 2048 | 4096 | 8192 | 16384)

Optional

This parameter defines the logical block size for a SCSI device.

Note: This parameter can be entered only if the device type is SCSIA or SCSIB.

Abbreviation: SCSIBLKSI

Values: 512, 2048, 4096, 8192, or 16384

Default value: 512

Example: SCSIBLKSI(2048)

SCSIENABLE (YES | NO)

Optional

This parameter enables or disables host access to the SCSI functional device.

Abbreviation: SCSIENA

Values: YES or NO

Default value: NO

Example: SCSIENA(YES)

SCSIREADWRITE (YES | NO)

Optional

This parameter specifies whether write access to the SCSI functional device is to be allowed. **YES** allows writes; **NO** allows no writes.

Abbreviation: SCSIRW

Values: YES or NO

Default value: NO

Example: SCSIRW(YES)

STATUSBRIDGE (NO | YES)

Optional

This parameter specifies whether the CKD functional device is to be defined as a Power PPRC Status Bridge. **NO** does not define the device as a Power PPRC Status Bridge. **YES** does define the device as a Power PPRC Status Bridge, and the device type must be specified as 33903 in this case.

Abbreviation: STATUS

Values: NO or YES

Default value: NO

Example: STATUS(YES)

Examples of DEFINE DEVICE

Example 1.

```
DEFINE DEVICE (-
     SUBSYS(IBSUB01)-
     FDID(D'1':D'255')-
     DEVTYP(3380K)-
     NM(ICE001:ICE255)-
     CACHE(ENA)-
     CKDENA-
     PART(PROD)-
     PRIVLG(NO) )
```

On SVA subsystem **IBSUB01**, this subcommand defines the devices with FDIDs ranging from **1** through **255** (decimal) as **3380K**-type devices. It assigns names ranging from **ICE001** to **ICE255**, and assigns them to the Production partition. It enables the CKD devices, enables caching for all of the devices, and specifies that none of the devices are to be privileged ECAM devices.

Example 2.

```
DEF DEV (-
     SUBSYS('subsysa')-
     FDID(80)-
     DEVTYP(3380J)-
     NM(COMM02)-
     CACHE(ENA)-
     CKDENA-
     CKDRW(NO)
     PRIVLG(YES) )
```

On SVA subsystem **subsysa**, this subcommand defines functional device **80** as a **3380J**-type device. It assigns the name **COMM02** to the device, enables it as a CKD device, disables write access, enables caching, and designates the device to be a privileged ECAM device.

Example 3.

```
DEF DEV (-
     SUBSYS('subsysa')-
     FDID(7FF)-
     DEVTYP(33903)-
     PAVB(700) )
```

On SVA subsystem **subsysa**, this subcommand defines functional device **7FF** as an Alias with a device type of **3390-3**. The Alias device is to be related to functional device **700**, a previously-existing Base device.

Example 4.

```
DEF DEV (-
     SUBSYS(TEST)-
     FDID(055)-
     DEVTYP(33903)-
     DEVCYLS(42) )
```

On SVA subsystem **TEST**, this subcommand defines functional device **055** as a FlexVolume that is **42** cylinders in size.

Example 5.

```
DEF DEV (-
     SUBSYS(TEST)-
     FDID(FFF)-
     DEVTYP(33909)-
     DEVCYLS(32760) )
```

On SVA subsystem **TEST**, this subcommand defines functional device **FFF** as a Large Volume. The device type must be **33909** for a Large Volume.

DELETE DEVICE Subcommand

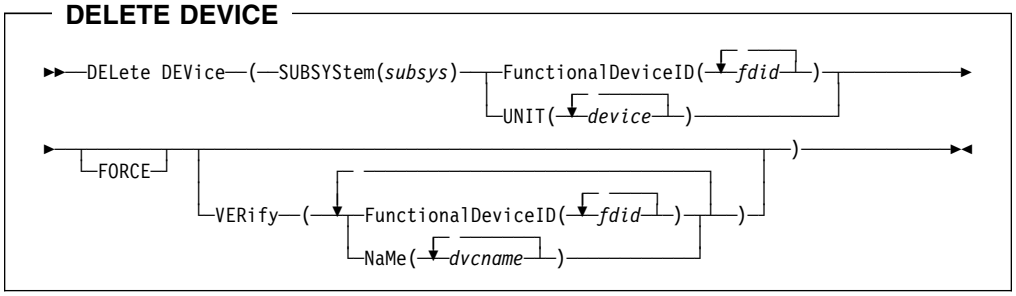
**** Subcommand of SIBADMIN***

The DELETE DEVICE subcommand deletes the definition of one or more SVA functional devices.

Notes:

1. All data on the device is effectively erased by this subcommand. Therefore, before you delete the device, you must back up any data that you want to preserve or move it to another functional device.
2. You ***must*** vary the devices (to be deleted) offline to all hosts before you issue this subcommand.

   Note: PAV Base and Alias devices must be varied offline before any related Alias devices can be deleted. Also, PAV Alias devices cannot be varied online or offline.
3. In VM, if the device has an operating system status of BOXED, you may have to (1) vary the device offline to ensure status is OFFLINE, (2) vary it online to reestablish a path, and then (3) vary it offline again. (The VM BOXED status can also affect OS/390 operations when OS/390 is running under VM.)
4. You cannot delete a device that is part of a PPRC pair. You must first delete the pair and then you may delete the device.
5. All PAV Alias devices (for a given Base device) must be deleted before the given Base device can be deleted. You cannot delete a Base and all of its related Aliases in a single operation.
6. Although PAV Alias devices can be defined only if the PAV feature is installed, the feature is not required in order to delete PAV Base and Alias devices.
7. Alias devices cannot be deleted from an online Base except for the special case when they have been genned as Bases in HCD and misdefined as Aliases to the V2Xf. In this special case only, it does not matter whether the Base is online or offline. Since the host operating system did not establish a path group to the Alias when it was misdefined, it can be safely deleted without requiring that the Base device be varied offline.
8. The FORCE parameter is no longer required when deleting an Alias that is related to an offline Base device that contains user data.



Parameters

SUBSYSTEM (subsys)

Required

This parameter specifies the name of the SVA subsystem containing the device definitions to be deleted.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If the subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

Default value: None

Examples:
```
SUBSYSTEM(SUB1)
SUBSYS(SUBSYS1)
SUBSYS(1SUBSYS)
```

FUNCTIONALDEVICEID (fdid)

Conditional (To identify the device, you must enter either this parameter or the UNIT parameter—*not both*.)

This parameter specifies the devices by their SVA FDIDs.

Abbreviation: **FDID**

Values: *fdid* is a functional device identifier: 1 to 3 hexadecimal digits or 1 to 4 decimal digits. See the table on page 1-3 for ranges of FDID values by subsystem type.

You can use ranges and lists, but not wildcard characters.

Default form: Hexadecimal (decimal values require the D prefix)

Examples:

FDID(40)	(decimal 64)
FDID(D'64')	(decimal 64)
FDID(10:12)	(decimal 16 through 18)
FDID(21 22 2D)	(decimal 33, 34, and 45)

UNIT (device)

Conditional (To identify the device, you must enter either this parameter or the FDID parameter—*not both*. However, if the device is not defined to the host operating system in which SVAA is running, you must use FDID.)

This parameter specifies the devices as they are defined to the host in which SVAA is running.

Note: Device mapping must be on to use this parameter.

Values: *device* is a host device number: 1 to 4 hexadecimal digits. Decimal representation (D prefix) is not accepted.

You can use ranges and lists, but not wildcard characters.

Default form: Hexadecimal

Examples: **UNIT(0234)**
UNIT(X'0234')
UNIT(222:233)
UNIT(200 300)

FORCE

Optional

This parameter indicates that a specified functional device is to be deleted even though it contains user data.

Notes:

1. You can use the FORCE parameter *only for batch processing*—not when entering the subcommand interactively. Furthermore, you should use this parameter in a batch file *only after careful consideration* (you cannot recover the data from a deleted device).
2. If user data exists on the device to be deleted, a message informs you of the fact and prompts you to enter **FORCE** if you still want to delete the device. This message and prompt is no longer issued when deleting an Alias that is related to an offline Base device that contains user data.

VERIFY (subparameters)

Optional

This parameter provides a way for you to insure that you are deleting the correct device. Enter one or both of the following subparameters.

FDID (*fdid*)
NM (*dvcname*)

Note: To use VERIFY FDID, you must use the UNIT parameter to specify the devices in the subcommand itself (see Example 1. below).

The VERIFY parameter compares the FDID you specify to the unit number defined to the host operating system. If these parameters identify the same device, the DELETE continues. However, if the VERIFY fails, the DELETE DEVICE subcommand is rejected.

Abbreviation: **VER**

Default value: None

Examples of DELETE DEVICE

Example 1.

```
DELETE DEVICE (-
     SUBSYS(SVASYS)-
     UNIT(022B)-
     VER(FDID(2B)) )
```

This subcommand specifies that the functional device identified to the host system as unit **022B** is to be deleted. If functional device **2B** in SVA subsystem **SVASYS** is verified as being the same device as unit **022B**, the delete request proceeds.

Example 2.

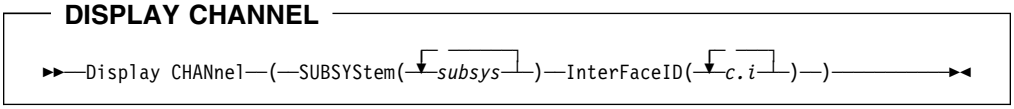
```
DEL DEV (-
     SUBSYS('svasub1')-
     FDID(A0:A3) )
```

This subcommand deletes the functional devices with FDIDs ranging from **A0** through **A3** in SVA subsystem **svasub1**. (It specifies no verification; the devices are identified only by FDID.)

DISPLAY CHANNEL Subcommand

- ***Subcommand of SIBADMIN***
- ***System Operator command***

The DISPLAY CHANNEL subcommand displays the current channel interface status.



Parameters

SUBSYSTEM (subsys)

Required

This parameter specifies the names of the SVA subsystems for which the channel interface is installed.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If a subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

You can use ranges, lists, and wildcard characters.

Default value: None

Examples:
```
SUBSYSTEM(*)
SUBSYS(SUBSYS1 SUBSYS2)
SUBSYS(SUBSYS1:SUBSYS5)
```

INTERFACEID (c.i)

Required

This parameter specifies one or more (up to 32) channel interfaces of the SVA subsystem.

Abbreviation: **IFID**

Values: *c.i* (2 alphanumeric characters separated by a period) specifies a channel interface, where:

- *c* identifies one of the two clusters (0 or 1) in the subsystem
- *i* is the interface ID (A through P) associated with a specific cluster

You can use ranges, lists, and wildcard characters.

Default value: None

Examples:

INTERFACEID(0.A)	(channel A on cluster 0)
IFID(0.A:0.J)	(channels A to J on cluster 0)
IFID(0.*)	(all channels on cluster 0)
IFID(*.*)	(all channels on clusters 0 and 1)
IFID(*.C)	(channel C on clusters 0 and 1)
IFID(*)	(all channels)

Examples of DISPLAY CHANNEL

Example 1.

```
d chan(subsys(LUNAR) ifid(*))

SIB0561I   -SUBSYS- IFID STAT TYPE  BASE RANGE FDID DOMAIN  IDENTIFIER
SIB0562I   LUNAR    0.A  ENAB ESCON  00  1024   00
SIB0562I   LUNAR    0.C  ENAB ESCON  00  1024   00
SIB0562I   LUNAR    0.E  ENAB FIBRE                 002     500104F000411882
SIB0562I   LUNAR    0.G  ENAB FIBRE                 003     500104F000411883
SIB0562I   LUNAR    0.I  ENAB SCSI          0       000 003 534E524100000006
SIB0562I   LUNAR    0.K  ENAB SCSI         37       001 007 4753424100000081
SIB0562I   LUNAR    1.A  ENAB ESCON  00  1024   00
SIB0562I   LUNAR    1.C  ENAB ESCON  00  1024   00
SIB0562I   LUNAR    1.E  ENAB FIBRE                 005     500104F00042ADF5
SIB0562I   LUNAR    1.G  ENAB FIBRE                 006     500104F00042ADF6
SIB0562I   LUNAR    1.I  ENAB SCSI          2       008 012 534E524100000008
SIB0562I   LUNAR    1.K  ENAB SCSI          2       008 012 534E524100000008
SIB0565I   ************************* END OF DISPLAY **********************
SIB:
```

Figure 9-1. *Example of Display Channel subcommand.* A DISPLAY CHANNEL subcommand was issued using the wildcard character "*" to display all interfaces associated with subsystem LUNAR. The TYPE field shows the type of channel supported by each interface—in this case four ESCON, four fibre, and four SCSI channels.

Example 2.

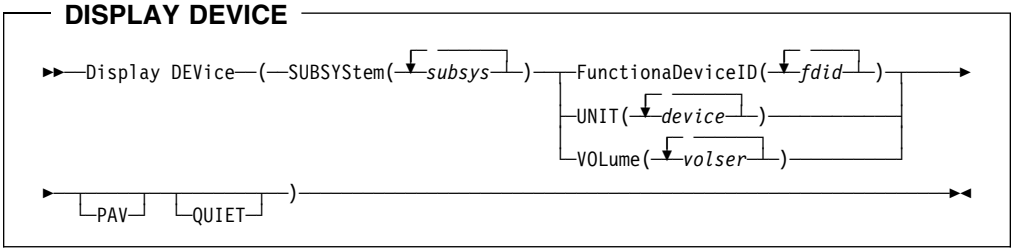
```
d chan(subsys(MAZUMA) ifid(*))

SIB0561I   -SUBSYS- IFID STAT TYPE   BASE RANGE FDID DOMAIN  IDENTIFIER
SIB0562I   MAZUMA   0.A  ENAB FICON   00  4096   00         500104F0006FDDD0
SIB0562I   MAZUMA   0.B  ENAB FICON   00  4096   00         500104F0006FDDD0
SIB0562I   MAZUMA   0.C  ENAB FICON   00  4096   00         500104F0006FDDD0
SIB0562I   MAZUMA   0.D  ENAB FICON   00  4096   00         500104F0006FDDD0
SIB0562I   MAZUMA   1.A  ENAB FICON   00  4096   00         500104F0006FDDD0
SIB0562I   MAZUMA   1.B  ENAB FICON   00  4096   00         500104F0006FDDD0
SIB0562I   MAZUMA   1.C  ENAB FICON   00  4096   00         500104F0006FDDD0
SIB0562I   MAZUMA   1.D  ENAB FICON   00  4096   00         500104F0006FDDD0
SIB0565I   ************************* END OF DISPLAY **********************
```

Figure 9-2. *Example of Display Channel subcommand.* A DISPLAY CHANNEL subcommand was issued using the wildcard character "*" to display all channels and all interfaces associated with subsystem MAZUMA. The TYPE field shows the type of channel supported—in this case eight FICON channels.

DISPLAY DEVICE Subcommand

* ***Subcommand of SIBADMIN***
* ***System Operator command***

The DISPLAY DEVICE subcommand displays the current status of one or more functional devices.



Parameters

SUBSYSTEM (subsys)

Required

This parameter specifies the SVA subsystem with which the device is associated.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If a subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

You can use ranges, lists, and wildcard characters.

Default value: None

Examples: **SUBSYSTEM(*)**
SUBSYS(ICESUB1 ICESUB2)
SUBSYS(SUBSYS1:SUBSYS5)
SUBSYS('icesub')

FUNCTIONALDEVICEID (fdid)

Conditional (This is one of a group of three parameters of which you must enter *one and only one*: FDID, UNIT, or VOL.)

This parameter specifies devices by their SVA functional device identifiers (FDIDs).

Abbreviation: **FDID**

Values: *fdid* is a functional device identifier: 1 to 3 hexadecimal digits or 1 to 4 decimal digits. See the table on page 1-3 for ranges of FDID values by subsystem type.

You can use ranges, lists, and wildcard characters.

Default form: Hexadecimal (decimal values require the D prefix)

Examples:
FunctionalDeviceID(40) (decimal 64)
FDID(D'64') (decimal 64)
FDID(1 22 35)
FDID(10:12)

PAV

Optional

This parameter displays the FDIDs of the Aliases currently related to a Base device. Ranges, lists, and wildcard characters can be used in the FDID, UNIT, and VOLUME parameters to display the relationships for multiple Base devices.

Values: None

Ranges, lists, and wildcard characters cannot be used.

Default value: None

Example: **PAV**

QUIET

Optional

This parameter reduces the amount of generated output by suppressing error messages for non-existent devices. Messages SIB0675E, SIB0676E, and SIB0677E are suppressed for FDID, UNIT, and VOLUME inquiries respectively.

Note: When FDID(*), UNIT(*), or VOLUME(*) are specified, the addition of the QUIET parameter makes no difference.

Values: None

Ranges, lists, and wildcard characters cannot be used.

Default value: None

Example: **QUIET**

UNIT (device)

Conditional (This is one of a group of three parameters of which you must enter *one and only one*: FDID, UNIT, or VOL. However, if the devices are not defined to the host operating system in which SVAA is running, you must use FDID.)

This parameter specifies devices as they are defined to the host in which SVAA is running.

Note: Device mapping must be on to use this parameter.

Values: *device* is a host device number: 1 to 4 hexadecimal digits. Decimal representation (D prefix) is not accepted.

You can use ranges, lists, and wildcard characters.

Default form: Hexadecimal

Examples:
```
UNIT(234)
UNIT(20:22 100 110)
```

VOLUME (volser)

Conditional (This is one of a group of three parameters of which you must enter *one and only one*: FDID, UNIT, or VOL. However, if the devices are not defined to the host operating system in which SVAA is running, you must use FDID.)

This parameter specifies the volume identifiers for the devices to be displayed.

Note: Device mapping must be on to use this parameter.

Abbreviation: `VOL`

Values: *volser* is a valid volume serial number.

You can use ranges, lists, and wildcard characters.

Default value: None

Examples:
```
VOL(TSTPK1)
VOLUME(WKPK)
```

Example of DISPLAY DEVICE

Don and Brian, should we add a PAV example???

```
d dev(subsys(LUNAR) fdid(0:7))
SIB0651I                                    --CKD-- -SCSI-- --SCSI ADDRESS-- PPRC
SIB0663I   -SUBSYS- UNIT FDID STAT VOLSER R/W ENA R/W ENA DOM TGT LUN INDX STAT
SIB0664I   LUNAR    D000   00 ON   EC0000  Y   N   Y   N                       S
SIB0664I   LUNAR    D001   01 ON   EC0001  Y   N   N   N                       D
SIB0664I   LUNAR    D002   02 ON   EC0002  Y   Y   N   N
SIB0664I   LUNAR    D003   03 ON   EC0003  Y   Y   N   N
SIB0664I   LUNAR    D004   04 ON   EC0004  Y   Y   N   N
SIB0664I   LUNAR    D005   05 ON   EC0005  Y   Y   N   N
SIB0664I   LUNAR    D006   06 ON   EC0006  Y   Y   N   N
SIB0664I   LUNAR    D007   07 ON   EC0007  Y   Y   N   N
SIB0665I   ************************ END OF DISPLAY ************************
SIB:
```

Figure 9-3. *Example of Display Device subcommand.* A DISPLAY DEVICE subcommand was issued to show device status. The subcommand specifies a range of eight functional device IDs (FDIDs).

The **PPRC STAT** column indicates whether the device is part of a a PPRC pair and/or whether the device is a Power PPRC Bridge device.

The PPRC pair status is shown in the left side of the column and may take on one of the following values:

- A blank indicates the device is not part of any PPRC pair.
- A **P** indicates the device is a PPRC Primary.
- An **S** indicates the device is a PPRC Secondary.

The Power PPRC status is shown in the right side of the column and may take on one of the following values:

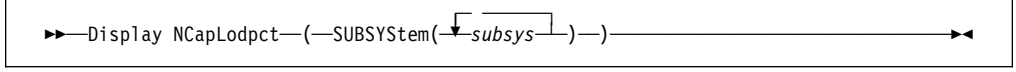
- A blank indicates the device is not a Power PPRC Bridge device.
- A **D** indicates the device is a Power PPRC Data Bridge.
- An **S** indicates the device is a Power PPRC Status Bridge.

DISPLAY NCL Subcommand

* ***Subcommand of SIBADMIN***
* ***System Operator command***

The DISPLAY NCL subcommand displays net capacity load percentages for specified subsystems, together with the total capacity in megabytes and collected free space in megabytes for each subsystem.

DISPLAY NCAPLODPCT



Parameters

SUBSYSTEM (subsys)

Required

This parameter specifies the names of the SVA subsystems selected.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If a subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

You can use ranges, lists, and wildcard characters.

Default value: None

Examples: **SUBSYSTEM(*)**
SUBSYS(SUBSYS1 SUBSYS2)

Example of DISPLAY NCL

```
D NCL(SUBSYS(*))
SIB0654I   SVA       DISK ARRAY    NET-CAPACITY-LOAD%    COLL-FREE-SPACE%     UNCOLL-FREE-SPACE%
SIB0655I   SUBSYS   CAPACITY(MB)      TOT  PROD  TEST     TOT  PROD  TEST      TOT  PROD  TEST
SIB0656I   LUNAR       85899.3       17.4  17.4   0.0    82.6  82.6   0.0      0.0   0.0   0.0
SIB0656I   EVT1        37840.0        1.8   1.8   0.0    97.9  97.9   0.0      0.3   0.3   0.0
SIB0656I   EVT2        37840.0       81.2  81.2   0.0    17.4  17.4   0.0      1.4   1.4   0.0
SIB0658I   ********************************* END OF DISPLAY ************************************
SIB:
```

Figure 9-4. *Example of Display NCL subcommand.* A DISPLAY NCL subcommand was issued to display NCL percentages for all available subsystems. The percentages for three subsystems are displayed. Each line has a message number for use by automated operations software.

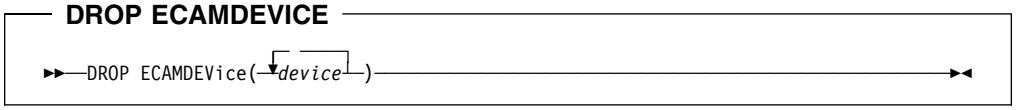
DROP Subcommands

The DROP subcommands release devices that are being used by the host operating system to communicate with either an SVA subsystem or a non-SVA subsystem.

DROP ECAMDEVICE

*** *Subcommand of SIBADMIN***

This subcommand specifies devices (as defined to the host) to be dropped from the list of active ECAM devices.



Abbreviation: **DROP ECAMDEV**

Values: *device* is a virtual device address (1 to 4 hexadecimal digits) that is defined to the virtual machine executing the SVAA subcommand.

You can use ranges and lists, but not wildcard characters.

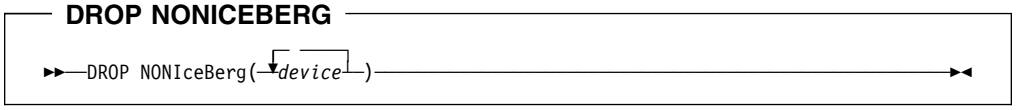
Default value: None

Example: **DROP ECAMDEV(2AE 730 1D)**

DROP NONICEBERG

*** *Subcommand of SIBADMIN***

This subcommand specifies devices (as defined to the host) to be dropped from the list of active non-SVA communication devices (that is, devices over which statistics are obtained from non-SVA subsystems).



Abbreviation: **DROP NONIB**

Values: *device* is a virtual device address (1 to 4 hexadecimal digits) that is defined to the virtual machine executing the SVAA subcommand.

You can use ranges and lists, but not wildcard characters.

Default value: None

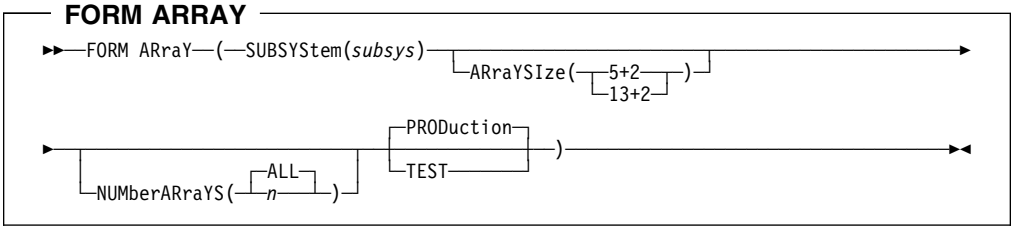
Example: **DROP NONIB(720 1ED)**

FORM ARRAY Subcommand

*** *Subcommand of SIBADMIN***

The FORM ARRAY subcommand forms one or more arrays for either the Test partition or the Production partition.

Note: You cannot form Test arrays on the V2X, V960, or 9500 SVA—only on subsystems running earlier microcode. See "Functional Differences between Subsystems" on page 1-3 for more information.



Parameters

SUBSYSTEM (subsys)

Required

This parameter specifies the SVA subsystem in which the array is to be formed.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If the subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

Default value: None

Example: **SUBSYSTEM(SVA1)**

ARRAYSIZE (5+2 | 13+2)

Optional

This parameter specifies the number of drive modules (user data drives + redundancy data drives) in the array. If you enter this parameter, its value overrides the current subsystem array size for this FORM ARRAY operation only.

Note: You can form a 5+2 array only on the 9393 or 9500 SVA.

Abbreviation: **ARYSI**

Values: **5+2** or **13+2**

The arrays formed will have a drive module capacity equivalent to the first value plus the second value. For example, 13+2 indicates a capacity equivalent to 13 user data drives and 2 redundancy drives.

Default value: Current subsystem array size value.

Example: **ARYSI(13+2)**

NUMBERARRAYS (ALL | n)

Optional

This parameter specifies the number of arrays to be formed. One Production array must be formed at the LOP or the DOP when the subsystem is installed. Therefore, the maximum number of arrays you can form with this subcommand is 7.

Note: You can form 5+2 arrays only on the 9393 or 9500 SVA. On those subsystems, you can form up to eight 5+2 arrays, but only four 13+2 arrays. Both array sizes can exist on one subsystem in the following possible combinations:

4 13+2 arrays and **0** 5+2 arrays
3 13+2 arrays and **2** 5+2 arrays
2 13+2 arrays and **4** 5+2 arrays
1 13+2 arrays and **6** 5+2 arrays
0 13+2 arrays and **8** 5+2 arrays

Abbreviation: **NUMARYS**

Values: *n* (an integer from 1 to 7) specifies the number of arrays to be formed. If the number of spares available is insufficient to form *n* arrays, the subsystem forms as many arrays as possible.

ALL specifies that as many arrays are to be formed as the number of available spares allows.

For an explanation of the number of spares required to form arrays, see “Forming Additional Arrays” on page 2-2.

Default value: **ALL**

Examples: **NUMARYS(3)**

TEST | PRODUCTION

Optional

This parameter specifies the partition to which the new arrays are assigned.

Note: You cannot form Test arrays on the V2X, V960, or 9500 SVA—only on subsystems running earlier microcode.

Abbreviation: **TEST** or **PROD**

Default value: **PROD**

Examples of FORM ARRAY

Example 1.

```
FORM ARRAY (ARYSI(13+2) SUBSYS('ice001') PROD)
```

On SVA subsystem **ice001**, this subcommand forms as many 13+2 (15-drive) Production arrays as the available number of spares allows.

Example 2.

```
FORM ARY (SUBSYS(ICESUBA) NUMARYS(1) PROD)
```

On SVA subsystem **ICESUBA**, this subcommand forms one Production array. The number of drive modules in the array is determined by the current array size setting for the subsystem.

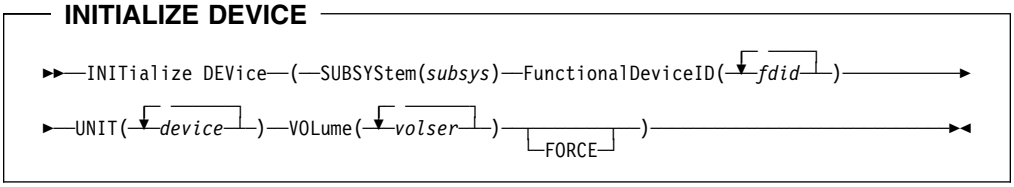
INITIALIZE DEVICE Subcommand

*** *Subcommand of SIBADMIN***

The INITIALIZE DEVICE subcommand initializes one or more previously defined SCSIA or SCSIB functional devices (FDIDs) with host device numbers (units) and volume serial numbers (volsers). You cannot initialize PAV Base or Alias devices since they are defined as CKD devices.

You must supply at least as many device numbers and volsers as the number of FDIDs specified in this subcommand. If you specify more device numbers and volsers than FDIDs, the extra device numbers and volsers are ignored.

The values for FDID, UNIT, and VOLUME are associated by their relative position within the expanded list of single values, lists of values, and ranges of values.



Parameters

SUBSYSTEM (subsys)

Required

This parameter specifies the name of the SVA subsystem containing the SCSI devices to be initialized.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If a subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

Default value: None

Example: **SUBSYSTEM(SVA001)**

FUNCTIONALDEVICEID (fdid)

Required

This parameter specifies the SCSI functional devices to be initialized.

Abbreviation: **FDID**

Values: *fdid* is a functional device identifier: 1 to 3 hexadecimal digits or 1 to 4 decimal digits. See the table on page 1-3 for ranges of FDID values by subsystem type.

You can use lists and ranges but not wildcard characters.

Default form: Hexadecimal (decimal values require the D prefix)

Examples:
```
FDID(D'64')
FDID(21 22 35)
FDID(10:22)
```

UNIT (device)

Required

This parameter specifies the host device numbers of the devices to be initialized.

Values: *device* specifies one or more host device numbers (each *device* is 1 to 4 hexadecimal digits).

You can use lists and ranges but not wildcard characters.

Default value: None

Examples:
```
UNIT(220)
UNIT(3A0 3A5 3AA:3AD)
```

VOLUME (volser)

Required

This parameter specifies the volume serial numbers of the devices to be initialized.

Abbreviation: **VOL**

Values: *volser* specifies one or more volume serial numbers, 6 alphanumeric characters in length.

You can use lists and ranges but not wildcard characters.

Default value: None

Examples:
```
VOLUME(PROD02:PROD04)
VOL(FILE01 FILE02 FILE05:FILE16)
```

FORCE

Optional

This parameter indicates that the specified functional device is to be initialized even if it contains a VOL1 record.

Values: (keyword only)

Default value: None

Notes:

1. If you include the FORCE parameter in the subcommand, you are prompted with a confirmation message. If you confirm with a **Yes**, the device will be initialized.
2. If you omit the FORCE parameter, you are prompted with a message stating that the volume is already initialized and requesting that you reply either FORCE or CANCEL.
3. No additional security definitions are required to use this parameter.

Example of INITIALIZE DEVICE

```
INIT DEV (SUBSYS(NEWSVA)-
     FDID(24:27 2A 2C) UNIT(302:309)-
     VOL(FILE02 FILE04 FILE06:FILE09) )
```

This subcommand initializes six SCSI devices (**24, 25, 26, 27, 2A,** and **2C**) with host device numbers and volsers—in the order they are specified in the UNIT and VOL parameters. In case of the device numbers, **302** through **307** are assigned, but **308** and **309** are ignored because only six FDIDs are specified.

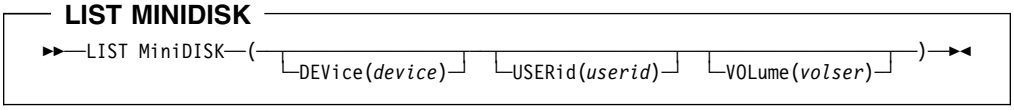
LIST MINIDISK

* ***Subcommand of SIBADMIN***

The LIST MINIDISK subcommand creates a report of VM directory information based on the requested virtual device addresses, user IDs, and host volsers.

Note: Listing a minidisk of another user (a userid other than your own) requires the use of DIAGNOSE code X'E4'. For more information, see the step titled "Define SVAA Privilege Classes" in the *SVAA for VM Installation, Customization, and Maintenance* guide.

LIST MINIDISK



Parameters

DEVICE (device)

Optional

This parameter specifies the address of the virtual DASD device to be listed.

Abbreviation: **DEV**

Values: *device* is the virtual device address of the minidisk: 1 to 4 hexadecimal digits.

You can use ranges and wildcard characters.

Default value: All virtual DASD devices are listed.

Examples:
```
DEV(191)
DEV(19*)
DEV(191:195)
```

USERID (userid)

Optional

This parameter specifies the minidisk owner's user ID.

Abbreviation: **USER**

Values: *userid* is 1 to 8 alphanumeric characters in the set: a to z, A to Z, 0 to 9, $, @, #

You can use wildcard characters.

Default value: All user IDs.

Examples:
```
USER(MAINT1)
USER(FR*D?)
```

VOLUME (volser)

Optional

This parameter specifies the host volume serial number that contains the minidisk.

Abbreviation: **VOL**

Values: *volser* is 1 to 6 alphanumeric characters in the set: a to z, A to Z, 0 to 9, $, @, #

You can use wildcard characters.

Default value: All volumes.

Examples: **VOL(TMP191)**
VOL(TMP1*)

Examples of LIST MINIDISK

Example 1.

LIST MINIDISK

This subcommand lists all VM minidisks.

Example 2.

LIST MDISK (USER(MAINT))

This subcommand lists the VM minidisks defined for user ID **MAINT**.

Titles for the report are defined with the SET TITLEn subcommand or the SVAA REPORT TITLES panel.

```
                    Storage Technology Corporation

                          VM Minidisk Report

Userid   Vdev Volser Devtype  Start      Size
MAINT    0190 V8SRES 3380     0000001200 0000000100
MAINT    0490 V8SRES 3380     0000000146 0000000100
MAINT    019D V8SRES 3380     0000000296 0000000065
MAINT    019E V20102 3390     0000000413 0000000011
MAINT    039E V20102 3390     0000000507 0000000015
MAINT    0290 V8SNEW 3380     0000000839 0000000078
MAINT    0590 V8SNEW 3380     0000000739 0000000078
```

Example 3.

LIST MDISK (VOL(CMS033))

This subcommand lists the VM minidisks defined on volume **CMS033**.

```
                    Storage Technology Corporation

                          VM Minidisk Report

Userid   Vdev Volser Devtype  Start      Size
SMITH    0210 CMS033 3380     0000001360 0000000100
ANDREWS  021D CMS033 3380     0000000146 0000000100
BARKER   025E CMS033 3380     0000000421 0000000065
SMITH    0270 CMS033 3380     0000001135 0000000120
BARKER   0290 CMS033 3380     0000000712 0000000080
```

Example 4.

LIST MDISK (USER(MAINT) DEV(19*))

This subcommand lists the VM minidisks defined for user ID **MAINT** that are in the **19**x range. (No report titles have been defined.)

```
Userid   Vdev Volser Devtype  Start      Size
MAINT    0190 V8SRES 3380     0000001200 0000000100
MAINT    019D V8SRES 3380     0000000296 0000000065
MAINT    019E V20102 3390     0000000413 0000000011
```

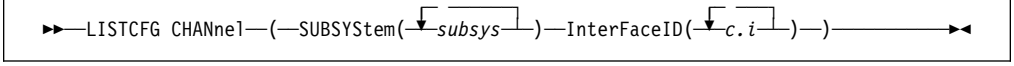
LISTCFG CHANNEL Subcommand

***** ***Subcommand of SIBADMIN***

The LISTCFG CHANNEL subcommand produces a report on the configuration of one or more channel interfaces. The destination for the report (the terminal or a file) is determined by the OUTFILE parameter of the SET DESTINATION subcommand.

You can redirect the report output to a file (for later printing) by including the *redirection* option in the subcommand. For more information, see "Redirecting Subcommand Output" on page 9-8.

LISTCFG CHANNEL



Parameters

SUBSYSTEM (subsys)

Required

This parameter specifies the names of the SVA subsystems for which channel configuration reports are to be produced.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If a subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

You can use ranges, lists, and wildcard characters.

Default value: None

Examples: **SUBSYSTEM(ALPHA)**
SUBSYS(SUBSYS1 SUBSYS2)

INTERFACEID (c.i)

Required

This parameter specifies one or more (up to 32) channel interfaces.

Abbreviation: **IFID**

Values: *c.i* (2 alphanumeric characters separated by a period) specifies a channel interface, where:

c identifies one of the two clusters (0 or 1) in the subsystem
i is the interface ID (A through P) associated with a specific cluster

You can use ranges, lists, and wildcard characters.

Duplicate entries are ignored; each IFID is processed only once.

Default value: None

Examples:

INTERFACEID(0.A)	(channel A on cluster 0)
IFID(0.A:0.J)	(channels A to J on cluster 0)
IFID(0.*)	(all channels on cluster 0)
IFID(*.*)	(all channels on clusters 0 and 1)
IFID(*.C)	(channel C on clusters 0 and 1)
IFID(*)	(all channels)

Examples of LISTCFG CHANNEL

Example 1

The following subcommand requests a report on all channel interfaces on the SVA subsystem **LUNAR**.

```
LISTCFG CHAN (SUBSYS(LUNAR) IFID(*) )
```

Here is an example of the report.

```
REPORT DATE: Mon Apr 24, 2000 08:22:10                    SVA SUBSYSTEM                CRLEVEL2 V01R01L00   PAGE: 1

                                        CHANNEL CONFIGURATION REPORT (LEVEL 2)

                          ************************************************************************
                          *  SITE NAME       = STORTEK   *  FRAME SERIAL NUMBER = 430000000036  *
                          *  SUBSYSTEM NAME  = LUNAR     *  SUBSYSTEM MODEL     = 9500          *
                          *  NO. OF CHANNELS = 12        *  SITE LOCATION NO.   = 22222         *
                          ************************************************************************


          INTERFACE  --- CHANNEL INTERFACE ---   ----CHANNEL----   BASE
            NAME     CLUSTER    ID     ENABLED    TYPE    SPEED   IDID  RANGE  FDID
          ---------  -------  -------  -------  --------  -----   ----  -----  ----
          ice000         0        A        Y      ESCON     20.0     00   1024    00
          WARTHOG        0        C        Y      ESCON     20.0     00   1024    00
                         1        A        Y      ESCON     20.0     00   1024    00
                         1        C        Y      ESCON     20.0     00   1024    00


          INTERFACE  --- CHANNEL INTERFACE ---   ----CHANNEL----    DTL     SCSI
            NAME     CLUSTER    ID     ENABLED    TYPE    SPEED   COUNT   DOMAIN    SCSI IDENTIFIER
          ---------  -------  -------  -------  --------  -----   -----   -------   ----------------
                         0        I        Y      SCSI      40.0       0   000 000   534E524100000012
          CHAN-0.K       0        K        Y      SCSI      40.0       8   001 007   4753424100000081
          TEST-1.I       1        I        Y      SCSI      40.0       0
          TEST-1.K       1        K        Y      SCSI      40.0       0   000 004   FFFFFFFFFFFFFFFF


          INTERFACE  --- CHANNEL INTERFACE ---   ----CHANNEL----   SCSI       WORLD WIDE
            NAME     CLUSTER    ID     ENABLED    TYPE    SPEED  DOMAIN     NODE NAME         PORT NAME      ADDRESS
          ---------  -------  -------  -------  --------  -----  -------  ----------------  ----------------  --------
                         0        E        Y      FIBRE    100.0  002      500104F0004118A2  500104F0004118AC  00000003
                         0        G        Y      FIBRE    100.0  003      500104F0004118A3  500104F0004118AC  00000003
          FIBR_1.E       0        E        Y      FIBRE    100.0  005      500104F000411885  500104F000411880  00000003
                         0        G        Y      FIBRE    100.0  006      500104F000411886  500104F000411880  00000003
```

Note: The terms appearing in the report are defined in “Definitions of LISTCFG Report Headings” on page 9-103.

Example 2.

The following subcommand requests a report on all channel interfaces on the V2Xf subsystem **MAZUMA** which has only FICON channels.

LISTCFG CHAN (SUBSYS(MAZUMA) IFID(*))

Here is an example of the report.

```
REPORT DATE: Tue Aug 12, 2003 14:12:36                  SVA SUBSYSTEM                CRLEVEL2 V03R01L00   PAGE: 1

                                      CHANNEL CONFIGURATION REPORT (LEVEL 2)

                        ************************************************************************
                        *  SITE NAME       = STORTEK   *  FRAME SERIAL NUMBER = 481000000036  *
                        *  SUBSYSTEM NAME  = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                        *  NO. OF CHANNELS = 8         *  SITE LOCATION NO.   = 22222         *
                        ************************************************************************


      INTERFACE  --- CHANNEL INTERFACE ---   ----CHANNEL----   BASE                  WORLD WIDE
        NAME     CLUSTER    ID     ENABLED     TYPE    SPEED   IDID  RANGE  FDID    NODE NAME          PORT NAME
      ---------  -------  -------  -------   --------  -----   ----  -----  ----  ----------------  ----------------
                    0        A        Y      FICON     100.0     00   4096    00  500104F0006FDDD0  500104F00045F14C
                    0        B        Y      FICON     100.0     00   4096    00  500104F0006FDDD0  500104F00045F14D
                    0        C        Y      FICON     100.0     00   4096    00  500104F0006FDDD0  500104F00045F12A
                    0        D        Y      FICON     100.0     00   4096    00  500104F0006FDDD0  500104F00045F12B
                    1        A        Y      FICON     100.0     00   4096    00  500104F0006FDDD0  500104F00045F13C
                    1        B        Y      FICON     100.0     00   4096    00  500104F0006FDDD0  500104F00045F13D
                    1        C        Y      FICON     100.0     00   4096    00  500104F0006FDDD0  500104F00045F144
                    1        D        Y      FICON     100.0     00   4096    00  500104F0006FDDD0  500104F00045F125
```

Note: The terms appearing in these reports are defined in “Definitions of LISTCFG Report Headings” on page 9-103.

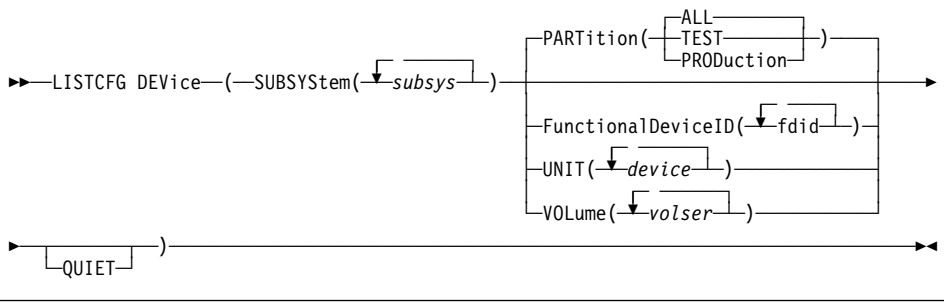
LISTCFG DEVICE Subcommand

*** *Subcommand of SIBADMIN***

The LISTCFG DEVICE subcommand produces a report on functional devices. The destination for the report (the terminal or a file) is determined by the OUTFILE parameter of the SET DESTINATION subcommand.

You can redirect the report output to a file by including the *redirection* option in the subcommand. See “Redirecting Subcommand Output” on page 9-8.

LISTCFG DEVICE



Parameters

SUBSYSTEM (subsys)

Required

This parameter specifies the names of the SVA subsystems containing the functional devices to be included in the report.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If a subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

You can use ranges, lists, and wildcard characters.

Default value: None

Examples:
```
SUBSYSTEM(SUB1)
SUBSYS(SUBSYS1 SUBSYS2)
```

FUNCTIONALDEVICEID (fdid)

Conditional (This is one of a group of four parameters of which you can enter *only one*: FDID, PART, UNIT, or VOL. The default is PART.)

This parameter specifies devices to be included in the report.

Abbreviation: **FDID**

Values: *fdid* is a functional device identifier: 1 to 3 hexadecimal digits or 1 to 4 decimal digits. See the table on page 1-3 for ranges of FDID values by subsystem type.

You can use ranges, lists, and wildcard characters.

Default form: Hexadecimal (decimal values require the D prefix)

Examples:
```
FunctionalDeviceID(40)     (decimal 64)
FDID(D'64')                (decimal 64)
FDID(21 22 35)
```

PARTITION (ALL | TEST | PRODUCTION)

Conditional (This is one of a group of four parameters of which you can enter *only one*: FDID, PART, UNIT, or VOL. The default is PART.)

This parameter specifies that all functional devices associated with the designated partitions are to be included in the report.

Abbreviation: **PART**

Values: **ALL**, **TEST**, or **PROD**

Default value: **ALL**

Example: **PART(PROD)**

QUIET

Optional

This parameter reduces the amount of generated output by suppressing error messages for non-existent devices. Messages SIB0675E, SIB0676E, and SIB0677E are suppressed for FDID, UNIT, and VOLUME inquiries respectively.

Note: When FDID(*), UNIT(*), or VOLUME(*) are specified, the addition of the QUIET parameter makes no difference.

Values: (keyword only)

Default value: None

UNIT (device)

Conditional (This is one of a group of four parameters of which you can enter *only one*: FDID, PART, UNIT, or VOL. The default is PART.)

This parameter specifies devices to be included in the report as they are defined to the host in which SVAA is running.

Note: If the devices are ***not*** defined to the host, you must use the FDID parameter to specify devices. Information about PAV Alias devices is not displayed when selecting devices using the UNIT parameter; the FDID parameter must be used instead.

Note: Device mapping must be on to use this parameter.

Values: *device* is a host device number: 1 to 4 hexadecimal digits. Decimal representation (D prefix) is not accepted.

You can use ranges, lists, and wildcard characters.

Default form: Hexadecimal

Examples:
```
UNIT(20:25)
UNIT(100 110)
```

VOLUME (volser)

Conditional (This is one of a group of four parameters of which you can enter *only one*: FDID, PART, UNIT, or VOL. The default is PART.)

This parameter specifies volume identifiers for devices to be included in the report.

Note: If the devices are not defined to the host operating system in which SVAA is running, you must use the FDID parameter to specify devices.

Note: Device mapping must be on to use this parameter. Information about PAV Alias devices is not displayed when selecting devices using the VOLUME parameter; the FDID parameter must be used instead.

Abbreviation: `VOL`

Values: *volser* is a valid volume serial number.

You can use ranges, lists, and wildcard characters.

Examples:
```
VOL(TSTPK1)
VOLUME(PROJ01 PROJ05 PROJ08:PROJ11)
```

Examples of LISTCFG DEVICE

Example 1.

The following subcommand requests a report on the functional devices with FDIDs ranging from **86** to **8F** in SVA subsystem **LUNAR**.

```
LISTCFG DEV (SUBSYS(LUNAR) FDID(86:8F) )
```

Here is an example of the report that might result.

```
REPORT DATE:  Tue Jul 25, 2000  10:33:28                    SVA SUBSYSTEM                    CRFUNDV   V03R01M00  PAGE 1

                                        FUNCTIONAL DEVICE CONFIGURATION REPORT

                              ************************************************************************
                              *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 430000000036  *
                              *  SUBSYSTEM NAME     = LUNAR     *  SUBSYSTEM MODEL     = 9500          *
                              *  FUNCTIONAL DEVICES = 16        *  FUNCTIONAL CAPACITY = 79564.42      *
                              ************************************************************************

                                                    FUNCT.                                  ------- SCSI DEVICE -------
                                                   CAPACITY  -PHYSICAL CAP USE (MB)-    --- ADDRESS --- PHYSICAL CAP
 VOLSER   NAME   UNIT SSID FDID   TYPE   CYLS     (MB)    SHARED   UNIQUE   TOTAL    DOM TGT LUN INDX LBLKS LBPTK
 ------ -------- ---- ---- ----  -------- -----  -------- -------- -------- --------  --- --- --- ---- ----- -----
                     D001   86  33903    3339   2838.0      0.0      0.0      0.0
                     D001   87  33909   10017   8514.0      0.0      0.0      0.0
                     D001   88  33903    3339   2838.0      0.0      0.0      0.0
                     D001   89  33903    3339   2838.0      0.0      0.1      0.1
                     D001   8A  33903    3339   2838.0      0.0      0.0      0.0
                     D001   8B  33903    3339   2838.0      0.0      0.0      0.0
                     D001   8C  33909   10017   8514.0      0.0      0.1      0.1
                     D001   8D  SCSIB   10017   3691.9      0.0      0.0      0.0   10  10  10    0   512    48
                     D001   8E  SCSIB   10017   3691.9      0.0      0.0      0.0   10  11  11    0   512    48
                     D001   8F  SCSIA    3339   1230.2      0.0      0.0      0.0   11  11  11    0   512    48

DEVICE STATUS
-------------

                                                    CKD   CKD  SCSI   SCSI  PPRC
VOLSER  UNIT  FDID   T/P  CA  DFW  ECAM  COMM  ENABL  R/W  ENABL  R/W   STAT
------  ----  ----   ---  --  ---  ----  ----  -----  ---  -----  ---   ----
               86    P    Y   Y    N     N     N      N    N      N       S
               87    P    Y   Y    N     N     N      N    N      N       D
               88    P    Y   Y    N     N     Y      N    N      Y       S
               89    P    Y   Y    N     N     Y      Y    N      N       S
               8A    P    Y   Y    N     N     N      Y    N      N       S
               8B    P    Y   Y    N     N     N      N    N      N       S
               8C    P    Y   Y    N     N     N      Y    N      Y       D
               8D    P    Y   Y    N     N     Y      Y    N      N
               8E    P    Y   Y    N     N     Y      Y    N      N
               8F    P    Y   Y    N     N     Y      Y    N      N

CAPACITY SUMMARY
-------- -------
SELECTED DEVICES SUMMARY
========================
               SELECTED   FUNCTIONAL    ---- PHYSICAL CAP USED (MB) ---
   PARTITION   DEVICES    CAPACITY(MB)    SHARED     UNIQUE     TOTAL
   ----------  --------   ------------  ---------  ---------  ---------
   Production        16        79564.4        0.0        1.2        1.2
         Test         0            0.0        0.0        0.0        0.0
      Overall        16        79564.4        0.0        1.2        1.2

SUBSYSTEM SUMMARY
=================
               TOTAL    DISK ARRAY    TOTAL FUNC.   NET CAP.  NET CAP.  FREE_SPACE_PCT
   PARTITION   DEVICES  CAPACITY(MB)  CAPACITY(MB)  LOAD(MB)  LOAD PCT  COLL'D  UNCOLL
   ----------  -------  ------------  ------------  --------  --------  ------  ------
   Production       16       85899.3       79564.4   17569.5      20.5    79.5     0.0
         Test        0           0.0           0.0       0.0       0.0     0.0     0.0
      Overall       16       85899.3       79564.4   17569.5      20.5    79.5     0.0
```

Note: The terms appearing in the report are defined in “Definitions of LISTCFG Report Headings” on page 9-103.

Example 2.

The following subcommand requests a report on the functional devices defined to **MAZUMA** which is a V2Xf subsystem.

```
LISTCFG DEV (SUBSYS(MAZUMA) )
```

Here is an example of the report that might result.

```
REPORT DATE:  Mon Oct 27, 2003  12:49:17                    SVA SUBSYSTEM                    CRFUNDV   V03R01M00  PAGE 1

                                        FUNCTIONAL DEVICE CONFIGURATION REPORT

                            ************************************************************************
                            *  SITE NAME          = TESTSVA   *  FRAME SERIAL NUMBER = 481000007745  *
                            *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                            *  FUNCTIONAL DEVICES = 11        *  FUNCTIONAL CAPACITY = 17028.10      *
                            ************************************************************************

                                                  FUNCT.                                  ------- SCSI DEVICE -------
                                                 CAPACITY  -PHYSICAL CAP USE (MB)-    --- ADDRESS --- PHYSICAL CAP
 VOLSER   NAME   UNIT SSID FDID   TYPE   CYLS     (MB)    SHARED   UNIQUE   TOTAL    DOM TGT LUN INDX LBLKS LBPTK
 ------ -------- ---- ---- ----  -------- ----- --------  -------- -------- --------  --- --- --- ---- ----- -----
        ABC      7700 7700  700   33903    3339   2838.0      0.0      0.1      0.1
                      7700  701   33903    3339   2838.0      0.0      0.1      0.1
                      7700  702   33903    3339   2838.0      0.0      0.0      0.0
                      7700  708   33903    3339   2838.0      0.0      0.0      0.0
                      7700  709   33903    3339   2838.0      0.0      0.0      0.0
                      7700  7EF   33903    3339   2838.0      0.0      0.0      0.0
                      7700  7F0   33903       0      0.0      0.0      0.0      0.0
                      7700  7F1   33903       0      0.0      0.0      0.0      0.0
                      7700  7F2   33903       0      0.0      0.0      0.0      0.0
                      7700  7FE   33903       0      0.0      0.0      0.0      0.0
                      7700  7FF   33903       0      0.0      0.0      0.0      0.0

DEVICE STATUS
-------------

                                                    CKD   CKD  SCSI   SCSI  PPRC  PAV
VOLSER  UNIT  FDID   T/P  CA  DFW  ECAM  COMM  ENABL  R/W  ENABL  R/W   STAT  STATUS
------  ----  ----   ---  --  ---  ----  ----  -----  ---  -----  ---   ----  ------
        7700   700    P    Y   Y     Y     N     Y     Y     N     N           B(004)
               701    P    Y   Y     N     N     Y     Y     N     N           B(001)
               702    P    Y   Y     N     N     Y     Y     N     N           B
               708    P    Y   Y     N     N     Y     Y     N     N           B
               709    P    Y   Y     N     N     Y     Y     N     N           B
               7EF    P    Y   Y     N     N     Y     Y     N     N           B
               7F0    P    Y   Y     Y     N     Y     Y     N     N           A-700
               7F1    P    Y   Y     Y     N     Y     Y     N     N           A-700
               7F2    P    Y   Y     Y     N     Y     Y     N     N           A-700
               7FE    P    Y   Y     N     N     Y     Y     N     N           A-701
               7FF    P    Y   Y     Y     N     Y     Y     N     N           A-700

CAPACITY SUMMARY
-------- -------
SELECTED DEVICES SUMMARY
========================
                SELECTED   FUNCTIONAL    ---- PHYSICAL CAP USED (MB) ---
   PARTITION    DEVICES    CAPACITY(MB)    SHARED     UNIQUE     TOTAL
   ----------   --------   ------------  ---------  ---------  ---------
   Production         11        17028.1        0.0        0.2        0.2
         Test          0            0.0        0.0        0.0        0.0
      Overall         11        17028.1        0.0        0.2        0.2

SUBSYSTEM SUMMARY
=================
                TOTAL    DISK ARRAY    TOTAL FUNC.   NET CAP.  NET CAP.  FREE_SPACE_PCT
   PARTITION    DEVICES  CAPACITY(MB)  CAPACITY(MB)  LOAD(MB)  LOAD PCT  COLL'D  UNCOLL
   ----------   -------  ------------  ------------  --------  --------  ------  ------
   Production        11     1868659.8       17028.1     7353.2       0.4    99.6     0.1
         Test         0           0.0           0.0        0.0       0.0     0.0     0.0
      Overall        11     1868659.8       17028.1     7353.2       0.4    99.6     0.1
```

Note: The terms appearing in the report are defined in “Definitions of LISTCFG Report Headings” on page 9-103.

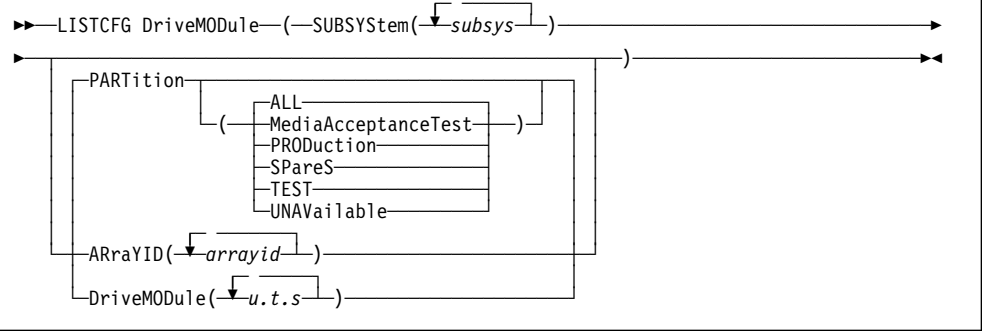
LISTCFG DRIVEMODULE Subcommand

*** *Subcommand of SIBADMIN***

The LISTCFG DRIVEMODULE subcommand produces a report showing the characteristics of one or more drive modules. The destination for the report (the terminal or a file) is determined by the OUTFILE parameter of the SET DESTINATION subcommand.

You can redirect the report output to a file (for later printing) by including the *redirection* option in the subcommand. For more information, see "Redirecting Subcommand Output" on page 9-8.

LISTCFG DRIVEMODULE



Parameters

SUBSYSTEM (subsys)

Required

This parameter specifies the names of the SVA subsystems containing the drive modules to be included in the report.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If a subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

You can use ranges, lists, and wildcard characters, however wildcard characters are not allowed in ranges.

Default value: None

Examples:
```
SUBSYSTEM(*)
SUBSYS(SUBSYS1 SUBSYS2)
SUBSYS(SUBSYS1:SUBSYS5)
SUBSYS(1SUBSYS)
```

ARRAYID (arrayid)

Conditional (This is one of a group of three parameters of which you can enter *only one*: ARYID, DMOD, or PART. If none is specified, the default is PART, and drive modules in all partitions will be included.)

This parameter specifies the arrays that contain the drive modules to be included in the report.

Abbreviation: **ARYID**

Values: *arrayid* (an integer from 0 to 7) is the array ID.

You can use ranges, lists, and wildcard characters.

Default value: None

Examples:
ARYID(0) (Drive modules in array 0)
ARYID(*) (Drive modules in all arrays)
ARYID(0:2) (Drive modules in arrays 0, 1, and 2)

DRIVEMODULE (u.t.s)

Conditional (This is one of a group of three parameters of which you can enter *only one*: ARYID, DMOD, or PART. If none is specified, the default is PART, and drive modules in all partitions will be included.)

This parameter specifies the drive modules to be included in the report.

Abbreviation: **DMOD**

Values: *u.t.s* (3 digits separated by periods) identifies a specific drive module, where:

u identifies the disk array unit (0 to 3)
t identifies the tray (0 to 3)
s identifies the slot (0 to 7)

You can use ranges, lists, and wildcard characters, however wildcard characters are not allowed in ranges.

Default value: None

Examples:
DRIVEMODULE(1.3.2)
DRIVEMODULE(1.3.2 1.3.3 1.3.4 1.2.?)
DMOD(1.3.*)
DMOD(0.0.0:0.2.7)

PARTITION ({ALL MAT PROD SPS TEST UNAV})

Conditional (This is one of a group of three parameters of which you can enter *only one*: ARYID, DMOD, or PART. If none is specified, the default is PART, and drive modules in all partitions will be included.)

This parameter specifies the partitions that contain the drive modules to be included in the report.

Abbreviation: **PART**

Values: **ALL** specifies that the drive modules in *all* partitions are to be included in the report. **ALL** supersedes all other partition specifications.

MAT specifies the drive modules in the MAT partition.

PROD specifies the drive modules in the Production partition.

SPS specifies the drive modules in the Spares partition.

TEST specifies the drive modules in the Test partition.

UNAV specifies the drive modules in the Unavailable partition.

Default value: **ALL**

Examples: **PART(PROD MAT)** (Includes drive modules in Production and MAT partitions only)
PARTITION (Includes drive modules in all partitions)

Examples of LISTCFG DRIVEMODULE

Example 1.

The following subcommand requests a report on all drive modules in unit 0, tray 0, of SVA subsystem **LUNAR**.

```
LISTCFG DMOD (-
     SUBSYS(LUNAR)-
     DMOD(0.0.?) )
```

Here is an example of the report that might result.

```
REPORT DATE: Tue May  9, 2000 12:54:36                    SVA SUBSYSTEM                    CRPHYDEV V03R01L00    PAGE: 1

                                DRIVE MODULE CONFIGURATION REPORT

                    ****************************************************************************
                    *  SITE NAME        = STORTEK   *  FRAME SERIAL NUMBER = 430000000036    *
                    *  SUBSYSTEM NAME   = LUNAR     *  SUBSYSTEM MODEL     = 9500            *
                    *  AVAILABLE DRIVES = 32        *  PHYSICAL CAPACITY   = 291 (GB)        *
                    ****************************************************************************

                     DEVICE-LOCATION   SERIAL   DEVICE         CAPACITY   --DEVICE TYPE---
                     UNIT TRAY SLOT    NUMBER   STATUS  ARRAY    (MB)     CLASS  SUB-CLASS
                     ---- ---- ----   --------  ------  -----  ---------  -----  ---------
 SELECTED DEVICES     0    0    0     00572936  P.A       0       9091.4     0        5
                      0    0    1     00572895  P.A       1       9091.4     0        5
                      0    0    2     00573018  P.A       0       9091.4     0        5
                      0    0    3     00574639  P.A       0       9091.4     0        5
                      0    0    4     00572937  P.A       0       9091.4     0        5
                      0    0    5     00572897  P.A       0       9091.4     0        5
                      0    0    6     00573015  P.A       0       9091.4     0        5
                      0    0    7     00572932  P.A       0       9091.4     0        5
                            SELECTED DEVICES        TOTAL PHYSICAL CAPACITY =       72.7

                                                    TOTAL PHYSICAL CAPACITY =       72.7
```

Note: The terms appearing in the report are defined in “Definitions of LISTCFG Report Headings” on page 9-103.

Example 2.

The following subcommand requests a report on all drive modules in the Spares partition and Production partition in SVA subsystem **V2XSYS01**.

```
LISTCFG DMOD (-
     SUBSYS(V2XSYS01)-
     PART(SPS PROD) )
```

Here is an example of the report.

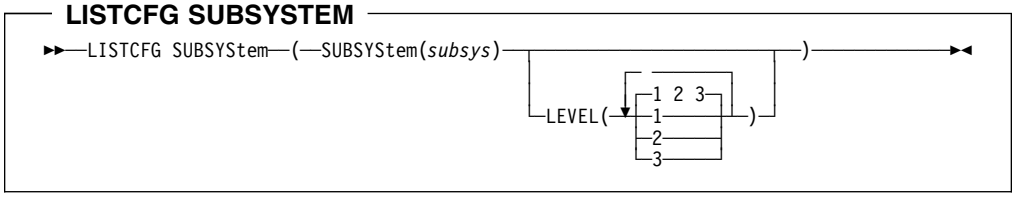
```
REPORT DATE: Wed Aug 28, 2002 09:44:40                  SVA SUBSYSTEM                  CRPHYDEV V03R01L00    PAGE: 1

                                  DRIVE MODULE CONFIGURATION REPORT

                    ************************************************************************
                    *  SITE NAME        = StorTek   *  FRAME SERIAL NUMBER = 481000007025    *
                    *  SUBSYSTEM NAME   = V2XSYS01  *  SUBSYSTEM MODEL     = V2X             *
                    *  AVAILABLE DRIVES = 32        *  PHYSICAL CAPACITY   = 1148(GB)        *
                    ************************************************************************

                     DEVICE-LOCATION   SERIAL   DEVICE         CAPACITY   --DEVICE TYPE---
                     UNIT TRAY SLOT    NUMBER   STATUS  ARRAY    (MB)     CLASS  SUB-CLASS
                     ---- ---- ----   --------  ------  -----  ---------  -----  ---------
 SPARES PARTITION     0    1    7     00008490   S.A      -      35879.0     0        7
                      0    3    6     00011719   S.A      -      35879.0     0        7
                              SPARES PARTITION        TOTAL PHYSICAL CAPACITY =       71.8

 PRODUCTION PARTITION 0    0    0     00009331   P.A      0      35879.0     0        7
                      0    0    1     00011789   P.A      0      35879.0     0        7
                      0    0    2     00011024   P.A      0      35879.0     0        7
                      0    0    3     00011772   P.A      0      35879.0     0        7
                      0    0    4     00010571   P.A      0      35879.0     0        7
                      0    0    5     00010674   P.A      0      35879.0     0        7
                      0    0    6     00011792   P.A      0      35879.0     0        7
                      0    0    7     00011802   P.A      0      35879.0     0        7
                      0    1    0     00009644   P.A      0      35879.0     0        7
                      0    1    1     00010219   P.A      0      35879.0     0        7
                      0    1    2     00010216   P.A      0      35879.0     0        7
                      0    1    3     00011710   P.A      0      35879.0     0        7
                      0    1    4     00010572   P.A      0      35879.0     0        7
                      0    1    5     00008964   P.A      0      35879.0     0        7
                      0    1    6     00011734   P.A      0      35879.0     0        7
                      0    2    0     00008682   P.A      1      35879.0     0        7
                      0    2    1     00011736   P.A      1      35879.0     0        7
                      0    2    2     00011509   P.A      1      35879.0     0        7
                      0    2    3     00010384   P.A      1      35879.0     0        7
                      0    2    4     00011096   P.A      1      35879.0     0        7
                      0    2    5     00011720   P.A      1      35879.0     0        7
                      0    2    6     00011766   P.A      1      35879.0     0        7
                      0    2    7     00010565   P.A      1      35879.0     0        7
                      0    3    0     00011790   P.A      1      35879.0     0        7
                      0    3    1     00011780   P.A      1      35879.0     0        7
                      0    3    2     00011894   P.A      1      35879.0     0        7
                      0    3    3     00010223   P.A      1      35879.0     0        7
                      0    3    4     00011800   P.A      1      35879.0     0        7
                      0    3    5     00009510   P.A      1      35879.0     0        7
                      0    3    7     00009365   P.A      1      35879.0     0        7
                              PRODUCTION PARTITION    TOTAL PHYSICAL CAPACITY =     1076.4

                                                      TOTAL PHYSICAL CAPACITY =     1148.1
```

LISTCFG SUBSYSTEM Subcommand

***** ***Subcommand of SIBADMIN***

The LISTCFG SUBSYSTEM subcommand provides three types (or levels) of SVA subsystem reports: on functional devices, channel interfaces, and drive modules. You can specify one, two, or all three report types. The destination for the report (the terminal or a file) is determined by the OUTFILE parameter of the SET DESTINATION subcommand.

You can redirect the report output to a file (for later printing) by including the *redirection* option in the subcommand. For more information, see “Redirecting Subcommand Output” on page 9-8.



Parameters

SUBSYSTEM (subsys)

Required

This parameter specifies the names of the SVA subsystems for which a report is to be produced.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If a subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

You can use ranges, lists, and wildcard characters.

Default value: None

Examples:
```
SUBSYSTEM(*)
SUBSYS(SUBSYS1 SUBSYS2)
SUBSYS(SUBSYS1:SUBSYS5)
SUBSYS(1SUBSYS)
```

LEVEL (1 2 3)

Optional

This parameter specifies the level of reporting. One or more levels of reporting can be requested at one time.

Values: **1** provides information on functional device configuration.
2 provides information on cache and channel configuration.
3 provides information on drive module configuration.

A duplicate level entry, such as **LEVEL(1 1)**, is ignored.

Default value: **1 2 3**

Examples:
```
LEVEL(1)
LEVEL(3 2 1)
```

Example of LISTCFG SUBSYSTEM for non-V2Xf subsystems

The following subcommand requests a report on all three levels on the SVA subsystem **V2XSYS01** which is a non-PAV subsystem.

```
LISTCFG SUBSYS(SUBSYS(V2XSYS01) )
```

On the following pages is an example of the report. For an example of a V2Xf report with PAV devices, see “Example of LISTCFG SUBSYSTEM for V2Xf subsystems” on page 9-78.

Note: The terms appearing in the report are defined in “Definitions of LISTCFG Report Headings” on page 9-103.

```
REPORT DATE:  Wed Aug 28, 2002  09:44:40                  SVA SUBSYSTEM                        CRLEVL1   V03R01L00  PAGE 2

                                        FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                                ************************************************************************
                                *  SITE NAME          = StorTek   *  FRAME SERIAL NUMBER = 481000007025  *
                                *  SUBSYSTEM NAME     = V2XSYS01  *  SUBSYSTEM MODEL     = V2X           *
                                *  FUNCTIONAL DEVICES = 3381      *  FUNCTIONAL CAPACITY = 9637245.71    *
                                ************************************************************************

                                                    FUNCT.                                  ------- SCSI DEVICE -------
                                                   CAPACITY  -PHYSICAL CAP USE (MB)-    --- ADDRESS --- PHYSICAL CAP
 VOLSER   NAME   UNIT SSID FDID   TYPE   CYLS      (MB)    SHARED   UNIQUE   TOTAL    DOM TGT LUN INDX LBLKS LBPTK
 ------ -------- ---- ---- ----  ------- -----  --------  -------- -------- --------  --- --- --- ---- ----- -----

 SWAC00 TEST0000 AC00 0200   00  33903    3339   2838.0      0.0      0.2      0.2
        TEST0001      0200   01  33903    3339   2838.0      0.0     49.4     49.4
        TEST0002      0200   02  33903    3339   2838.0      0.0     10.3     10.3
        TESE0003      0200   03  33903    3339   2838.0      0.0      5.1      5.1
        TEST0004      0200   04  33903    3339   2838.0      0.0      0.2      0.2
   ⋮
        SWBB00        BB00  B00  SCSIA    3339   2460.3      0.0      0.8      0.8    4   0   0    0  4096    12
        d12ecam       BB00  B01  SCSIA    3339   2460.3      0.0      0.0      0.0   12   0   0    0  4096    12
        d13ecam       BB00  B02  SCSIA    3339   2460.3      0.0      0.0      0.0   13   0   0    0  4096    12
        AlLgSrc       BB00  B10  SCSIA    3339   2460.3      0.0     12.3     12.3    4   0  10    0  4096    12
        AlLgSrc       BB00  B11  SCSIA    3339   2460.3      0.0      0.7      0.7    4   0  10    1  4096    12
   ⋮
        FIDO     BFFC BF00  FFB  33903    3339   2838.0      0.0    124.5    124.5
        SMOKEY   BFFC BF00  FFC  33903    3339   2838.0      0.0    287.9    287.9
        TIGER    BFFD BF00  FFD  33903    3339   2838.0      0.0    716.8    716.8
        BARNEY   BFFE BF00  FFE  33903    3339   2838.0      0.0      0.4      0.4
 SWBFFF ZIGGY    BFFF BF00  FFF  33903    3339   2838.0      0.0      0.2      0.2

DEVICE STATUS
-------------
                                                    CKD   CKD  SCSI   SCSI  PPRC
VOLSER  UNIT  FDID   T/P  CA  DFW  ECAM  COMM  ENABL  R/W  ENABL  R/W   STAT
------  ----  ----   ---  --  ---  ----  ----  -----  ---  -----  ---   ----

SWAC00  AC00    00    P    Y   Y     Y     Y     Y     Y     N     N
                01    P    Y   Y     Y     N     Y     Y     N     N
                02    P    Y   Y     Y     N     Y     Y     N     N
                03    P    Y   Y     Y     N     Y     Y     N     N
                04    P    Y   Y     N     N     Y     Y     N     N
   ⋮
              B00    P    Y   Y     Y     N     N     N     Y     Y
              B01    P    Y   Y     Y     N     N     N     Y     Y
              B02    P    Y   Y     Y     N     N     N     Y     Y
              B10    P    Y   Y     N     N     N     N     Y     Y
              B11    P    Y   Y     N     N     N     N     Y     Y
   ⋮
        BFFB   FFB    P    Y   Y     N     N     Y     Y     N     N
        BFFC   FFC    P    Y   Y     N     N     Y     Y     N     N
        BFFD   FFD    P    Y   Y     N     N     Y     Y     N     N
        BFFE   FFE    P    Y   Y     N     N     Y     Y     N     N
SWBFFF  BFFF   FFF    P    Y   Y     N     N     Y     Y     N     N

CAPACITY SUMMARY
-------- -------
SELECTED DEVICES SUMMARY
========================
              SELECTED   FUNCTIONAL    ---- PHYSICAL CAP USED (MB) ---
   PARTITION  DEVICES    CAPACITY(MB)    SHARED     UNIQUE     TOTAL
   ---------- --------   ------------  ---------  ---------  ---------
   Production     3381      9637245.7     1565.8     5149.2     6715.0
         Test        0            0.0        0.0        0.0        0.0
      Overall     3381      9637245.7     1565.8     5149.2     6715.0

SUBSYSTEM SUMMARY
=================
              TOTAL    DISK ARRAY    TOTAL FUNC.   NET CAP.  NET CAP.  FREE_SPACE_PCT
   PARTITION  DEVICES  CAPACITY(MB)  CAPACITY(MB)  LOAD(MB)  LOAD PCT  COLL'D  UNCOLL
   ---------- -------  ------------  ------------  --------  --------  ------  ------
   Production     3381      932853.8     9637245.7   12316.8       1.3    98.5     0.1
         Test        0           0.0           0.0       0.0       0.0     0.0     0.0
      Overall     3381      932853.8     9637245.7   12316.8       1.3    98.5     0.1
```

```
REPORT DATE: Wed Aug 28, 2002 09:44:40                    SVA SUBSYSTEM                CRLEVEL2 V03R01L00   PAGE: 1

                                          CHANNEL CONFIGURATION REPORT (LEVEL 2)

                          ************************************************************************
                          *  SITE NAME       = StorTek   *  FRAME SERIAL NUMBER = 481000007025  *
                          *  SUBSYSTEM NAME  = V2XSYS01  *  SUBSYSTEM MODEL     = V2X           *
                          *  NO. OF CHANNELS = 20        *  SITE LOCATION NO.   = 0             *
                          ************************************************************************
CACHE INFORMATION                                                                                 GENERAL INFORMATION
----- -----------                                                                                 ------- -----------
CACHE SIZE               =    8192
NVS SIZE                 =     128


          INTERFACE  --- CHANNEL INTERFACE ---  --- CHANNEL ---   BASE
            NAME     CLUSTER    ID     ENABLED    TYPE    SPEED   IDID  RANGE  FDID
          ---------  -------  -------  -------  --------  -----   ----  -----  ----
          CHAN_0.A      0        A        Y     ESCON      20.0     00   4096    00
                        0        B        Y     ESCON      20.0     00   4096    00
          WARTHOG       0        C        Y     ESCON      20.0     00   4096    00
                        0        D        Y     ESCON      20.0     00   4096    00
                        0        E        Y     ESCON      20.0     00   4096    00
                        0        G        Y     ESCON      20.0     00   4096    00
                        1        A        Y     ESCON      20.0     00   4096    00
                        1        B        Y     ESCON      20.0     00   4096    00
                        1        C        Y     ESCON      20.0     00   4096    00
                        1        D        Y     ESCON      20.0     00   4096    00
                        1        E        Y     ESCON      20.0     00   4096    00
          RODENT        1        G        Y     ESCON      20.0     00   4096    00
                        1        M        N     UNINSTAL   20.0


          INTERFACE  --- CHANNEL INTERFACE ---  --- CHANNEL ---   SCSI       WORLD WIDE
            NAME     CLUSTER    ID     ENABLED    TYPE    SPEED  DOMAIN      NODE NAME         PORT NAME      ADDRESS
          ---------  -------  -------  -------  --------  -----  -------  ----------------  ----------------  --------
                        0        I        Y     FIBRE     100.0  004      500104F00045CB34  500104F00046128A  00000004
          SQUAINK       0        K        Y     FIBRE     100.0
                        0        M        Y     FIBRE     100.0  006      500104F00045CB36  500104F0004612F0  00000006
                        0        O        Y     FIBRE     100.0
                        1        I        Y     FIBRE     100.0  012      500104F00045CB3C  500104F000461348  0000007E
                        1        K        Y     FIBRE     100.0  013      500104F00045CB3D  500104F000461349  0000007E
                        1        O        Y     FIBRE     100.0  015      500104F00045CB3F  500104F0004613A3  0000007E


REPORT DATE: Wed Aug 28, 2002 09:44:40                    SVA SUBSYSTEM                CRLEVEL3 V03R01L00   PAGE: 1

                                       DRIVE MODULE CONFIGURATION REPORT (LEVEL 3)

                        ************************************************************************
                        *  SITE NAME        = StorTek   *  FRAME SERIAL NUMBER = 481000007025  *
                        *  SUBSYSTEM NAME   = V2XSYS01  *  SUBSYSTEM MODEL     = V2X           *
                        *  DRIVE MODULES    = 32        *  PHYSICAL CAPACITY   = 1148.1(GB)     *
                        ************************************************************************

GENERAL INFORMATION
------- -----------
          NUMBER OF SPARES             = 2
          NUMBER OF ARRAYS             = 2        DEFAULT GLOBAL SPARES  = 1           DEFAULT ARRAY SIZE        = 13+2
          NUMBER OF FUNCTIONAL DEVICES = 4096     CACHE SIZE             = 8192        NVS SIZE                  = 128
          REMOTE OPERATOR PANEL STATUS = ENABLED  CSRC STATUS            = Full        SCSI SIMS STATUS          = ENABLED
          NUMBER OF SCSI DOMAINS       = 16       NUMBER OF SCSI TARGETS = 16          NUMBER OF SCSI LUNS       = 256
          COPYLIM                      = 0
          TOT VIRT CYLINDERS = 27353088           CONFIG VIRT CYLS = 6115596           UNCONFIG VIRTCYLS = 21237492

          SUBSYSTEM IDENTIFIERS =

              0200   AD00   AE00   AF00   B400   B500   B600   B700   B800   B900   BA00   BB00   BC00   BD00   BE00   BF00

SUPPORTED FEATURES
--------- --------
          Maintenance                          SnapShot
```

```
REVISION LEVEL INFORMATION
-------- ----- -----------
          COMPONENT ID = SRL                    COMPONENT LEVEL = B01110700
          COMPONENT ID = ISP                    COMPONENT LEVEL =
          COMPONENT ID = IUP                    COMPONENT LEVEL =
          COMPONENT ID = CIP                    COMPONENT LEVEL =
          COMPONENT ID = FIP                    COMPONENT LEVEL =

DRIVE MODULE INFORMATION
----- ------ -----------

                      DEVICE-LOCATION   SERIAL   DEVICE         CAPACITY   --DEVICE TYPE---
                      UNIT TRAY SLOT    NUMBER   STATUS  ARRAY    (MB)     CLASS  SUB-CLASS
                      ---- ---- ----   --------  ------  -----  ---------  -----  ---------
 UNAVAILABLE PARTITION  1    0    0     00000000   U.N      -          0.0     0        0
                        1    0    1     00000000   U.N      -          0.0     0        0
                        1    0    2     00000000   U.N      -          0.0     0        0
                        1    0    3     00000000   U.N      -          0.0     0        0
                        1    0    4     00000000   U.N      -          0.0     0        0
                        1    0    5     00000000   U.N      -          0.0     0        0
                        1    0    6     00000000   U.N      -          0.0     0        0
   ⋮
                        3    3    4     00000000   U.N      -          0.0     0        0
                        3    3    5     00000000   U.N      -          0.0     0        0
                        3    3    6     00000000   U.N      -          0.0     0        0
                        3    3    7     00000000   U.N      -          0.0     0        0
                                 UNAVAILABLE PARTITION   TOTAL PHYSICAL CAPACITY =        0.0

 MAT PARTITION                    Contains No Drives

 SPARES PARTITION       0    1    7     00008490   S.A      -      35879.0     0        7
                        0    3    6     00011719   S.A      -      35879.0     0        7
                                 SPARES PARTITION        TOTAL PHYSICAL CAPACITY =    71758.0

 TEST PARTITION                   Contains No Drives

 PRODUCTION PARTITION   0    0    0     00009331   P.A      0      35879.0     0        7
                        0    0    1     00011789   P.A      0      35879.0     0        7
                        0    0    2     00011024   P.A      0      35879.0     0        7
                        0    0    3     00011772   P.A      0      35879.0     0        7
                        0    0    4     00010571   P.A      0      35879.0     0        7
                        0    0    5     00010674   P.A      0      35879.0     0        7
                        0    0    6     00011792   P.A      0      35879.0     0        7
                        0    0    7     00011802   P.A      0      35879.0     0        7
                        0    1    0     00009644   P.A      0      35879.0     0        7
                        0    1    1     00010219   P.A      0      35879.0     0        7
                        0    1    2     00010216   P.A      0      35879.0     0        7
                        0    1    3     00011710   P.A      0      35879.0     0        7
                        0    1    4     00010572   P.A      0      35879.0     0        7
                        0    1    5     00008964   P.A      0      35879.0     0        7
                        0    1    6     00011734   P.A      0      35879.0     0        7
                        0    2    0     00008682   P.A      1      35879.0     0        7
                        0    2    1     00011736   P.A      1      35879.0     0        7
                        0    2    2     00011509   P.A      1      35879.0     0        7
                        0    2    3     00010384   P.A      1      35879.0     0        7
                        0    2    4     00011096   P.A      1      35879.0     0        7
                        0    2    5     00011720   P.A      1      35879.0     0        7
                        0    2    6     00011766   P.A      1      35879.0     0        7
                        0    2    7     00010565   P.A      1      35879.0     0        7
                        0    3    0     00011790   P.A      1      35879.0     0        7
                        0    3    1     00011780   P.A      1      35879.0     0        7
                        0    3    2     00011894   P.A      1      35879.0     0        7
                        0    3    3     00010223   P.A      1      35879.0     0        7
                        0    3    4     00011800   P.A      1      35879.0     0        7
                        0    3    5     00009510   P.A      1      35879.0     0        7
                        0    3    7     00009365   P.A      1      35879.0     0        7
                                 PRODUCTION PARTITION    TOTAL PHYSICAL CAPACITY =  1076369.8

                                                         TOTAL PHYSICAL CAPACITY =  1148127.8
```

```
ARRAY INFORMATION
----- -----------

                                  FORMATION   SPARE(S)  TWO DRIVE  GROUP DRAIN      D E V I C E    S T A T U S E S
         ARRAY  PARTITION  CONFIG  IN PROGRESS   NEEDED    FAILURE     STATUS      INITIALIZING  DRAINING  RECONSTRUCTION
         -----  ---------  ------  -----------  --------  ---------  -----------   ------------  --------  --------------
           0   PRODUCTION   13+2       NO          NO        NO          N.A.           NO         N.A.         N.A.
           1   PRODUCTION   13+2       NO          NO        NO          N.A.           NO         N.A.         N.A.
           2              H a s   N o t   B e e n   C o n f i g u r e d
           3              H a s   N o t   B e e n   C o n f i g u r e d
           4              H a s   N o t   B e e n   C o n f i g u r e d
           5              H a s   N o t   B e e n   C o n f i g u r e d
           6              H a s   N o t   B e e n   C o n f i g u r e d
           7              H a s   N o t   B e e n   C o n f i g u r e d
```

Example of LISTCFG SUBSYSTEM for V2Xf subsystems

The following subcommand requests a report on all three levels on the SVA V2Xf subsystem **MAZUMA**. This subsystem has PAV devices.

LISTCFG SUBSYS(SUBSYS(MAZUMA))

Note: The terms appearing in the report are defined in “Definitions of LISTCFG Report Headings” on page 9-103.

```
REPORT DATE:  Mon Dec  8, 2003  10:42:20                  SVA SUBSYSTEM                    CRLEVL1   V03R01L00  PAGE 1

                                        FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                                 ************************************************************************
                                 *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                                 *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                                 *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                                 ************************************************************************

                                                    FUNCT.                                    ------- SCSI DEVICE -------
                                                   CAPACITY  -PHYSICAL CAP USE (MB)-    --- ADDRESS --- PHYSICAL CAP
 VOLSER   NAME   UNIT SSID FDID   TYPE   CYLS    (MB)    SHARED   UNIQUE   TOTAL    DOM TGT LUN INDX LBLKS LBPTK
 ------ -------- ---- ---- ----  ------- -----  -------- -------- -------- --------  --- --- --- ---- ----- -----

 SW7000 ECA000   7000 7000   00  33903    3339   2838.0      0.0      0.2      0.2
        ECA001        7000   01  33903    3339   2838.0      0.0      0.0      0.0
        ECA002        7000   02  33903    3339   2838.0      0.0      0.0      0.0
        ECA003        7000   03  33903    3339   2838.0      0.0      0.3      0.3
        SW7007        7000   07  33903    3339   2838.0      0.0      0.3      0.3
        SW7008        7000   08  33903    3339   2838.0      0.0      0.3      0.3
        SW7009        7000   09  33903    3339   2838.0      0.0      0.3      0.3
        SW700A        7000   0A  33903    3339   2838.0      0.0      0.3      0.3
        SW700B        7000   0B  33903    3339   2838.0      0.0      0.3      0.3
        ECA0C         7000   0C  33903    3339   2838.0      0.0      0.1      0.1
        NAMEVAR       7000   0D  33903    3339   2838.0      0.0      0.1      0.1
        ECA0E         7000   0E  33903    3339   2838.0      6.1      0.1      6.2
        ECA0F         7000   0F  33903    3339   2838.0     36.9     12.4     49.2
                      7000   50  3380J     885    630.2      0.0      0.5      0.5
        SAMPLE        7000   51  33901    1113    946.0      0.0      0.3      0.3
        SAMPLE        7000   52  33901    1113    946.0      0.0      0.3      0.3
        SAMPLE        7000   53  33901    1113    946.0      0.0      0.3      0.3
        SAMPLE        7000   54  33901    1113    946.0      0.0      0.3      0.3
        SAMPLE        7000   55  33901    1113    946.0      0.0      0.3      0.3
                      7000   56  3380J     885    630.2      0.0      0.5      0.5
        SW7075        7000   75  33903    3339   2838.0    783.0      0.0    783.0
        SW7076        7000   76  33903    3339   2838.0      0.0    103.8    103.8
        SW7077        7000   77  33903    3339   2838.0    659.1      0.0    659.1
        SW7078        7000   78  33903    3339   2838.0      0.0    783.0    783.0
        SW7079        7000   79  33903    3339   2838.0    783.0      0.0    783.0
        SW707A        7000   7A  33903    3339   2838.0      0.0    783.0    783.0
        SW707B        7000   7B  33903    3339   2838.0    783.0      0.0    783.0
        SW707C        7000   7C  33903    3339   2838.0      0.0      0.3      0.3
        SW707D        7000   7D  33903    3339   2838.0      0.0      0.3      0.3
        SW707E        7000   7E  33903    3339   2838.0      0.0      0.3      0.3
        SW707F        7000   7F  33903    3339   2838.0      0.0      0.3      0.3
        SW7080        7000   80  33909   10017   8514.0      0.0      0.3      0.3
        SW7081        7000   81  33903    3339   2838.0    783.0      0.0    783.0
        SW7082        7000   82  33903    3339   2838.0    783.0      0.0    783.0
        SW7083        7000   83  33903    3339   2838.0    783.0      0.0    783.0
        SW7084        7000   84  33903    3339   2838.0    783.0      0.0    783.0
        SW7085        7000   85  33903    3339   2838.0      0.0    783.0    783.0
        SW7086        7000   86  33903    3339   2838.0      0.0      0.0      0.0
        SW7087        7000   87  33903    3339   2838.0    659.1      0.0    659.1
        SW7088        7000   88  33903    3339   2838.0    783.0      0.0    783.0
```

```
REPORT DATE:  Mon Dec  8, 2003  10:42:20                  SVA SUBSYSTEM                      CRLEVL1   V03R01L00  PAGE 2

                                        FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                                 ************************************************************************
                                 *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                                 *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                                 *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                                 ************************************************************************

                                                        FUNCT.                                  ------- SCSI DEVICE -------
                                                       CAPACITY  -PHYSICAL CAP USE (MB)-    --- ADDRESS --- PHYSICAL CAP
 VOLSER   NAME   UNIT SSID FDID   TYPE   CYLS    (MB)    SHARED   UNIQUE   TOTAL    DOM TGT LUN INDX LBLKS LBPTK
 ------ -------- ---- ---- ----  ------- ----- -------- -------- -------- --------  --- --- --- ---- ----- -----

        SW7089        7000   89  33903    3339   2838.0      0.0      0.0      0.0
        SW708A        7000   8A  33903    3339   2838.0      0.0      0.0      0.0
        SW708B        7000   8B  33903    3339   2838.0    659.1      0.0    659.1
        SW708C        7000   8C  33903    3339   2838.0      0.0      0.0      0.0
                      7100  101  3380J     885    630.2      0.0      5.7      5.7
                      7100  102  3380J     885    630.2      0.0      0.0      0.0
                      7100  103  3380J     885    630.2      0.0      0.0      0.0
                      7100  104  3380J     885    630.2      0.0      0.0      0.0
                      7100  105  3380J     885    630.2      0.0      0.0      0.0
                      7100  106  3380J     885    630.2      0.0      0.0      0.0
                      7100  107  3380J     885    630.2      0.0      0.0      0.0
                      7100  108  3380J     885    630.2      0.0      0.0      0.0
                      7100  109  3380J     885    630.2      0.0      0.0      0.0
                      7100  10A  3380J     885    630.2      0.0      0.0      0.0
        SW710B        7100  10B  3380J     885    630.2      0.0      0.0      0.0
        SW710C        7100  10C  3380J     885    630.2      0.0      0.0      0.0
        SW710D        7100  10D  3380J     885    630.2      0.0      0.0      0.0
        SW710E        7100  10E  3380J     885    630.2      0.0      0.0      0.0
        SW710F        7100  10F  3380J     885    630.2      0.0      0.0      0.0
                      7100  153  3380J     885    630.2      0.0      0.5      0.5
                      7100  154  3380J     885    630.2      0.0      0.5      0.5
        SW7175        7100  175  3380J     885    630.2      0.0      0.0      0.0
        SW7176        7100  176  3380J     885    630.2      0.0      0.0      0.0
        SW7177        7100  177  3380J     885    630.2      0.0      0.0      0.0
        SW7178        7100  178  3380J     885    630.2      0.0      0.0      0.0
                      7200  202  33903    3339   2838.0    783.0      0.0    783.0
                      7200  203  33903    3339   2838.0      0.0      0.0      0.0
                      7200  204  33903    3339   2838.0      0.0      0.0      0.0
                      7200  205  33903    3339   2838.0      0.0      0.0      0.0
                      7200  206  33903    3339   2838.0      0.0      0.0      0.0
                      7200  207  33903    3339   2838.0      0.0      0.0      0.0
                      7200  208  33903    3339   2838.0      0.0      0.0      0.0
                      7200  209  33903    3339   2838.0      0.0      0.0      0.0
                      7200  20A  33903    3339   2838.0      0.1      0.1      0.1
                      7200  20B  33903    3339   2838.0      0.0      0.3      0.3
                      7200  20C  33903    3339   2838.0      0.0      0.3      0.3
                      7200  20D  33903    3339   2838.0      0.0      0.3      0.3
                      7200  20E  33903    3339   2838.0      0.0      0.3      0.3
                      7200  20F  33903    3339   2838.0      0.0      0.3      0.3
                      7200  210  33903    3339   2838.0      0.0      0.3      0.3
```

LISTCFG SUBSYSTEM for V2Xf subsystems

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REPORT DATE:  Mon Dec  8, 2003  10:42:20                  SVA SUBSYSTEM                        CRLEVL1   V03R01L00  PAGE 3

                                        FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                                 ************************************************************************
                                 *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                                 *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                                 *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                                 ************************************************************************

                                                        FUNCT.                                  ------- SCSI DEVICE -------
                                                       CAPACITY  -PHYSICAL CAP USE (MB)-    --- ADDRESS --- PHYSICAL CAP
 VOLSER   NAME   UNIT SSID FDID   TYPE   CYLS    (MB)    SHARED   UNIQUE   TOTAL    DOM TGT LUN INDX LBLKS LBPTK
 ------ -------- ---- ---- ----  ------- ----- -------- -------- -------- --------  --- --- --- ---- ----- -----

        DJTEST        7200  269  33902    2226   1892.0      0.0      0.0      0.0
        SW7275        7200  275  33909   10017   8514.0      0.0      0.0      0.0
        SW7276        7200  276  33909   10017   8514.0      0.0      0.0      0.0
        SW7277        7200  277  33909   10017   8514.0      0.0      0.0      0.0
        SW7278        7200  278  33909   10017   8514.0      0.0      0.0      0.0
        SW7300        7300  300  33903    3339   2838.0      0.0    659.1    659.1
        SW7301        7300  301  33909   10017   8514.0    783.0      0.0    783.0
        SW7302        7300  302  33909   10017   8514.0    783.0      0.0    783.0
        SW7303        7300  303  33909   10017   8514.0      0.0      0.3      0.3
        SW7304        7300  304  33909   10017   8514.0      0.0      0.3      0.3
        SW7305        7300  305  33909   10017   8514.0      0.0      0.3      0.3
        SW7306        7300  306  33909   10017   8514.0      0.0      0.3      0.3
        SW7307        7300  307  33903    3339   2838.0      0.0      0.3      0.3
        SW7308        7300  308  33903    3339   2838.0      0.0      0.3      0.3
        SW7309        7300  309  33903    3339   2838.0      0.0      0.3      0.3
        SW730A        7300  30A  33903    3339   2838.0      0.0      0.3      0.3
        SW730B        7300  30B  33903    3339   2838.0      0.0      0.3      0.3
        SW730C        7300  30C  33903    3339   2838.0      0.0      0.1      0.1
        SW730D        7300  30D  33903    3339   2838.0      0.0    656.2    656.2
        SW730E        7300  30E  33903    3339   2838.0      0.0    782.8    782.8
        SW730F        7300  30F  33903    3339   2838.0      0.0      0.0      0.0
        SW7700        7700  700  33903    3339   2838.0      0.0      0.1      0.1
        SW7701        7700  701  33903    3339   2838.0      0.0      0.1      0.1
        SW7703        7700  703  33903    3339   2838.0      0.0      0.3      0.3
        SW7704        7700  704  33903    3339   2838.0      0.0      0.0      0.0
        SW7705        7700  705  33903    3339   2838.0      0.0      0.0      0.0
        SW7706        7700  706  33903    3339   2838.0      0.0      0.0      0.0
        SW7707        7700  707  33903    3339   2838.0      0.0      0.0      0.0
                      7700  708  33903    3339   2838.0      0.0      0.0      0.0
                      7700  709  33903    3339   2838.0      0.0      0.0      0.0
                      7700  7EF  33903    3339   2838.0      0.0      0.0      0.0
                      7700  7FF  33903       0      0.0      0.0      0.0      0.0
                      7800  800  33903    3339   2838.0      0.0      0.1      0.1
                      7800  801  33903    3339   2838.0      0.0      0.1      0.1
        SW7802        7800  802  33909   10017   8514.0      1.3      0.0      1.3
        SW7803        7800  803  33909   10017   8514.0      0.0      0.1      0.1
        SW7804        7800  804  33909   10017   8514.0      1.3      0.0      1.3
        SW7805        7800  805  33909   10017   8514.0      0.0      0.1      0.1
        SW7806        7800  806  33909   10017   8514.0      0.0      0.1      0.1
        SW7807        7800  807  33909   10017   8514.0      0.0      0.1      0.1
```

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REPORT DATE:  Mon Dec  8, 2003  10:42:20                  SVA SUBSYSTEM                      CRLEVL1   V03R01L00  PAGE 4

                                    FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                            ************************************************************************
                            *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                            *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                            *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                            ************************************************************************

                                                    FUNCT.                                  ------- SCSI DEVICE -------
                                                   CAPACITY  -PHYSICAL CAP USE (MB)-    --- ADDRESS --- PHYSICAL CAP
 VOLSER   NAME   UNIT SSID FDID   TYPE   CYLS      (MB)    SHARED   UNIQUE   TOTAL    DOM TGT LUN INDX LBLKS LBPTK
------ -------- ---- ---- ----  ------- -----  --------  -------- -------- --------  --- --- --- ---- ----- -----

       SW7808        7800  808  33909   10017   8514.0      0.0      0.1      0.1
       SW7809        7800  809  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  80A  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  80B  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  80C  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  80D  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  80E  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  80F  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  810  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  811  33909   10017   8514.0      0.0    389.6    389.6
       SW780A        7800  812  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  813  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  814  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  815  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  816  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  817  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  818  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  819  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  81A  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  81B  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  81C  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  81D  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  81E  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  81F  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  820  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  821  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  822  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  823  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  824  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  825  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  826  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  827  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  828  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  829  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  82A  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  82B  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  82C  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  82D  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  82E  33909   10017   8514.0      0.0      0.1      0.1
       SW780A        7800  82F  33909   10017   8514.0      0.0      0.1      0.1
```

LISTCFG SUBSYSTEM for V2Xf subsystems

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REPORT DATE:  Mon Dec  8, 2003  10:42:20                  SVA SUBSYSTEM                        CRLEVL1   V03R01L00  PAGE 5

                                        FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                                 ************************************************************************
                                 *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                                 *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                                 *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                                 ************************************************************************

                                                    FUNCT.                                  ------- SCSI DEVICE -------
                                                   CAPACITY  -PHYSICAL CAP USE (MB)-    --- ADDRESS --- PHYSICAL CAP
 VOLSER   NAME   UNIT SSID FDID   TYPE   CYLS      (MB)    SHARED   UNIQUE   TOTAL    DOM TGT LUN INDX LBLKS LBPTK
 ------ -------- ---- ---- ----  ------- -----  --------  --------  --------  --------  --- --- --- ---- ----- -----

         SW780A       7800  830  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  831  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  832  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  833  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  834  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  835  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  836  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  837  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  838  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  839  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  83A  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  83B  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  83C  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  83D  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  83E  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  83F  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  840  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  841  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  842  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  843  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  844  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  845  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  846  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  847  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  848  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  849  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  84A  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  84B  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  84C  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  84D  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  84E  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  84F  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  850  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  851  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  852  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  853  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  854  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  855  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  856  33909   10017   8514.0      0.0       0.1      0.1
         SW780A       7800  857  33909   10017   8514.0      0.0       0.1      0.1
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REPORT DATE:  Mon Dec  8, 2003  10:42:20                  SVA SUBSYSTEM                      CRLEVL1   V03R01L00  PAGE 6

                                        FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                                *************************************************************************
                                *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                                *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                                *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                                *************************************************************************

                                                      FUNCT.                                  ------- SCSI DEVICE -------
                                                     CAPACITY  -PHYSICAL CAP USE (MB)-    --- ADDRESS --- PHYSICAL CAP
 VOLSER   NAME   UNIT SSID FDID   TYPE   CYLS    (MB)    SHARED   UNIQUE   TOTAL    DOM TGT LUN INDX LBLKS LBPTK
 ------ -------- ---- ---- ----  ------- ----- -------- -------- -------- --------  --- --- --- ---- ----- -----

          SW780A       7800  858  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  859  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  85A  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  85B  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  85C  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  85D  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  85E  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  85F  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  860  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  861  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  862  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  863  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  864  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  865  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  866  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  867  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  868  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  869  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  86A  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  86B  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  86C  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  86D  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  86E  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  86F  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  870  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  871  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  872  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  873  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  874  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  875  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  876  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  877  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  878  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  879  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  87A  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  87B  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  87C  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  87D  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  87E  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  87F  33909   10017   8514.0      0.0      0.1      0.1
```

LISTCFG SUBSYSTEM for V2Xf subsystems

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REPORT DATE:  Mon Dec  8, 2003  10:42:20                  SVA SUBSYSTEM                    CRLEVL1   V03R01L00  PAGE 7

                                        FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                                ************************************************************************
                                *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                                *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                                *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                                ************************************************************************

                                                      FUNCT.                                  ------- SCSI DEVICE -------
                                                     CAPACITY  -PHYSICAL CAP USE (MB)-    --- ADDRESS --- PHYSICAL CAP
 VOLSER   NAME   UNIT SSID FDID   TYPE   CYLS    (MB)    SHARED   UNIQUE   TOTAL    DOM TGT LUN INDX LBLKS LBPTK
 ------ -------- ---- ---- ----  ------- ----- -------- -------- -------- --------  --- --- --- ---- ----- -----

         SW780A       7800  880  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  881  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  882  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  883  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  884  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  885  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  886  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  887  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  888  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  889  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  88A  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  88B  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  88C  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  88D  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  88E  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  88F  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  890  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  891  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  892  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  893  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  894  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  895  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  896  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  897  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  898  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  899  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  89A  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  89B  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  89C  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  89D  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  89E  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  89F  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8A0  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8A1  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8A2  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8A3  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8A4  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8A5  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8A6  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8A7  33909   10017   8514.0      0.0      0.1      0.1
```

```
REPORT DATE:  Mon Dec  8, 2003  10:42:20                  SVA SUBSYSTEM                      CRLEVL1   V03R01L00  PAGE 8

                                        FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                                *************************************************************************
                                *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                                *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                                *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                                *************************************************************************

                                                      FUNCT.                                  ------- SCSI DEVICE -------
                                                     CAPACITY  -PHYSICAL CAP USE (MB)-    --- ADDRESS --- PHYSICAL CAP
 VOLSER   NAME   UNIT SSID FDID   TYPE   CYLS    (MB)    SHARED   UNIQUE   TOTAL    DOM TGT LUN INDX LBLKS LBPTK
 ------ -------- ---- ---- ----  ------- -----  -------- -------- -------- --------  --- --- --- ---- ----- -----

          SW780A       7800  8A8  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8A9  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8AA  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8AB  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8AC  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8AD  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8AE  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8AF  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8B0  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8B1  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8B2  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8B3  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8B4  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8B5  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8B6  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8B7  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8B8  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8B9  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8BA  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8BB  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8BC  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8BD  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8BE  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8BF  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8C0  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8C1  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8C2  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8C3  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8C4  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8C5  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8C6  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8C7  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8C8  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8C9  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8CA  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8CB  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8CC  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8CD  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8CE  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8CF  33909   10017   8514.0      0.0      0.1      0.1
```

LISTCFG SUBSYSTEM for V2Xf subsystems

```
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                                        FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                                *************************************************************************
                                *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                                *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                                *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                                *************************************************************************

                                                    FUNCT.                                  ------- SCSI DEVICE -------
                                                   CAPACITY  -PHYSICAL CAP USE (MB)-    --- ADDRESS --- PHYSICAL CAP
 VOLSER   NAME   UNIT SSID FDID   TYPE   CYLS      (MB)    SHARED   UNIQUE   TOTAL    DOM TGT LUN INDX LBLKS LBPTK
 ------ -------- ---- ---- ----  ------- -----  --------  -------- -------- --------  --- --- --- ---- ----- -----

         SW780A       7800  8D0  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8D1  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8D2  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8D3  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8D4  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8D5  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8D6  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8D7  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8D8  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8D9  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8DA  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8DB  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8DC  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8DD  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8DE  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8DF  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8E0  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8E1  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8E2  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8E3  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8E4  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8E5  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8E6  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8E7  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8E8  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8E9  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8EA  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8EB  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8EC  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8ED  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8EE  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8EF  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8F0  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8F1  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8F2  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8F3  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8F4  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8F5  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8F6  33909   10017   8514.0      0.0      0.1      0.1
         SW780A       7800  8F7  33909   10017   8514.0      0.0      0.1      0.1
```

```
REPORT DATE:  Mon Dec  8, 2003  10:42:20                  SVA SUBSYSTEM                    CRLEVL1   V03R01L00  PAGE 10

                                        FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                                ************************************************************************
                                *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                                *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                                *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                                ************************************************************************

                                                      FUNCT.                                  ------- SCSI DEVICE -------
                                                     CAPACITY  -PHYSICAL CAP USE (MB)-    --- ADDRESS --- PHYSICAL CAP
 VOLSER   NAME   UNIT SSID FDID   TYPE   CYLS    (MB)    SHARED   UNIQUE   TOTAL    DOM TGT LUN INDX LBLKS LBPTK
 ------ -------- ---- ---- ----  ------- ----- -------- -------- -------- --------  --- --- --- ---- ----- -----

          SW780A       7800  8F8  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8F9  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8FA  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8FB  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8FC  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8FD  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8FE  33909   10017   8514.0      0.0      0.1      0.1
          SW780A       7800  8FF  33909   10017   8514.0      0.0      0.1      0.1
          SW7F11       7F00  F11  33903    3339   2838.0      0.0      0.0      0.0
          SW7F12       7F00  F12  33903    3339   2838.0      0.0      0.0      0.0
          SW7F13       7F00  F13  33903    3339   2838.0      0.0      0.0      0.0
          SW7F14       7F00  F14  33903    3339   2838.0      0.0      0.0      0.0
          SW7F15       7F00  F15  33903    3339   2838.0      0.0      0.0      0.0
          SW7F16       7F00  F16  33903    3339   2838.0      0.0      0.0      0.0
          SW7F17       7F00  F17  33903    3339   2838.0      0.0      0.0      0.0
          SW7F18       7F00  F18  33903    3339   2838.0      0.0      0.0      0.0
          SW7F19       7F00  F19  33903    3339   2838.0      0.0      0.0      0.0

DEVICE STATUS
-------------
                                                    CKD   CKD  SCSI   SCSI  PPRC  PAV
VOLSER  UNIT  FDID   T/P  CA  DFW  ECAM  COMM  ENABL  R/W  ENABL  R/W   STAT  STATUS
------  ----  ----   ---  --  ---  ----  ----  -----  ---  -----  ---   ----  ------

SW7000  7000    00    P    Y   Y     Y     Y     Y     Y     N     N           B
                01    P    Y   Y     Y     N     Y     Y     N     N           B
                02    P    Y   Y     Y     N     Y     Y     N     N           B
                03    P    Y   Y     Y     N     Y     Y     N     N           B
                07    P    Y   Y     Y     N     Y     Y     N     N           B
                08    P    Y   Y     N     N     Y     Y     N     N     P     B
                09    P    Y   Y     N     N     Y     Y     N     N     P     B
                0A    P    Y   Y     N     N     Y     Y     N     N     P     B
                0B    P    Y   Y     N     N     Y     Y     N     N     P     B
                0C    P    Y   Y     N     N     Y     Y     N     N     P     B
                0D    P    Y   Y     N     N     Y     Y     N     N           B
                0E    P    Y   Y     N     N     Y     Y     N     N           B
                0F    P    Y   Y     N     N     Y     Y     N     N           B
                50    P    Y   Y     N     N     Y     Y     N     N     P     B
                51    P    Y   Y     N     N     Y     Y     N     N           B
                52    P    Y   Y     N     N     Y     Y     N     N           B
```

LISTCFG SUBSYSTEM for V2Xf subsystems

```
REPORT DATE:  Mon Dec  8, 2003  10:42:20                  SVA SUBSYSTEM                      CRLEVL1   V03R01L00  PAGE 11

                                        FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                                ************************************************************************
                                *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                                *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                                *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                                ************************************************************************


DEVICE STATUS
-------------
                                                                 CKD   CKD  SCSI   SCSI  PPRC  PAV
VOLSER  UNIT  FDID   T/P  CA  DFW  ECAM  COMM  ENABL  R/W  ENABL  R/W   STAT  STATUS
------  ----  ----   ---  --  ---  ----  ----  -----  ---  -----  ---   ----  ------

               53    P    Y   Y     N     N     Y     Y     N     N           B
               54    P    Y   Y     Y     N     Y     Y     N     N           B
               55    P    Y   Y     N     N     Y     Y     N     N           B
               56    P    Y   Y     N     N     Y     Y     N     N     P     B
               75    P    Y   Y     N     N     Y     Y     N     N     P     B
               76    P    Y   Y     N     N     Y     Y     N     N           B
               77    P    Y   Y     N     N     Y     Y     N     N           B
               78    P    Y   Y     N     N     Y     Y     N     N           B
               79    P    Y   Y     N     N     Y     Y     N     N           B
               7A    P    Y   Y     N     N     Y     Y     N     N           B
               7B    P    Y   Y     N     N     Y     Y     N     N           B
               7C    P    Y   Y     N     N     Y     Y     N     N     P     B
               7D    P    Y   Y     N     N     Y     Y     N     N     P     B
               7E    P    Y   Y     N     N     Y     Y     N     N           B
               7F    P    Y   Y     N     N     Y     Y     N     N           B
               80    P    Y   Y     N     N     Y     Y     N     N           B
               81    P    Y   Y     N     N     Y     Y     N     N     P     B
               82    P    Y   Y     N     N     Y     Y     N     N           B
               83    P    Y   Y     N     N     Y     Y     N     N     P     B
               84    P    Y   Y     N     N     Y     Y     N     N           B
               85    P    Y   Y     N     N     Y     Y     N     N           B
               86    P    Y   Y     N     N     Y     Y     N     N           B
               87    P    Y   Y     N     N     Y     Y     N     N           B
               88    P    Y   Y     N     N     Y     Y     N     N           B
               89    P    Y   Y     N     N     Y     Y     N     N           B
               8A    P    Y   Y     N     N     Y     Y     N     N           B
               8B    P    Y   Y     N     N     Y     Y     N     N     P     B
               8C    P    Y   Y     N     N     Y     Y     N     N           B
              101    P    Y   Y     N     N     Y     Y     N     N           B
              102    P    Y   Y     N     N     Y     Y     N     N           B
              103    P    Y   Y     N     N     Y     Y     N     N           B
              104    P    Y   Y     N     N     Y     Y     N     N           B
              105    P    Y   Y     N     N     Y     Y     N     N           B
              106    P    Y   Y     N     N     Y     Y     N     N           B
              107    P    Y   Y     N     N     Y     Y     N     N           B
              108    P    Y   Y     N     N     Y     Y     N     N           B
              109    P    Y   Y     N     N     Y     Y     N     N           B
              10A    P    Y   Y     N     N     Y     Y     N     N           B
```

```
REPORT DATE:  Mon Dec  8, 2003  10:42:20                  SVA SUBSYSTEM                      CRLEVL1   V03R01L00  PAGE 12

                                        FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                                 ************************************************************************
                                 *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                                 *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                                 *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                                 ************************************************************************


DEVICE STATUS
-------------
                                                                    CKD   CKD  SCSI   SCSI  PPRC  PAV
VOLSER  UNIT  FDID   T/P  CA  DFW  ECAM  COMM  ENABL  R/W  ENABL  R/W   STAT  STATUS
------  ----  ----   ---  --  ---  ----  ----  -----  ---  -----  ---   ----  ------

              10B    P    Y   Y     N     N     Y     Y     N     N           B
              10C    P    Y   Y     N     N     Y     Y     N     N           B
              10D    P    Y   Y     N     N     Y     Y     N     N           B
              10E    P    Y   Y     N     N     Y     Y     N     N           B
              10F    P    Y   Y     N     N     Y     Y     N     N           B
              153    P    Y   Y     N     N     Y     Y     N     N           B
              154    P    Y   Y     N     N     Y     Y     N     N           B
              175    P    Y   Y     N     N     Y     Y     N     N           B
              176    P    Y   Y     N     N     Y     Y     N     N           B
              177    P    Y   Y     N     N     Y     Y     N     N           B
              178    P    Y   Y     N     N     Y     Y     N     N           B
              202    P    Y   Y     N     N     Y     Y     N     N           B
              203    P    Y   Y     N     N     Y     Y     N     N           B
              204    P    Y   Y     N     N     Y     Y     N     N           B
              205    P    Y   Y     N     N     Y     Y     N     N           B
              206    P    Y   Y     N     N     Y     Y     N     N           B
              207    P    Y   Y     N     N     Y     Y     N     N           B
              208    P    Y   Y     N     N     Y     Y     N     N           B
              209    P    Y   Y     N     N     Y     Y     N     N           B
              20A    P    Y   Y     N     N     Y     Y     N     N           B
              20B    P    Y   Y     N     N     Y     Y     N     N           B
              20C    P    Y   Y     N     N     Y     Y     N     N           B
              20D    P    Y   Y     N     N     Y     Y     N     N           B
              20E    P    Y   Y     N     N     Y     Y     N     N           B
              20F    P    Y   Y     N     N     Y     Y     N     N           B
              210    P    Y   Y     N     N     Y     Y     N     N           B
              269    P    Y   Y     N     N     Y     Y     N     N           B
              275    P    Y   Y     N     N     Y     Y     N     N           B
              276    P    Y   Y     N     N     Y     Y     N     N           B
              277    P    Y   Y     N     N     Y     Y     N     N           B
              278    P    Y   Y     N     N     Y     Y     N     N           B
              300    P    Y   Y     N     N     Y     Y     N     N     S     B
              301    P    Y   Y     N     N     Y     Y     N     N           B
              302    P    Y   Y     N     N     Y     Y     N     N           B
              303    P    Y   Y     N     N     Y     Y     N     N     P     B
              304    P    Y   Y     N     N     Y     Y     N     N           B
              305    P    Y   Y     N     N     Y     Y     N     N     P     B
              306    P    Y   Y     N     N     Y     Y     N     N           B
```

LISTCFG SUBSYSTEM for V2Xf subsystems

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                                        FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                              ************************************************************************
                              *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                              *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                              *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                              ************************************************************************


DEVICE STATUS
-------------
                                                    CKD   CKD  SCSI   SCSI  PPRC  PAV
VOLSER  UNIT  FDID   T/P  CA  DFW  ECAM  COMM  ENABL  R/W  ENABL  R/W   STAT  STATUS
------  ----  ----   ---  --  ---  ----  ----  -----  ---  -----  ---   ----  ------

              307    P    Y   Y     N     N     Y     Y     N     N           B
              308    P    Y   Y     N     N     Y     Y     N     N     S     B
              309    P    Y   Y     N     N     Y     Y     N     N     S     B
              30A    P    Y   Y     N     N     Y     Y     N     N     S     B
              30B    P    Y   Y     N     N     Y     Y     N     N     S     B
              30C    P    Y   Y     N     N     Y     Y     N     N     S     B
              30D    P    Y   Y     N     N     Y     Y     N     N           B
              30E    P    Y   Y     N     N     Y     Y     N     N           B
              30F    P    Y   Y     N     N     Y     Y     N     N           B
SW7700  7700  700    P    Y   Y     N     N     Y     Y     N     N           B(001)
              701    P    Y   Y     N     N     Y     Y     N     N           B
              703    P    Y   Y     N     N     Y     Y     N     N           B
              704    P    Y   Y     N     N     Y     Y     N     N           B
              705    P    Y   Y     N     N     Y     Y     N     N           B
              706    P    Y   Y     N     N     Y     Y     N     N           B
              707    P    Y   Y     Y     N     Y     Y     N     N           B
              708    P    Y   Y     N     N     Y     Y     N     N           B
              709    P    Y   Y     N     N     Y     Y     N     N           B
              7EF    P    Y   Y     N     N     Y     Y     N     N           B
              7FF    P    Y   Y     N     N     Y     Y     N     N           A-700
              800    P    Y   Y     N     N     Y     Y     N     N           B
              801    P    Y   Y     N     N     Y     Y     N     N           B
              802    P    Y   Y     N     N     Y     Y     N     N           B
              803    P    Y   Y     N     N     Y     Y     N     N           B
              804    P    Y   Y     N     N     Y     Y     N     N           B
              805    P    Y   Y     N     N     Y     Y     N     N           B
              806    P    Y   Y     N     N     Y     Y     N     N           B
              807    P    Y   Y     N     N     Y     Y     N     N           B
              808    P    Y   Y     N     N     Y     Y     N     N           B
              809    P    Y   Y     N     N     Y     Y     N     N           B
              80A    P    Y   Y     N     N     Y     Y     N     N           B
              80B    P    Y   Y     N     N     Y     Y     N     N           B
              80C    P    Y   Y     N     N     Y     Y     N     N           B
              80D    P    Y   Y     N     N     Y     Y     N     N           B
              80E    P    Y   Y     N     N     Y     Y     N     N           B
              80F    P    Y   Y     N     N     Y     Y     N     N           B
              810    P    Y   Y     N     N     Y     Y     N     N           B
              811    P    Y   Y     N     N     Y     Y     N     N           B
```

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                                        FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                                 ************************************************************************
                                 *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                                 *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                                 *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                                 ************************************************************************


DEVICE STATUS
-------------
                                                                    CKD   CKD  SCSI   SCSI  PPRC  PAV
VOLSER  UNIT  FDID   T/P  CA  DFW  ECAM  COMM  ENABL  R/W  ENABL  R/W   STAT  STATUS
------  ----  ----   ---  --  ---  ----  ----  -----  ---  -----  ---   ----  ------

              812    P    Y   Y     N     N     Y     Y     N     N           B
              813    P    Y   Y     N     N     Y     Y     N     N           B
              814    P    Y   Y     N     N     Y     Y     N     N           B
              815    P    Y   Y     N     N     Y     Y     N     N           B
              816    P    Y   Y     N     N     Y     Y     N     N           B
              817    P    Y   Y     N     N     Y     Y     N     N           B
              818    P    Y   Y     N     N     Y     Y     N     N           B
              819    P    Y   Y     N     N     Y     Y     N     N           B
              81A    P    Y   Y     N     N     Y     Y     N     N           B
              81B    P    Y   Y     N     N     Y     Y     N     N           B
              81C    P    Y   Y     N     N     Y     Y     N     N           B
              81D    P    Y   Y     N     N     Y     Y     N     N           B
              81E    P    Y   Y     N     N     Y     Y     N     N           B
              81F    P    Y   Y     N     N     Y     Y     N     N           B
              820    P    Y   Y     N     N     Y     Y     N     N           B
              821    P    Y   Y     N     N     Y     Y     N     N           B
              822    P    Y   Y     N     N     Y     Y     N     N           B
              823    P    Y   Y     N     N     Y     Y     N     N           B
              824    P    Y   Y     N     N     Y     Y     N     N           B
              825    P    Y   Y     N     N     Y     Y     N     N           B
              826    P    Y   Y     N     N     Y     Y     N     N           B
              827    P    Y   Y     N     N     Y     Y     N     N           B
              828    P    Y   Y     N     N     Y     Y     N     N           B
              829    P    Y   Y     N     N     Y     Y     N     N           B
              82A    P    Y   Y     N     N     Y     Y     N     N           B
              82B    P    Y   Y     N     N     Y     Y     N     N           B
              82C    P    Y   Y     N     N     Y     Y     N     N           B
              82D    P    Y   Y     N     N     Y     Y     N     N           B
              82E    P    Y   Y     N     N     Y     Y     N     N           B
              82F    P    Y   Y     N     N     Y     Y     N     N           B
              830    P    Y   Y     N     N     Y     Y     N     N           B
              831    P    Y   Y     N     N     Y     Y     N     N           B
              832    P    Y   Y     N     N     Y     Y     N     N           B
              833    P    Y   Y     N     N     Y     Y     N     N           B
              834    P    Y   Y     N     N     Y     Y     N     N           B
              835    P    Y   Y     N     N     Y     Y     N     N           B
              836    P    Y   Y     N     N     Y     Y     N     N           B
              837    P    Y   Y     N     N     Y     Y     N     N           B
```

LISTCFG SUBSYSTEM for V2Xf subsystems

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                                        FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                                ************************************************************************
                                *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                                *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                                *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                                ************************************************************************


DEVICE STATUS
-------------
                                                                 CKD   CKD  SCSI   SCSI  PPRC  PAV
VOLSER  UNIT  FDID   T/P  CA  DFW  ECAM  COMM  ENABL  R/W  ENABL  R/W   STAT  STATUS
------  ----  ----   ---  --  ---  ----  ----  -----  ---  -----  ---   ----  ------

              838    P    Y   Y     N     N     Y     Y     N     N           B
              839    P    Y   Y     N     N     Y     Y     N     N           B
              83A    P    Y   Y     N     N     Y     Y     N     N           B
              83B    P    Y   Y     N     N     Y     Y     N     N           B
              83C    P    Y   Y     N     N     Y     Y     N     N           B
              83D    P    Y   Y     N     N     Y     Y     N     N           B
              83E    P    Y   Y     N     N     Y     Y     N     N           B
              83F    P    Y   Y     N     N     Y     Y     N     N           B
              840    P    Y   Y     N     N     Y     Y     N     N           B
              841    P    Y   Y     N     N     Y     Y     N     N           B
              842    P    Y   Y     N     N     Y     Y     N     N           B
              843    P    Y   Y     N     N     Y     Y     N     N           B
              844    P    Y   Y     N     N     Y     Y     N     N           B
              845    P    Y   Y     N     N     Y     Y     N     N           B
              846    P    Y   Y     N     N     Y     Y     N     N           B
              847    P    Y   Y     N     N     Y     Y     N     N           B
              848    P    Y   Y     N     N     Y     Y     N     N           B
              849    P    Y   Y     N     N     Y     Y     N     N           B
              84A    P    Y   Y     N     N     Y     Y     N     N           B
              84B    P    Y   Y     N     N     Y     Y     N     N           B
              84C    P    Y   Y     N     N     Y     Y     N     N           B
              84D    P    Y   Y     N     N     Y     Y     N     N           B
              84E    P    Y   Y     N     N     Y     Y     N     N           B
              84F    P    Y   Y     N     N     Y     Y     N     N           B
              850    P    Y   Y     N     N     Y     Y     N     N           B
              851    P    Y   Y     N     N     Y     Y     N     N           B
              852    P    Y   Y     N     N     Y     Y     N     N           B
              853    P    Y   Y     N     N     Y     Y     N     N           B
              854    P    Y   Y     N     N     Y     Y     N     N           B
              855    P    Y   Y     N     N     Y     Y     N     N           B
              856    P    Y   Y     N     N     Y     Y     N     N           B
              857    P    Y   Y     N     N     Y     Y     N     N           B
              858    P    Y   Y     N     N     Y     Y     N     N           B
              859    P    Y   Y     N     N     Y     Y     N     N           B
              85A    P    Y   Y     N     N     Y     Y     N     N           B
              85B    P    Y   Y     N     N     Y     Y     N     N           B
              85C    P    Y   Y     N     N     Y     Y     N     N           B
              85D    P    Y   Y     N     N     Y     Y     N     N           B
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                                        FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                                ************************************************************************
                                *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                                *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                                *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                                ************************************************************************


DEVICE STATUS
-------------
                                                                    CKD   CKD  SCSI   SCSI  PPRC  PAV
VOLSER  UNIT  FDID   T/P  CA  DFW  ECAM  COMM  ENABL  R/W  ENABL  R/W   STAT  STATUS
------  ----  ----   ---  --  ---  ----  ----  -----  ---  -----  ---   ----  ------

              85E    P    Y   Y     N     N     Y     Y     N     N           B
              85F    P    Y   Y     N     N     Y     Y     N     N           B
              860    P    Y   Y     N     N     Y     Y     N     N           B
              861    P    Y   Y     N     N     Y     Y     N     N           B
              862    P    Y   Y     N     N     Y     Y     N     N           B
              863    P    Y   Y     N     N     Y     Y     N     N           B
              864    P    Y   Y     N     N     Y     Y     N     N           B
              865    P    Y   Y     N     N     Y     Y     N     N           B
              866    P    Y   Y     N     N     Y     Y     N     N           B
              867    P    Y   Y     N     N     Y     Y     N     N           B
              868    P    Y   Y     N     N     Y     Y     N     N           B
              869    P    Y   Y     N     N     Y     Y     N     N           B
              86A    P    Y   Y     N     N     Y     Y     N     N           B
              86B    P    Y   Y     N     N     Y     Y     N     N           B
              86C    P    Y   Y     N     N     Y     Y     N     N           B
              86D    P    Y   Y     N     N     Y     Y     N     N           B
              86E    P    Y   Y     N     N     Y     Y     N     N           B
              86F    P    Y   Y     N     N     Y     Y     N     N           B
              870    P    Y   Y     N     N     Y     Y     N     N           B
              871    P    Y   Y     N     N     Y     Y     N     N           B
              872    P    Y   Y     N     N     Y     Y     N     N           B
              873    P    Y   Y     N     N     Y     Y     N     N           B
              874    P    Y   Y     N     N     Y     Y     N     N           B
              875    P    Y   Y     N     N     Y     Y     N     N           B
              876    P    Y   Y     N     N     Y     Y     N     N           B
              877    P    Y   Y     N     N     Y     Y     N     N           B
              878    P    Y   Y     N     N     Y     Y     N     N           B
              879    P    Y   Y     N     N     Y     Y     N     N           B
              87A    P    Y   Y     N     N     Y     Y     N     N           B
              87B    P    Y   Y     N     N     Y     Y     N     N           B
              87C    P    Y   Y     N     N     Y     Y     N     N           B
              87D    P    Y   Y     N     N     Y     Y     N     N           B
              87E    P    Y   Y     N     N     Y     Y     N     N           B
              87F    P    Y   Y     N     N     Y     Y     N     N           B
              880    P    Y   Y     N     N     Y     Y     N     N           B
              881    P    Y   Y     N     N     Y     Y     N     N           B
              882    P    Y   Y     N     N     Y     Y     N     N           B
              883    P    Y   Y     N     N     Y     Y     N     N           B
```

LISTCFG SUBSYSTEM for V2Xf subsystems

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                                          FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                              ************************************************************************
                              *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                              *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                              *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                             ************************************************************************


DEVICE STATUS
-------------
                                                          CKD   CKD  SCSI   SCSI  PPRC  PAV
VOLSER  UNIT  FDID   T/P  CA  DFW  ECAM  COMM  ENABL  R/W  ENABL  R/W   STAT  STATUS
------  ----  ----   ---  --  ---  ----  ----  -----  ---  -----  ---   ----  ------

              884    P    Y   Y     N     N     Y     Y     N     N           B
              885    P    Y   Y     N     N     Y     Y     N     N           B
              886    P    Y   Y     N     N     Y     Y     N     N           B
              887    P    Y   Y     N     N     Y     Y     N     N           B
              888    P    Y   Y     N     N     Y     Y     N     N           B
              889    P    Y   Y     N     N     Y     Y     N     N           B
              88A    P    Y   Y     N     N     Y     Y     N     N           B
              88B    P    Y   Y     N     N     Y     Y     N     N           B
              88C    P    Y   Y     N     N     Y     Y     N     N           B
              88D    P    Y   Y     N     N     Y     Y     N     N           B
              88E    P    Y   Y     N     N     Y     Y     N     N           B
              88F    P    Y   Y     N     N     Y     Y     N     N           B
              890    P    Y   Y     N     N     Y     Y     N     N           B
              891    P    Y   Y     N     N     Y     Y     N     N           B
              892    P    Y   Y     N     N     Y     Y     N     N           B
              893    P    Y   Y     N     N     Y     Y     N     N           B
              894    P    Y   Y     N     N     Y     Y     N     N           B
              895    P    Y   Y     N     N     Y     Y     N     N           B
              896    P    Y   Y     N     N     Y     Y     N     N           B
              897    P    Y   Y     N     N     Y     Y     N     N           B
              898    P    Y   Y     N     N     Y     Y     N     N           B
              899    P    Y   Y     N     N     Y     Y     N     N           B
              89A    P    Y   Y     N     N     Y     Y     N     N           B
              89B    P    Y   Y     N     N     Y     Y     N     N           B
              89C    P    Y   Y     N     N     Y     Y     N     N           B
              89D    P    Y   Y     N     N     Y     Y     N     N           B
              89E    P    Y   Y     N     N     Y     Y     N     N           B
              89F    P    Y   Y     N     N     Y     Y     N     N           B
              8A0    P    Y   Y     N     N     Y     Y     N     N           B
              8A1    P    Y   Y     N     N     Y     Y     N     N           B
              8A2    P    Y   Y     N     N     Y     Y     N     N           B
              8A3    P    Y   Y     N     N     Y     Y     N     N           B
              8A4    P    Y   Y     N     N     Y     Y     N     N           B
              8A5    P    Y   Y     N     N     Y     Y     N     N           B
              8A6    P    Y   Y     N     N     Y     Y     N     N           B
              8A7    P    Y   Y     N     N     Y     Y     N     N           B
              8A8    P    Y   Y     N     N     Y     Y     N     N           B
              8A9    P    Y   Y     N     N     Y     Y     N     N           B
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                                        FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                                 ************************************************************************
                                 *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                                 *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                                 *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                                 ************************************************************************


DEVICE STATUS
-------------
                                                                    CKD   CKD  SCSI   SCSI  PPRC  PAV
VOLSER  UNIT  FDID   T/P  CA  DFW  ECAM  COMM  ENABL  R/W  ENABL  R/W   STAT  STATUS
------  ----  ----   ---  --  ---  ----  ----  -----  ---  -----  ---   ----  ------

              8AA    P    Y   Y     N     N     Y     Y     N     N           B
              8AB    P    Y   Y     N     N     Y     Y     N     N           B
              8AC    P    Y   Y     N     N     Y     Y     N     N           B
              8AD    P    Y   Y     N     N     Y     Y     N     N           B
              8AE    P    Y   Y     N     N     Y     Y     N     N           B
              8AF    P    Y   Y     N     N     Y     Y     N     N           B
              8B0    P    Y   Y     N     N     Y     Y     N     N           B
              8B1    P    Y   Y     N     N     Y     Y     N     N           B
              8B2    P    Y   Y     N     N     Y     Y     N     N           B
              8B3    P    Y   Y     N     N     Y     Y     N     N           B
              8B4    P    Y   Y     N     N     Y     Y     N     N           B
              8B5    P    Y   Y     N     N     Y     Y     N     N           B
              8B6    P    Y   Y     N     N     Y     Y     N     N           B
              8B7    P    Y   Y     N     N     Y     Y     N     N           B
              8B8    P    Y   Y     N     N     Y     Y     N     N           B
              8B9    P    Y   Y     N     N     Y     Y     N     N           B
              8BA    P    Y   Y     N     N     Y     Y     N     N           B
              8BB    P    Y   Y     N     N     Y     Y     N     N           B
              8BC    P    Y   Y     N     N     Y     Y     N     N           B
              8BD    P    Y   Y     N     N     Y     Y     N     N           B
              8BE    P    Y   Y     N     N     Y     Y     N     N           B
              8BF    P    Y   Y     N     N     Y     Y     N     N           B
              8C0    P    Y   Y     N     N     Y     Y     N     N           B
              8C1    P    Y   Y     N     N     Y     Y     N     N           B
              8C2    P    Y   Y     N     N     Y     Y     N     N           B
              8C3    P    Y   Y     N     N     Y     Y     N     N           B
              8C4    P    Y   Y     N     N     Y     Y     N     N           B
              8C5    P    Y   Y     N     N     Y     Y     N     N           B
              8C6    P    Y   Y     N     N     Y     Y     N     N           B
              8C7    P    Y   Y     N     N     Y     Y     N     N           B
              8C8    P    Y   Y     N     N     Y     Y     N     N           B
              8C9    P    Y   Y     N     N     Y     Y     N     N           B
              8CA    P    Y   Y     N     N     Y     Y     N     N           B
              8CB    P    Y   Y     N     N     Y     Y     N     N           B
              8CC    P    Y   Y     N     N     Y     Y     N     N           B
              8CD    P    Y   Y     N     N     Y     Y     N     N           B
              8CE    P    Y   Y     N     N     Y     Y     N     N           B
              8CF    P    Y   Y     N     N     Y     Y     N     N           B
```

LISTCFG SUBSYSTEM for V2Xf subsystems

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                                        FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                                ************************************************************************
                                *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                                *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                                *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                                ************************************************************************


DEVICE STATUS
-------------
                                                          CKD   CKD  SCSI   SCSI  PPRC  PAV
VOLSER  UNIT  FDID   T/P  CA  DFW  ECAM  COMM  ENABL  R/W  ENABL  R/W   STAT  STATUS
------  ----  ----   ---  --  ---  ----  ----  -----  ---  -----  ---   ----  ------

              8D0    P    Y   Y     N     N     Y     Y     N     N           B
              8D1    P    Y   Y     N     N     Y     Y     N     N           B
              8D2    P    Y   Y     N     N     Y     Y     N     N           B
              8D3    P    Y   Y     N     N     Y     Y     N     N           B
              8D4    P    Y   Y     N     N     Y     Y     N     N           B
              8D5    P    Y   Y     N     N     Y     Y     N     N           B
              8D6    P    Y   Y     N     N     Y     Y     N     N           B
              8D7    P    Y   Y     N     N     Y     Y     N     N           B
              8D8    P    Y   Y     N     N     Y     Y     N     N           B
              8D9    P    Y   Y     N     N     Y     Y     N     N           B
              8DA    P    Y   Y     N     N     Y     Y     N     N           B
              8DB    P    Y   Y     N     N     Y     Y     N     N           B
              8DC    P    Y   Y     N     N     Y     Y     N     N           B
              8DD    P    Y   Y     N     N     Y     Y     N     N           B
              8DE    P    Y   Y     N     N     Y     Y     N     N           B
              8DF    P    Y   Y     N     N     Y     Y     N     N           B
              8E0    P    Y   Y     N     N     Y     Y     N     N           B
              8E1    P    Y   Y     N     N     Y     Y     N     N           B
              8E2    P    Y   Y     N     N     Y     Y     N     N           B
              8E3    P    Y   Y     N     N     Y     Y     N     N           B
              8E4    P    Y   Y     N     N     Y     Y     N     N           B
              8E5    P    Y   Y     N     N     Y     Y     N     N           B
              8E6    P    Y   Y     N     N     Y     Y     N     N           B
              8E7    P    Y   Y     N     N     Y     Y     N     N           B
              8E8    P    Y   Y     N     N     Y     Y     N     N           B
              8E9    P    Y   Y     N     N     Y     Y     N     N           B
              8EA    P    Y   Y     N     N     Y     Y     N     N           B
              8EB    P    Y   Y     N     N     Y     Y     N     N           B
              8EC    P    Y   Y     N     N     Y     Y     N     N           B
              8ED    P    Y   Y     N     N     Y     Y     N     N           B
              8EE    P    Y   Y     N     N     Y     Y     N     N           B
              8EF    P    Y   Y     N     N     Y     Y     N     N           B
              8F0    P    Y   Y     N     N     Y     Y     N     N           B
              8F1    P    Y   Y     N     N     Y     Y     N     N           B
              8F2    P    Y   Y     N     N     Y     Y     N     N           B
              8F3    P    Y   Y     N     N     Y     Y     N     N           B
              8F4    P    Y   Y     N     N     Y     Y     N     N           B
              8F5    P    Y   Y     N     N     Y     Y     N     N           B
```

```
REPORT DATE:  Mon Dec  8, 2003  10:42:20                  SVA SUBSYSTEM                      CRLEVL1   V03R01L00  PAGE 20

                                        FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                                 ************************************************************************
                                 *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                                 *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                                 *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                                 ************************************************************************


DEVICE STATUS
-------------
                                                    CKD   CKD  SCSI   SCSI  PPRC  PAV
VOLSER  UNIT  FDID   T/P  CA  DFW  ECAM  COMM  ENABL  R/W  ENABL  R/W   STAT  STATUS
------  ----  ----   ---  --  ---  ----  ----  -----  ---  -----  ---   ----  ------

              8F6    P    Y   Y     N     N     Y     Y     N     N          B
              8F7    P    Y   Y     N     N     Y     Y     N     N          B
              8F8    P    Y   Y     N     N     Y     Y     N     N          B
              8F9    P    Y   Y     N     N     Y     Y     N     N          B
              8FA    P    Y   Y     N     N     Y     Y     N     N          B
              8FB    P    Y   Y     N     N     Y     Y     N     N          B
              8FC    P    Y   Y     N     N     Y     Y     N     N          B
              8FD    P    Y   Y     N     N     Y     Y     N     N          B
              8FE    P    Y   Y     N     N     Y     Y     N     N          B
              8FF    P    Y   Y     N     N     Y     Y     N     N          B
              F11    P    Y   Y     N     N     N     Y     N     N          B
              F12    P    Y   Y     N     N     N     Y     N     N          B
              F13    P    Y   Y     N     N     N     Y     N     N          B
              F14    P    Y   Y     N     N     N     Y     N     N          B
              F15    P    Y   Y     N     N     N     Y     N     N          B
              F16    P    Y   Y     N     N     N     Y     N     N          B
              F17    P    Y   Y     N     N     N     Y     N     N          B
              F18    P    Y   Y     N     N     N     Y     N     N          B
              F19    P    Y   Y     N     N     N     N     N     N          B

 CAPACITY SUMMARY
 -------- -------
 SELECTED DEVICES SUMMARY
 ========================
                 SELECTED   FUNCTIONAL    ---- PHYSICAL CAP USED (MB) ---
    PARTITION    DEVICES    CAPACITY(MB)    SHARED     UNIQUE     TOTAL
    ----------   --------   ------------  ---------  ---------  ---------
    Production       377      2510058.1     10636.0     4996.1    15632.1
          Test         0            0.0         0.0        0.0        0.0
       Overall       377      2510058.1     10636.0     4996.1    15632.1

 SUBSYSTEM SUMMARY
 =================
                 TOTAL    DISK ARRAY    TOTAL FUNC.   NET CAP.  NET CAP.  FREE_SPACE_PCT
    PARTITION    DEVICES  CAPACITY(MB)  CAPACITY(MB)  LOAD(MB)  LOAD PCT  COLL'D  UNCOLL
    ----------   -------  ------------  ------------  --------  --------  ------  ------
    Production       377     1868659.8     2510058.1   10998.7       0.6    99.4     0.0
          Test         0           0.0           0.0       0.0       0.0     0.0     0.0
```

```
REPORT DATE:  Mon Dec  8, 2003  10:42:20                  SVA SUBSYSTEM                      CRLEVL1   V03R01L00  PAGE 21

                                        FUNCTIONAL DEVICE CONFIGURATION REPORT (LEVEL 1)

                                 ************************************************************************
                                 *  SITE NAME          = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                                 *  SUBSYSTEM NAME     = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                                 *  FUNCTIONAL DEVICES = 377       *  FUNCTIONAL CAPACITY = 2510058.07    *
                                 ************************************************************************


 SUBSYSTEM SUMMARY
 =================
                 TOTAL    DISK ARRAY    TOTAL FUNC.   NET CAP.  NET CAP.  FREE_SPACE_PCT
    PARTITION    DEVICES  CAPACITY(MB)  CAPACITY(MB)  LOAD(MB)  LOAD PCT  COLL'D  UNCOLL
    ----------   -------  ------------  ------------  --------  --------  ------  ------
       Overall       377     1868659.8     2510058.1   10998.7       0.6    99.4     0.0
```

LISTCFG SUBSYSTEM for V2Xf subsystems

```
REPORT DATE: Mon Dec  8, 2003 10:42:20                    SVA SUBSYSTEM                CRLEVEL2 V03R01L00   PAGE: 1

                                          CHANNEL CONFIGURATION REPORT (LEVEL 2)

                          ************************************************************************
                          *  SITE NAME       = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                          *  SUBSYSTEM NAME  = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                          *  NO. OF CHANNELS = 8         *  SITE LOCATION NO.   = 0             *
                         ************************************************************************
 CACHE INFORMATION                                                                      GENERAL INFORMATION
 ----- -----------                                                                      ------- -----------
 CACHE SIZE               =    8192
 NVS SIZE                 =     256


          INTERFACE  --- CHANNEL INTERFACE ---  --- CHANNEL ---   BASE                  WORLD WIDE
            NAME     CLUSTER    ID     ENABLED    TYPE    SPEED   IDID  RANGE  FDID     NODE NAME         PORT NAME
          ---------  -------  -------  -------  --------  -----   ----  -----  ----  ----------------  ----------------
          CHAN0A        0        A        Y     FICON     100.0     00   4096    00  500104F0006FE1C0  500104F0006FE1D0
          TEST          0        B        Y     FICON     100.0     00   4096    00  500104F0006FE1C0  500104F0006FE1D1
          TEST          0        C        Y     FICON     200.0     00   4096    00  500104F0006FE1C0  500104F0006FE1D2
          TEST          0        D        Y     FICON     100.0     00   4096    00  500104F0006FE1C0  500104F0006FE1D3
                        1        A        Y     FICON     200.0     00   4096    00  500104F0006FE1C0  500104F0006FE1D8
          XYZ           1        B        Y     FICON     100.0     00   4096    00  500104F0006FE1C0  500104F0006FE1D9
                        1        C        Y     FICON     200.0     00   4096    00  500104F0006FE1C0  500104F0006FE1DA
                        1        D        Y     FICON     100.0     00   4096    00  500104F0006FE1C0  500104F0006FE1DB
```

```
REPORT DATE: Mon Dec  8, 2003 10:42:20                    SVA SUBSYSTEM                    CRLEVEL3 V03R01L00   PAGE: 1

                                        DRIVE MODULE CONFIGURATION REPORT (LEVEL 3)

                      ************************************************************************
                      *  SITE NAME        = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                      *  SUBSYSTEM NAME   = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                      *  DRIVE MODULES    = 62        *  PHYSICAL CAPACITY   = 4599.8(GB)     *
                      ************************************************************************

 GENERAL INFORMATION
 ------- -----------
           NUMBER OF SPARES             = 17
           NUMBER OF ARRAYS             = 2        DEFAULT GLOBAL SPARES  = 1           DEFAULT ARRAY SIZE        = 13+2
           NUMBER OF FUNCTIONAL DEVICES = 4096     CACHE SIZE             = 8192        NVS SIZE                  = 256
           REMOTE OPERATOR PANEL STATUS = DISABLE  CSRC STATUS            = None        SCSI SIMS STATUS          = DISABLED
           NUMBER OF SCSI DOMAINS       = 0        NUMBER OF SCSI TARGETS = 0           NUMBER OF SCSI LUNS       = 0
           COPYLIM                      = 1
           TOT VIRT CYLINDERS = 27353088           CONFIG VIRT CYLS = 6115596           UNCONFIG VIRTCYLS = 21237492

           SUBSYSTEM IDENTIFIERS =


               7000   7100   7200   7300   7400   7500   7600   7700   7800   7900   7A00   7B00   7C00   7D00   7E00   7F00

 SUPPORTED FEATURES
 --------- --------
           Maintenance                             SnapShot
           PPRCFCN                                 PPRCSnapShot

 REVISION LEVEL INFORMATION
 -------- ----- -----------
           COMPONENT ID = SRL                      COMPONENT LEVEL = G02010700
           COMPONENT ID = ISP                      COMPONENT LEVEL = gs031107.0
           COMPONENT ID = IUP                      COMPONENT LEVEL = gfpav1108.
           COMPONENT ID = CIP                      COMPONENT LEVEL =
           COMPONENT ID = FIP                      COMPONENT LEVEL =

 DRIVE MODULE INFORMATION
 ----- ------ -----------

                        DEVICE-LOCATION   SERIAL   DEVICE         CAPACITY   --DEVICE TYPE---
                        UNIT TRAY SLOT    NUMBER   STATUS  ARRAY    (MB)     CLASS  SUB-CLASS
                        ---- ---- ----   --------  ------  -----  ---------  -----  ---------
  UNAVAILABLE PARTITION  0    1    0     00017593   U.B      -     71871.5     8        8
                         1    0    4     00013880   U.B      -     71871.5     8        8
                         2    0    0     00000000   U.N      -         0.0     0        0
                         2    0    1     00000000   U.N      -         0.0     0        0
                         2    0    2     00000000   U.N      -         0.0     0        0
                         2    0    3     00000000   U.N      -         0.0     0        0
                         2    0    4     00000000   U.N      -         0.0     0        0
                         2    0    5     00000000   U.N      -         0.0     0        0
                         2    0    6     00000000   U.N      -         0.0     0        0
                         2    0    7     00000000   U.N      -         0.0     0        0
                         2    1    0     00000000   U.N      -         0.0     0        0
```

LISTCFG SUBSYSTEM for V2Xf subsystems

```
REPORT DATE: Mon Dec  8, 2003 10:42:20                    SVA SUBSYSTEM                    CRLEVEL3 V03R01L00   PAGE: 2

                                   DRIVE MODULE CONFIGURATION REPORT (LEVEL 3)

                     ************************************************************************
                     *  SITE NAME        = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                     *  SUBSYSTEM NAME   = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                     *  DRIVE MODULES    = 62        *  PHYSICAL CAPACITY   = 4599.8(GB)     *
                     ************************************************************************

 DRIVE MODULE INFORMATION
 ----- ------ -----------

                    DEVICE-LOCATION   SERIAL   DEVICE         CAPACITY   --DEVICE TYPE---
                    UNIT TRAY SLOT    NUMBER   STATUS  ARRAY    (MB)     CLASS  SUB-CLASS
                    ---- ---- ----   --------  ------  -----  ---------  -----  ---------
                     2    1    1     00000000  U.N      -          0.0     0        0
                     2    1    2     00000000  U.N      -          0.0     0        0
                     2    1    3     00000000  U.N      -          0.0     0        0
                     2    1    4     00000000  U.N      -          0.0     0        0
                     2    1    5     00000000  U.N      -          0.0     0        0
                     2    1    6     00000000  U.N      -          0.0     0        0
                     2    1    7     00000000  U.N      -          0.0     0        0
                     2    2    0     00000000  U.N      -          0.0     0        0
                     2    2    1     00000000  U.N      -          0.0     0        0
                     2    2    2     00000000  U.N      -          0.0     0        0
                     2    2    3     00000000  U.N      -          0.0     0        0
                     2    2    4     00000000  U.N      -          0.0     0        0
                     2    2    5     00000000  U.N      -          0.0     0        0
                     2    2    6     00000000  U.N      -          0.0     0        0
                     2    2    7     00000000  U.N      -          0.0     0        0
                     2    3    0     00000000  U.N      -          0.0     0        0
                     2    3    1     00000000  U.N      -          0.0     0        0
                     2    3    2     00000000  U.N      -          0.0     0        0
                     2    3    3     00000000  U.N      -          0.0     0        0
                     2    3    4     00000000  U.N      -          0.0     0        0
                     2    3    5     00000000  U.N      -          0.0     0        0
                     2    3    6     00000000  U.N      -          0.0     0        0
                     2    3    7     00000000  U.N      -          0.0     0        0
                     3    0    0     00000000  U.N      -          0.0     0        0
                     3    0    1     00000000  U.N      -          0.0     0        0
                     3    0    2     00000000  U.N      -          0.0     0        0
                     3    0    3     00000000  U.N      -          0.0     0        0
                     3    0    4     00000000  U.N      -          0.0     0        0
                     3    0    5     00000000  U.N      -          0.0     0        0
                     3    0    6     00000000  U.N      -          0.0     0        0
                     3    0    7     00000000  U.N      -          0.0     0        0
                     3    1    0     00000000  U.N      -          0.0     0        0
                     3    1    1     00000000  U.N      -          0.0     0        0
                     3    1    2     00000000  U.N      -          0.0     0        0
                     3    1    3     00000000  U.N      -          0.0     0        0
                     3    1    4     00000000  U.N      -          0.0     0        0
                     3    1    5     00000000  U.N      -          0.0     0        0
                     3    1    6     00000000  U.N      -          0.0     0        0
                     3    1    7     00000000  U.N      -          0.0     0        0
```

```
REPORT DATE: Mon Dec  8, 2003 10:42:20                    SVA SUBSYSTEM                    CRLEVEL3 V03R01L00   PAGE: 3

                                    DRIVE MODULE CONFIGURATION REPORT (LEVEL 3)

                    ************************************************************************
                    *  SITE NAME        = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                    *  SUBSYSTEM NAME   = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                    *  DRIVE MODULES    = 62        *  PHYSICAL CAPACITY   = 4599.8(GB)     *
                    ************************************************************************

 DRIVE MODULE INFORMATION
 ----- ------ -----------

                   DEVICE-LOCATION   SERIAL   DEVICE         CAPACITY   --DEVICE TYPE---
                   UNIT TRAY SLOT    NUMBER   STATUS  ARRAY    (MB)     CLASS  SUB-CLASS
                   ---- ---- ----   --------  ------  -----  ---------  -----  ---------
                    3    2    0     00000000  U.N      -          0.0     0        0
                    3    2    1     00000000  U.N      -          0.0     0        0
                    3    2    2     00000000  U.N      -          0.0     0        0
                    3    2    3     00000000  U.N      -          0.0     0        0
                    3    2    4     00000000  U.N      -          0.0     0        0
                    3    2    5     00000000  U.N      -          0.0     0        0
                    3    2    6     00000000  U.N      -          0.0     0        0
                    3    2    7     00000000  U.N      -          0.0     0        0
                    3    3    0     00000000  U.N      -          0.0     0        0
                    3    3    1     00000000  U.N      -          0.0     0        0
                    3    3    2     00000000  U.N      -          0.0     0        0
                    3    3    3     00000000  U.N      -          0.0     0        0
                    3    3    4     00000000  U.N      -          0.0     0        0
                    3    3    5     00000000  U.N      -          0.0     0        0
                    3    3    6     00000000  U.N      -          0.0     0        0
                    3    3    7     00000000  U.N      -          0.0     0        0
                            UNAVAILABLE PARTITION   TOTAL PHYSICAL CAPACITY =   143743.1

 MAT PARTITION      0    0    0     00017623  M.A      -      71871.5     8        8
                    0    0    1     00017090  M.A      -      71871.5     8        8
                    0    0    2     00018234  M.A      -      71871.5     8        8
                    0    0    3     00000642  M.A      -      71871.5     8        8
                    0    0    4     00017768  M.A      -      71871.5     8        8
                    0    0    5     00018531  M.A      -      71871.5     8        8
                    0    0    6     00017649  M.A      -      71871.5     8        8
                    0    0    7     00003783  M.A      -      71871.5     8        8
                    0    1    1     00018416  M.A      -      71871.5     8        8
                    0    1    2     00019199  M.A      -      71871.5     8        8
                    0    1    3     00018540  M.A      -      71871.5     8        8
                    0    1    4     00018018  M.A      -      71871.5     8        8
                    0    1    5     00018365  M.A      -      71871.5     8        8
                    0    1    6     00017702  M.A      -      71871.5     8        8
                    0    1    7     00018080  M.A      -      71871.5     8        8
                            MAT PARTITION           TOTAL PHYSICAL CAPACITY =  1078072.9

 SPARES PARTITION   0    3    6     00018719  S.A      -      71871.5     8        8
                    1    2    0     00017851  S.A      -      71871.5     8        8
                    1    2    1     00018543  S.A      -      71871.5     8        8
                    1    2    2     00014016  S.A      -      71871.5     8        8
```

```
REPORT DATE: Mon Dec  8, 2003 10:42:20                    SVA SUBSYSTEM                    CRLEVEL3 V03R01L00   PAGE: 4

                                    DRIVE MODULE CONFIGURATION REPORT (LEVEL 3)

                    ************************************************************************
                    *  SITE NAME        = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                    *  SUBSYSTEM NAME   = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                    *  DRIVE MODULES    = 62        *  PHYSICAL CAPACITY   = 4599.8(GB)     *
                    ************************************************************************

 DRIVE MODULE INFORMATION
 ----- ------ -----------

                   DEVICE-LOCATION   SERIAL   DEVICE         CAPACITY   --DEVICE TYPE---
                   UNIT TRAY SLOT    NUMBER   STATUS  ARRAY    (MB)     CLASS  SUB-CLASS
                   ---- ---- ----   --------  ------  -----  ---------  -----  ---------
                    1    2    3     00013857   S.A      -     71871.5     8        8
                    1    2    4     00014243   S.A      -     71871.5     8        8
                    1    2    5     00014442   S.A      -     71871.5     8        8
                    1    2    6     00017656   S.A      -     71871.5     8        8
                    1    2    7     00017351   S.A      -     71871.5     8        8
                    1    3    0     00018718   S.A      -     71871.5     8        8
                    1    3    1     00018036   S.A      -     71871.5     8        8
                    1    3    2     00014093   S.A      -     71871.5     8        8
                    1    3    3     00014130   S.A      -     71871.5     8        8
                    1    3    4     00014429   S.A      -     71871.5     8        8
                    1    3    5     00014252   S.A      -     71871.5     8        8
                    1    3    6     00018707   S.A      -     71871.5     8        8
                    1    3    7     00018027   S.A      -     71871.5     8        8
                           SPARES PARTITION        TOTAL PHYSICAL CAPACITY =  1221816.0

  TEST PARTITION                 Contains No Drives

  PRODUCTION PARTITION   0    2    0     00018708   P.A      1      71871.5     8        8
                         0    2    1     00018393   P.A      1      71871.5     8        8
                         0    2    2     00019188   P.A      1      71871.5     8        8
                         0    2    3     00017980   P.A      1      71871.5     8        8
                         0    2    4     00014528   P.A      1      71871.5     8        8
                         0    2    5     00018137   P.A      1      71871.5     8        8
                         0    2    6     00017106   P.A      1      71871.5     8        8
                         0    2    7     00018414   P.A      1      71871.5     8        8
                         0    3    0     00017991   P.A      1      71871.5     8        8
                         0    3    1     00018860   P.A      1      71871.5     8        8
                         0    3    2     00018544   P.A      1      71871.5     8        8
                         0    3    3     00014434   P.A      1      71871.5     8        8
                         0    3    4     00013666   P.A      1      71871.5     8        8
                         0    3    5     00018398   P.A      1      71871.5     8        8
                         0    3    7     00017985   P.A      1      71871.5     8        8
                         1    0    0     00018629   P.A      2      71871.5     8        8
                         1    0    1     00018483   P.A      2      71871.5     8        8
                         1    0    2     00013882   P.A      2      71871.5     8        8
                         1    0    3     00014004   P.A      2      71871.5     8        8
                         1    0    5     00014459   P.A      2      71871.5     8        8
                         1    0    6     00018103   P.A      2      71871.5     8        8
                         1    0    7     00017102   P.A      2      71871.5     8        8
```

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REPORT DATE: Mon Dec  8, 2003 10:42:20                    SVA SUBSYSTEM                    CRLEVEL3 V03R01L00   PAGE: 5

                                    DRIVE MODULE CONFIGURATION REPORT (LEVEL 3)

                    ************************************************************************
                    *  SITE NAME        = STORTEK   *  FRAME SERIAL NUMBER = 481000007745  *
                    *  SUBSYSTEM NAME   = MAZUMA    *  SUBSYSTEM MODEL     = V2Xf          *
                    *  DRIVE MODULES    = 62        *  PHYSICAL CAPACITY   = 4599.8(GB)     *
                    ************************************************************************

 DRIVE MODULE INFORMATION
 ----- ------ -----------

                   DEVICE-LOCATION   SERIAL   DEVICE         CAPACITY   --DEVICE TYPE---
                   UNIT TRAY SLOT    NUMBER   STATUS  ARRAY    (MB)     CLASS  SUB-CLASS
                   ---- ---- ----   --------  ------  -----  ---------  -----  ---------
                    1    1    0     00017096   P.A      2      71871.5     8        8
                    1    1    1     00017956   P.A      2      71871.5     8        8
                    1    1    2     00014289   P.A      2      71871.5     8        8
                    1    1    3     00014084   P.A      2      71871.5     8        8
                    1    1    4     00014230   P.A      2      71871.5     8        8
                    1    1    5     00013416   P.A      2      71871.5     8        8
                    1    1    6     00017634   P.A      2      71871.5     8        8
                    1    1    7     00017343   P.A      2      71871.5     8        8
                            PRODUCTION PARTITION    TOTAL PHYSICAL CAPACITY =  2156145.9

                                                    TOTAL PHYSICAL CAPACITY =  4599777.9


 ARRAY INFORMATION
 ----- -----------

                                    FORMATION   SPARE(S)  TWO DRIVE  GROUP DRAIN      D E V I C E    S T A T U S E S
        ARRAY  PARTITION  CONFIG  IN PROGRESS   NEEDED    FAILURE     STATUS      INITIALIZING  DRAINING  RECONSTRUCTION
        -----  ---------  ------  -----------  --------  ---------  -----------    ------------  --------  --------------
          0               H a s   N o t   B e e n   C o n f i g u r e d
          1   PRODUCTION   13+2       NO          NO        NO          N.A.            NO        N.A.         N.A.
          2   PRODUCTION   13+2       NO          NO        NO          N.A.            NO        N.A.         N.A.
          3               H a s   N o t   B e e n   C o n f i g u r e d
          4               H a s   N o t   B e e n   C o n f i g u r e d
          5               H a s   N o t   B e e n   C o n f i g u r e d
          6               H a s   N o t   B e e n   C o n f i g u r e d
          7               H a s   N o t   B e e n   C o n f i g u r e d
```

Definitions of LISTCFG Report Headings

The terms that appear as column headings in the reports generated by the LISTCFG subcommands are defined in the following list in alphabetical order.

ARRAY The number of the array to which a drive module is assigned.

BASE IDID The identifier of the base unit address trapped by the channel.

CA The status of caching for a functional device: Y = enabled; N = disabled.

CACHE SIZE The size (in megabytes) of volatile cache storage (lost if power is removed).

CAPACITY (MB)
The physical capacity (in megabytes) of the drive module.

CHANNEL INTERFACE - CLUSTER
The channel interface cluster identifier (values: 0 or 1).

CHANNEL INTERFACE - ID
The channel interface identifier associated with a specific cluster (values: A through P).

CHANNEL SPEED
The transfer rate (in megabytes per second) of the channel interface.

CHANNEL TYPE
The type of channel interface: either parallel (bus and tag cables) or ESCON or FICON.

CKD ENABL Indicates whether host access to the CKD device has been enabled.

CKD R/W Indicates whether write access to the CKD device is allowed.

COLL'D FREE SPACE PCT
(See COLLECTED FREE SPACE %)

COLLECTED FREE SPACE % - OVERALL
The percentage of array cylinders in the subsystem that are free array cylinders (that is, collected and entirely free of user data).

COLLECTED FREE SPACE % - PRODUCTION
The percentage of array cylinders in the Production partition that are free array cylinders.

COLLECTED FREE SPACE % - TEST
The percentage of array cylinders in the Test partition that are free array cylinders.

COMM The status of a functional device's use for ECAM communications: Y = device is designated to be an ECAM device; N = device is not an ECAM device.

COMPONENT ID/COMPONENT LEVEL
SRL is the microcode (software) release level for the subsystem.

CONFIG The configuration (size) of an array: 5+2 or 13+2.

CONFIG VCYL The total number of configured virtual cylinders that have been defined on this SVA subsystem.

COPYLIM The number of concurrent PPRC pair synchronizations for a given subsystem across all of the secondary subsystems with which it has pairs.

CYLS The number of primary data cylinders for the functional device.

DEFAULT ARRAY SIZE
The current array size value (defined with the ALTER SUBSYSTEM subcommand or SUBSYSTEM CONFIGURATION panel). This value, if not overridden when an array is formed, determines the size of newly formed arrays.

DEFAULT GLOBAL SPARES
The minimum number of spare drive modules that must remain available on the subsystem for a specific array size. (A 5+2 or 13+2 array requires 1 global spare.)

DEVICE STATUS
The current status of a drive module (2 characters: the first identifies the partition with which a drive is associated, the second shows the current state of the drive. (Explanations of all drive module status codes appear in Appendix A, “Drive Module Status.”)

DEVICE-LOCATION - UNIT/TRAY/SLOT
The drive module location.

DEVICE TYPE - CLASS
The class of a physical drive in the SVA subsystem. Beginning with the 9500 SVA, CLASS values are not used and the value shown in reports is always zero.

DEVICE TYPE SUB-CLASS
The sub-class of a physical drive in the SVA subsystem. The sub-classes are defined as follows: 2 = ESDI or SCSI strapped, 3 = SCSI unstrapped, 4 = 4-GB drive, 5 = 9-GB drive, 6 = 18-GB drive, and 7 = 36-GB drive.

DFW The status of DASD fast write for a functional device: Y = enabled; N = disabled.

DISK ARRAY CAPACITY (MB)
The back-end storage (in megabytes) available in the subsystem (shown for the Production partition, Test partition, and overall).

ECAM The status of a functional device's use as a privileged ECAM device: Y = device is designated to be a privileged ECAM device; N = device is not a privileged ECAM device.

FDID The SVA subsystem identifier for the functional device (values: 00 - FF).

FREE SPACE PCT
(See COLLECTED FREE SPACE %, UNCOLLECTED FREE SPACE %)

FUNCTIONAL CAPACITY (MB)
The functional capacity (in megabytes) defined for the device or partition.

ID (See INTERFACE ID)

INTERFACE ID
The channel interface identifier associated with a specific cluster (values: A through P).

INTERFACE NAME
The name you assigned to the channel interface.

NAME The name you assigned to the functional device.

NET CAP. LOAD (MB)
The back-end physical capacity (in megabytes) that is currently in use. This includes user data and the system areas needed to maintain the arrays. NCL does not include data in the cache until that data is written to the back end.

Note: This value includes the storage used by the mapping tables and functional track directories used to maintain the disk arrays.

NET CAP. LOAD PCT
The percentage of back-end physical capacity that is used (not free). This will display greater than 100% if Capacity on Demand support is installed and if PCAP is exceeded.

NUMBER OF FUNCTIONAL DEVICES
The number of functional devices defined with back-end storage in the subsystem.

NUMBER OF SCSI DOMAINS
The total number of SCSI domains in the subsystem.

NUMBER OF SCSI LUNS
The total number of SCSI logical unit numbers in the subsystem.

NUMBER OF SCSI TARGETS
The total number of SCSI targets in the subsystem.

NVS SIZE The size (in megabytes) of nonvolatile cache storage (backed up by battery).

OVERALL TOTALS
The sum of the test partition and production partition totals. For statistics that are ratios, including percentages, the totals are the weighted averages of the individual statistics.

PAV STATUS The PAV STATUS column indicates whether the device is a PAV Base or Alias.

The PAV status may be one of the following values:

- **B** indicates the device is a Base device with no Aliases.
- **B(***nnn***)** indicates the device is a Base device with *nnn* Aliases.
- **A–***fff* indicates the device is an Alias that is related to Base FDID of *fff*.
- **A–???** indicates that the Alias is in error; contact StorageTek Software Support.

PHYSICAL CAP USED (MB) - SHARED
The back-end physical space (in megabytes) that is used (shared) by multiple functional devices as a result of a SNAP subcommand.

Note: When a SNAP MINIDISK or SNAP VOLUME subcommand is executed, the space (megabytes) used by the source minidisk or volume is shifted from the UNIQUE column to the SHARED column. Similarly, the space used by the target minidisk or volume is shifted to the SHARED column, as well.

PHYSICAL CAP USED (MB) - UNIQUE
The back-end physical space (in megabytes) that is used by only one functional device. Amounts in this column represent space used by data for which no SNAP subcommand has been executed.

PHYSICAL CAP USED (MB) - TOTAL
The total (shared + unique) back-end physical space (in megabytes) that is used by a functional device. Due to snap operations, the TOTAL PHYSICAL CAP USED shown in the Selected Devices Summary can be much higher than the NET CAP. LOAD(MB) figure shown in the Subsystem Summary section.

Note: The values reported for the three terms above do not include the storage used by the mapping tables and functional track directories used to maintain the disk arrays.

PPRC STAT The PPRC STAT column indicates whether the device is part of a a PPRC pair and/or whether the device is a Power PPRC Bridge device.

The PPRC pair status is shown in the left side of the column and may take on one of the following values:

- A blank indicates the device is not part of any PPRC pair.
- A **P** indicates the device is a PPRC Primary.
- An **S** indicates the device is a PPRC Secondary.

The Power PPRC status is shown in the right side of the column and may take on one of the following values:

- A blank indicates the device is not a Power PPRC Bridge device.
- A **D** indicates the device is a Power PPRC Data Bridge.
- As **S** indicates the device is a Power PPRC Status Bridge.

PRODUCTION PARTITION
In a Drive Module Configuration report: Statistics for drive modules that form Production arrays.

In a Functional Device Configuration report: The totals of the above statistics for devices associated with the Production partition. For statistics that are ratios, including percentages, the totals are weighted averages of the individual statistics.

RANGE The number of addresses to be trapped by the channel interface.

SCSI DEVICE ADDRESS - DOMAIN TARGET LUN
The SCSI identifier for the functional device.

SCSI ENABL Indicates whether host access to the SCSI device has been enabled.

SCSI R/W Indicates whether write access to the SCSI device is allowed.

SELECTED DEVICES
In a Functional Device Configuration report: The number of functional devices selected by using the FDID, VOLUME, UNIT, or PARTITION parameters.

In a Drive Module Configuration report: The drive modules selected by using the DMOD parameter.

SITE LOCATION NO.
The number used by StorageTek to identify your site (must be the same for all SVA subsystems at the site).

SITE NAME The name (up to 8 characters) used by StorageTek to identify your site (must be the same for all SVA subsystems at the site).

SSID The subsystem identifier (SSID) for the emulated 3990 controller with which the functional device is associated (values: 0001 - FFFF).

SUBSYSTEM IDENTIFIERS
(See SSID)

SUBSYSTEM NAME
The name of the SVAA subsystem to which the report applies.

T/P The partition with which a functional device is associated:
T = Test; P = Production.

TEST PARTITION
In a Drive Module Configuration report: Statistics for drive modules that form Test arrays.

In a Functional Device Configuration report: The totals of the above statistics for devices associated with the Test partition. For statistics that are ratios, including percentages, the totals are weighted averages of the individual statistics.

TOTAL FUNC. CAPACITY (MB)
The total capacity (in megabytes) of all defined functional devices. This is the functional capacity that would be available if every track of

every device had a single record with a block length equal to the track size.

TOTAL PHYSICAL CAPACITY
The total physical capacity of the drive modules selected or in a specific partition.

The total physical capacity of all drive modules installed (whether or not they are assigned to an array) in the SVA subsystem.

Note that total capacity is shown in gigabytes at the end of the Drive Module Configuration report and in megabytes at the end of the Level 3 Subsystem Configuration report.

TOTALS A field that shows the production partition and test partition totals. For statistics that are ratios, including percentages, the totals are averages of the individual statistics.

TOT VCYL The total number of virtual cylinders that can be defined on this SVA subsystem.

TYPE The DASD type of a functional device. Possible values are: 3380-J, 3380-K, 3390-KE, 3390-1, 3390-2, 3390-3, 3390-9, SCSIA (3390-3 with SCSI format), or SCSIB (3390-9 with SCSI format).

UNCOLL FREE SPACE PCT
(See UNCOLLECTED FREE SPACE %)

UNCOLLECTED FREE SPACE %
The percentage of functional track bytes (in the Test partition, Production partition, and overall) that are free but unavailable (uncollected).

UNCONFIG VCYL
The total number of unconfigured virtual cylinders that remain available to be defined on this SVA subsystem.

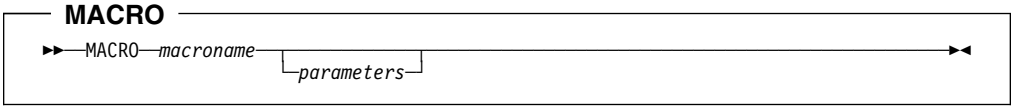
UNIT The host device address of the functional device as defined in the IOCP.

VOLSER The volume serial number for the functional device.

MACRO Subcommand

*** *Subcommand of SIBADMIN***

The MACRO subcommand executes an SVAA macro.



The *macroname* parameter specifies the name of the macro to be invoked.

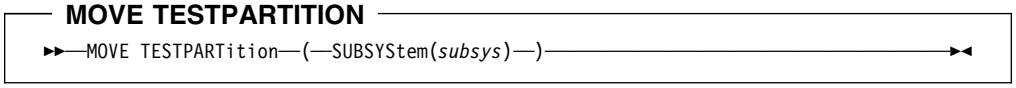
In CMS, the macro is an EXEC2 or REXX exec with a file name of *macroname* and a file type of **SIB**. Within the macro, the default addressing environment is **SIB**.

MOVE TESTPARTITION Subcommand

***** ***Subcommand of SIBADMIN***

The MOVE TESTPARTITION subcommand reassigns all drive modules in the Test partition to the Production partition. All functional device definitions and associated data are preserved intact on the reassigned drive modules.

Note: You cannot use this subcommand on the V2X, V960, or 9500 SVA—only on subsystems running earlier microcode. See "Functional Differences between Subsystems" on page 1-3 for more information.



Parameters

SUBSYSTEM (subsys)

Required

This parameter specifies the name of the SVA subsystem in which the move is to occur.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If the subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

Default value: None

Examples:
```
SUBSYSTEM(SUB1)
SUBSYS(SUBSYS1)
SUBSYS(1SUBSYS)
```

Example of MOVE TESTPARTITION

```
MOVE TESTPART (-
     SUBSYS(YUKON01) )
```

This example moves all drive modules associated with the Test partition in SVA subsystem **YUKON01** to the Production partition of that subsystem.

QUERY Subcommands

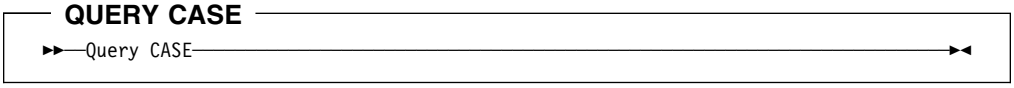
QUERY subcommands request the display of information about SVAA.

You use some QUERY subcommands to query a value set by a SET subcommand, by a profile during initialization, or by default. SVAA responds to these QUERY subcommands with a statement of the source of the setting, followed by the current value of the setting. SVAA responds to other QUERY subcommands with data in numbered SVAA messages.

QUERY CASE

* ***Subcommand of SIBADMIN***

This subcommand asks whether values of parameters that normally allow lowercase characters are automatically translated to uppercase.



Abbreviation: **Q CASE**

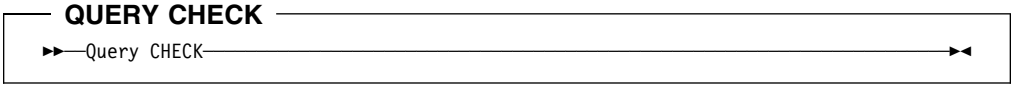
Response: CASE last set by *source*: UPPER or MIXED

where *source* is one of **profile, subcommand,** or **default**.

QUERY CHECK

* ***Subcommand of SIBADMIN***

This subcommand asks whether SVAA subcommand syntax-checking or simulation—or neither—is being performed.



Abbreviation: **Q CHECK**

Response: CHECK last set by *source*: NONE or SCAN or SIMU

where *source* is one of **profile, subcommand,** or **default**,

NONE indicates that neither syntax-checking nor simulation is in effect.

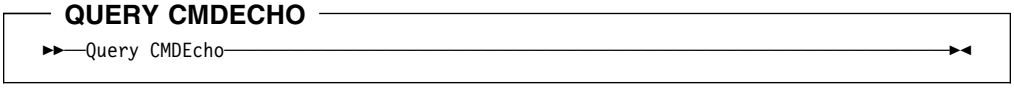
SCAN indicates that syntax-checking is in effect.

SIMU indicates that simulation is in effect.

QUERY CMDECHO

* ***Subcommand of SIBADMIN***

This subcommand asks whether SVAA subcommands are displayed at the destination specified by **SET DEST OUTMSG** before being executed.



Abbreviation: **Q CMDE**

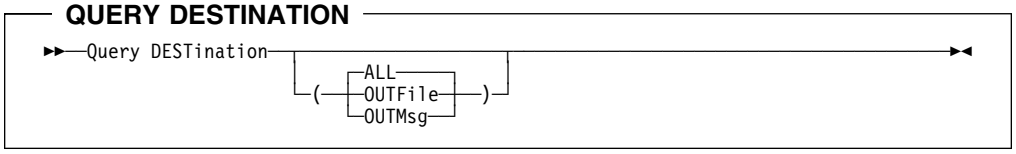
Response: CMDECHO last set by *source*: ON or OFF

where *source* is one of **profile, subcommand,** or **default**.

QUERY DESTINATION

*** *Subcommand of SIBADMIN***

This subcommand asks for the current destination for reports and messages, as set by default during SVAA initialization, by execution of a profile, or by a SET DESTINATION subcommand.



Abbreviation: **Q DEST**

Values: **ALL** asks for the destinations for both report and message output.

OUTF asks for the destination for configuration reports (for example, LISTCFG subcommand output).

OUTM asks for the destination for message output.

Default value: **ALL**

Response: OUTMSG last set by *source: destination*
OUTFILE last set by *source: destination*

where *source* is one of **profile, subcommand,** or **default**, and *destination* is one of:

TERMINAL—output goes to the user's terminal.

filename filetype—the name of a file to which report or message output is being sent.

EXEC VARIABLES—output is directed to EXEC stem variables

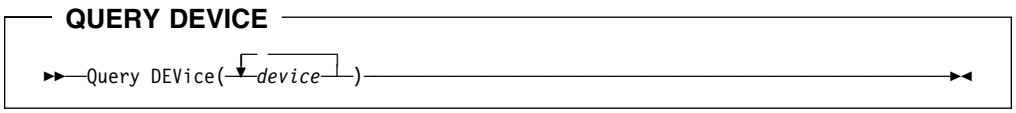
NULL DESTINATION—output is suppressed

QUERY DEVICE

*** *Subcommand of SIBADMIN***

This subcommand asks for SVA subsystem information about a host device.

Note: You cannot use this subcommand to display information about PAV Alias devices or Power PPRC Bridge devices. Use the DISPLAY DEVICE or LISTCFG DEVICE subcommands instead.



Abbreviation: **Q DEV**

Values: *device* is a virtual device address (1 to 4 hexadecimal digits) that is defined to the virtual machine executing the SVAA subcommand.

You can indicate devices with both lists and ranges.

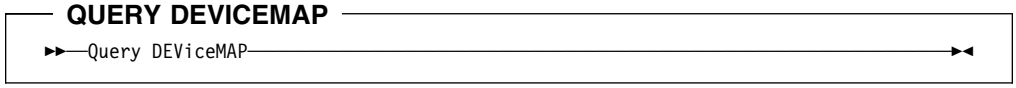
Response: SVAA messages SIB1868I and SIB1869I.

QUERY DEVICEMAP

*** *Subcommand of SIBADMIN***

This subcommand asks whether a system-to-host device mapping algorithm is in effect.

QUERY DEVICEMAP



Abbreviation: **Q DEVMAP**

Response: DEVICEMAP last set by *source*: ON or OFF

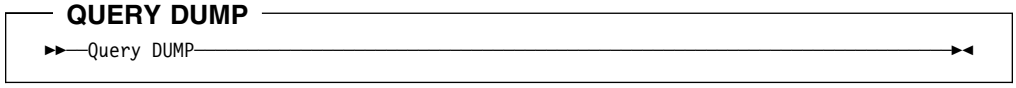
where *source* is one of **profile, subcommand,** or **default**.

QUERY DUMP

*** *Subcommand of SIBADMIN***

This subcommand asks whether a dump is to be created if SVAA terminates abnormally, and, if so, the ID of the VM user to be notified.

QUERY DUMP



Abbreviation: **Q DUMP**

Response: DUMP last set by *source*: ON or OFF DUMPID=* or id

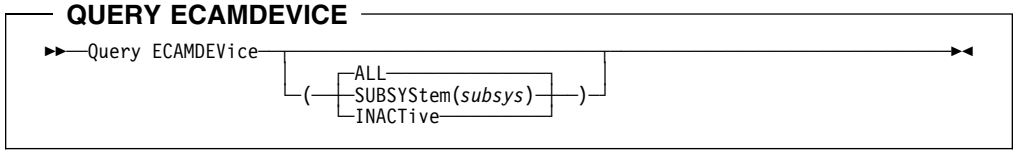
where *source* is one of **profile, subcommand,** or **default**.

QUERY ECAMDEVICE

*** *Subcommand of SIBADMIN***

This subcommand asks for the addresses of the ECAM devices defined for the specified subsystems (or all subsystems), or for the addresses of devices *not* currently active as ECAM communications devices.

QUERY ECAMDEVICE



Abbreviation: **Q ECAMDEV**

Values: **ALL** asks for the addresses of *all* devices defined as ECAM communications devices on *all* SVA subsystems.

SUBSYS(*subsys*) asks for the addresses of all ECAM communications devices for subsystem *subsys*.

INACT asks for the addresses of devices for which a SET ECAMDEVICE subcommand was issued when the device was offline.

Default value: **ALL**

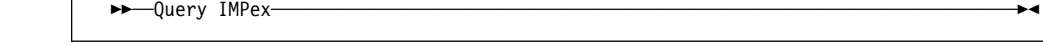
Response: SVAA messages SIB1820I and SIB1821I.

QUERY IMPEX

*** *Subcommand of SIBADMIN***

This subcommand asks for the status for executing SVAA macros. If IMPEX is on, SVAA macros are executed (if they exist) before treating the subcommand as an SVAA subcommand.

QUERY IMPEX



Abbreviation: **Q IMP**

Response: IMPEX last set by *source*: ON or OFF

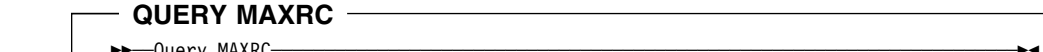
where *source* is one of **profile, subcommand,** or **default**.

QUERY MAXRC

*** *Subcommand of SIBADMIN***

This subcommand asks for the current MAXRC value (the maximum severity return code).

QUERY MAXRC



Abbreviation: **Q MAXRC**

Response: MAXRC last set by *source*: *nn*

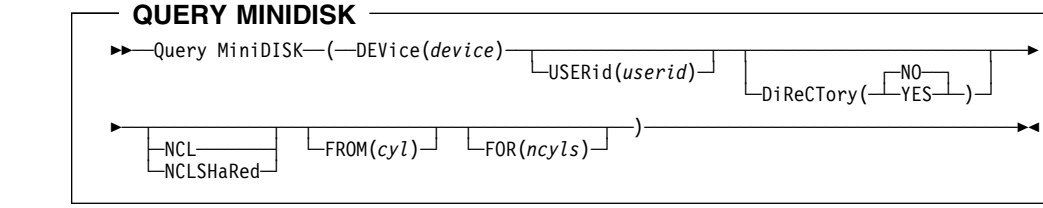
where *source* is one of **profile, subcommand,** or **default** and *nn* is the maximum return code.

QUERY MINIDISK

*** *Subcommand of SIBADMIN***

The QUERY MINIDISK subcommand displays device information for a specified minidisk (virtual device).

QUERY MINIDISK



Parameters

Note: DEVINFO or DEVMAINT directory authorization may be required, based upon what you specify in the USERID, DIRECTORY and NCL parameters. Authorization to execute CP DIAGNOSE code X'0E4' functions is required as follows:

- If you specify **DIRECTORY(YES)** and the USERID is the UIC, authorization to execute CP DIAGNOSE code X'0E4' function 1 is required (directory option DEVINFO).
- If you specify **DIRECTORY(YES)** and the USERID is *not* the UIC, authorization to execute CP DIAGNOSE code X'0E4' function 1 and 3 is required (directory option DEVMAINT).
- If you specify **DIRECTORY(NO)** and the USERID is the UIC, no authorization to execute CP DIAGNOSE code X'0E4' function 0 is required.
- If you specify **DIRECTORY(NO)** and the USERID is *not* the UIC, authorization to execute CP DIAGNOSE code X'0E4' function 0 and 3 is required (directory option DEVMAINT).

DEVICE (device)

Required

This parameter specifies the device for which information is to be obtained. Depending upon the setting of the DIRECTORY parameter, the device address is either an existing virtual device or a directory minidisk address.

Abbreviation: **DEV**

Values: *device* is the virtual device address of the minidisk: 1 to 4 hexadecimal digits.

You can specify only one device; no wildcard characters are accepted.

Default value: None

Example: **DEV(291)**

USERID (userid)

Optional

This parameter specifies the user ID of the virtual machine that owns the specified device.

Abbreviation: **USER**

Values: *userid* is 1 to 8 alphanumeric characters in the set: a to z, A to Z, 0 to 9, $, @, #

Default value: The user ID issuing the subcommand (UIC).

Example: **USER(MAINT1)**

DIRECTORY (YES | NO)

Optional

This parameter specifies whether the VM directory is to be used to identify the device address.

Abbreviation: **DRCT**

Values: **YES** specifies that the VM directory is to be used.

NO specifies that the user ID's currently defined virtual device is to be used.

Default value: **NO**

Example: **DRCT(YES)**

NCL | NCLSHARED
Optional

This parameter requests SVA subsystem information about back-end storage allocated for this minidisk. The response consists of the subsystem name and either:

- For **NCL**: The amount of subsystem back-end capacity (in megabytes) that is allocated for this minidisk, or
- For **NCLSHARED**: The percentage of subsystem back-end capacity that is allocated for this minidisk and shared by other functional devices as a result of a SnapShot command.

Abbreviation: **NCL** or **NCLSHR**

FROM (cyl)
Optional

This parameter specifies the starting cylinder relative to the beginning of the minidisk specified in the DEVICE parameter.

Values: *cyl* is a cylinder number: a decimal value ranging from 0 to n-1, where n is the number of cylinders in the minidisk. This value cannot exceed the size of the minidisk specified in the DEVICE parameter.

You cannot use ranges, lists, or wildcard characters.

Default value: **0**

Example: **FROM(120)**

FOR (ncyls)
Optional

This parameter specifies the number of cylinders for the minidisk specified in the DEVICE parameter.

Values: *ncyls* is the number of cylinders: a decimal value ranging from 1 to the number of cylinders in the minidisk. This value cannot exceed the size of the minidisk specified in the DEVICE parameter.

You cannot use ranges, lists, or wildcard characters.

Default value: Number of cylinders in the minidisk minus the FROM value.

Example: **FOR(3)**

Examples of QUERY MINIDISK

Example 1.

```
QUERY MINIDISK (DEVICE(191) )
```

This subcommand requests the display of minidisk information for the current user's 191 virtual device.

Response:

```
Userid   Vdev Volser Rdev  Cyls Start
MAINT     191 LSCV08  440     5   572
```

Example 2.

```
Q MDISK (USER(MAINT) DEV(192) NCL DRCT(YES) )
```

This subcommand requests the display of minidisk information and SVA back-end storage for MAINT's 192 minidisk.

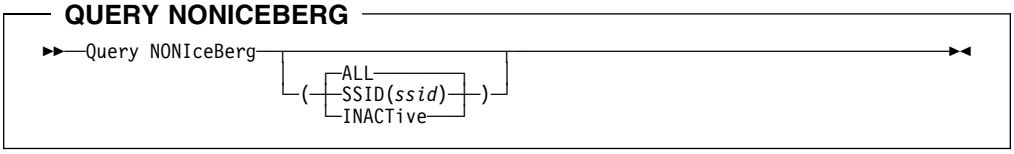
Response:

```
Userid   Vdev Volser Rdev  Cyls Start Type   SSname   FDID Physical-MB   Ratio
MAINT     192 LSCV17  736    40   948 3380K  ECCPRD00   36      10.482   2.7:1
```

QUERY NONICEBERG

*** *Subcommand of SIBADMIN***

This subcommand asks for the addresses of devices over which non-SVA subsystem statistics are obtained.



Abbreviation: **Q NONIB**

Values: **ALL** asks for the addresses of *all* devices over which statistics are obtained for non-SVA subsystems.

SSID(*ssid*) asks for the addresses of all devices on subsystem *ssid*.

INACT asks for the addresses of devices that were offline when the SET NONICEBERG subcommand was issued.

Default value: **ALL**

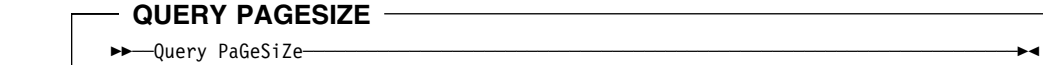
Response: SVAA messages SIB1822I and SIB1823I.

QUERY PAGESIZE

* ***Subcommand of SIBADMIN***

This subcommand asks for the currently specified number of lines per page for SVAA reports.

QUERY PAGESIZE



Abbreviation: **Q PGSZ**

Response: PAGESIZE last set by *source*: *nn*

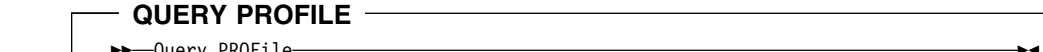
where *source* is one of **profile, subcommand,** or **default**, and *nn* is the number of lines per page.

QUERY PROFILE

* ***Subcommand of SIBADMIN***

This subcommand asks for the name of the SVAA profile macro.

QUERY PROFILE



Abbreviation: **Q PROF**

Response: PROFILE last set by *source*

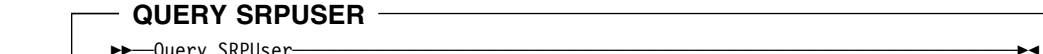
where *source* is either **PROFSIBA** or a *filename*.

QUERY SRPUSER

* ***Subcommand of SIBADMIN***

This subcommand asks for the user ID of the Reporter Service Virtual Machine.

QUERY SRPUSER



Abbreviation: **Q SRPU**

Response: SRPUSER last set by *source*: *userid*

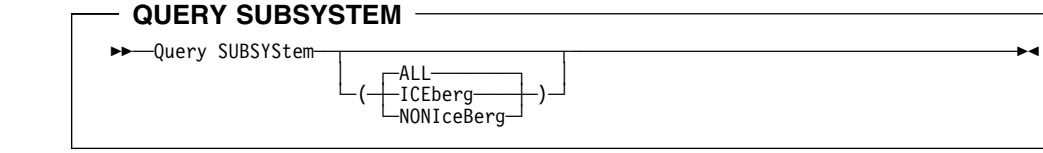
where *source* is one of **profile, subcommand,** or **default**.

QUERY SUBSYSTEM

* ***Subcommand of SIBADMIN***

This subcommand asks for information about SVA and non-SVA subsystems.

QUERY SUBSYSTEM



Abbreviation: **Q SUBSYS**

Values: **ALL** asks for information about all SVA and non-SVA subsystems.

ICE asks for information about SVA subsystems only.

NONIB asks for information about non-SVA subsystems only.

Default value: **ALL**

Response: **SVA** *subsys* **serial#** *serial* **has** *numdev* **ECAM devices.**

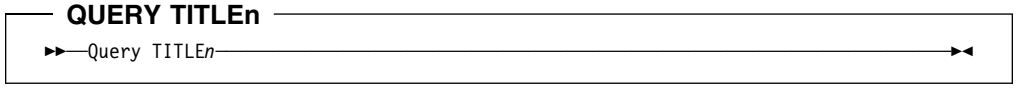
where *subsys* is the subsystem name, *serial* is the serial number of the subsystem, and *numdev* is the number of ECAM devices defined for the SVA subsystem.

QUERY TITLEn

*** *Subcommand of SIBADMIN***

This subcommand asks for the text of a report title line—either **Title1** (line 1), **Title2** (line 2), or **Title3** (line 3).

QUERY TITLEn



Abbreviation: **Q TITLEn** (where *n* is **1, 2, *or* 3**)

Response: TITLEn last set by *source: text*

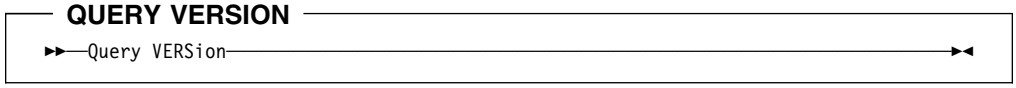
where *source* is one of **profile, subcommand,** or **default**, and *text* is the text of the title.

QUERY VERSION

*** *Subcommand of SIBADMIN***

This subcommand asks for the version level of the SVAA software.

QUERY VERSION



Abbreviation: **Q VERS**

Response: VERSION last set by *source*: Shared Virtual Array Administrator *v.r.m*.

where *source* is one of **profile, subcommand,** or **default**, *v.r.m* is the version, release, and level of SVAA installed at your location.

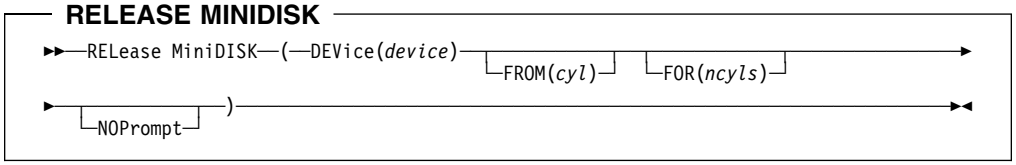
RELEASE MINIDISK Subcommand

*** *Subcommand of SIBADMIN***

The RELEASE MINIDISK subcommand initiates data space release. You must have write access to the virtual device address for which space is to be released. Once it has validated the subcommand parameters, SVAA prompts you to confirm the release request. An affirmative response initiates the release of the physical disk array space associated with the specified device.

You can have multiple concurrent RELEASE subcommands executing against the same or different devices. Each subcommand is a unique task and should complete normally. The RELEASE MINIDISK subcommand queries the real device and is provided with the cylinder boundaries for that disk. The FROM and FOR parameters are not required, but can be used if the link is a full-pack minidisk. Use caution; this subcommand revokes access to data.

CAUTION:
This subcommand destroys all data within the specified extents for this minidisk.



Parameters

DEVICE (device)

Required

This parameter specifies the device for which space is to be released.

Abbreviation: **DEV**

Values: *device* is the virtual device address of the minidisk: 1 to 4 hexadecimal digits.

You can specify only one device; no wildcard characters are accepted.

Default value: None

Example: **DEV(291)**

FROM (cyl)

Optional

This parameter specifies the first cylinder for which space is to be released from the minidisk.

Values: *cyl* is a cylinder number: a decimal value ranging from 0 to n-1, where n is the number of cylinders in the minidisk.

Default value: **0**

Example: **FROM(13)**

FOR (ncyls)

Optional

This parameter specifies the number of cylinders for which space will be released.

Values: *ncyls* is the number of cylinders: a decimal value ranging from 1 to the number of cylinders in the minidisk.

Default value: Number of cylinders in the minidisk

Example: `FOR(3)`

NOPROMPT

Optional

This parameter indicates that the space release is to proceed without prompting you for confirmation.

Abbreviation: `NOP`

Default value: None

Examples of RELEASE MINIDISK

Example 1.

```
RELEASE MINIDISK (-
     DEVICE(1234) )
```

This subcommand initiates data space release for virtual device address **1234**. Space release is to begin at cylinder **0** and continue through all cylinders on the specified minidisk.

Example 2.

```
REL MDISK (-
     DEV(123)-
     FROM(23) )
```

This subcommand initiates data space release for virtual device address **123**. Space release is to begin at cylinder **23** and continue through the rest of the cylinders on the specified minidisk.

Example 3.

```
REL MDISK (-
     DEV(234)-
     FROM(14)-
     FOR(20) )
```

This subcommand initiates data space release for virtual device address **234**. Space release is to begin at cylinder **14** and continue for **20** cylinders.

Example 4.

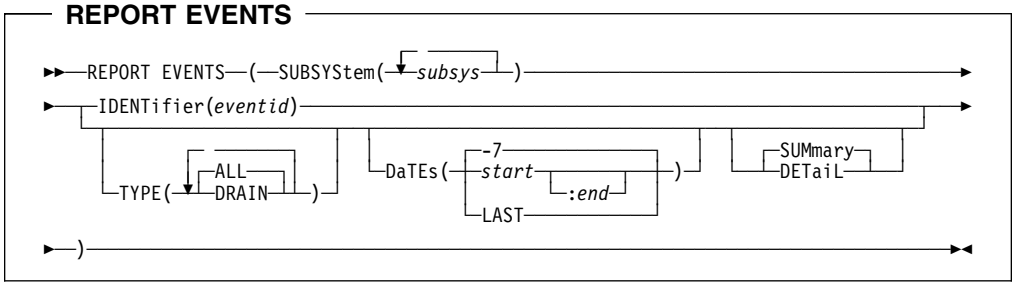
```
REL MDISK (DEV(343) FROM(10) FOR(15) NOPROMPT)
```

This subcommand initiates data space release for virtual device address **343**. Space release is to begin at cylinder **10** and continue for **15** cylinders. No prompt is to be issued before space release begins.

REPORT EVENTS Subcommand

*** *Subcommand of SIBADMIN***

The REPORT EVENTS subcommand generates a report on DRAIN events initiated within the most recent 60 days. You can limit the content of the report by specifying a single event number or by specifying an event type, dates, and/or level of detail.



Parameters

SUBSYSTEM (subsys)

Required

This parameter specifies one or more SVA subsystem names for which events are to be reported.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If a subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

You can use ranges, lists, and wildcard characters.

Default value: None

Examples:
```
SUBSYS(SUBSYS1 SUBSYS2)
SUBSYS(SUBSYS1:SUBSYS5)
SUBSYS(1SUBSYS)
```

IDENTIFIER (eventid)

Optional

This parameter specifies the SVAA-generated identifier for the event.

Note: If you enter this parameter, you cannot use the TYPE, DATES, or SUMMARY | DETAIL parameters.

Abbreviation: **IDENT**

Values: *eventid* is the identifier of an event: 1 to 10 digits with a value ranging from 1 to 4294967295.

Default value: None

Example: **IDENT(1234567890)**

TYPE ({ ALL DRAIN })

Optional

This parameter identifies one or more types of events to be reported.

Note: If you use the IDENT parameter, do not use the TYPE parameter.

Values: **ALL** specifies that *all* events are to be included in the report. **ALL** supersedes any other entry.

DRAIN specifies that DRAIN events are to be included.

Default value: **ALL**

Examples:
```
TYPE(DRAIN)
TYPE(ALL)
```

DATES (start [:end] | LAST)

Optional

This parameter specifies the dates for events to be included in the report.

Note: If you use the IDENT parameter, do not use the DATES parameter.

The *start* date and *end* date cannot be more than 60 days prior to the current date. (A maximum of 60 days of event data is stored by the SVA subsystem.)

If you specify both *start* and *end*, the *start* date must be earlier than, or equal to, the *end* date. The report covers the entire day for each date in the range.

If you specify the same date for *start* and *end*, the report covers only that one day.

If you specify only a single date (i.e., no *end* date) the report includes all events from that date up to and including the current date and time.

Abbreviation: **DTE**

Values: *start* specifies the beginning date for the report period. You can enter it in one of four formats:

ddmmmyyyy	A 9-character date string
-nn	1 or 2 digits (1 to 60) preceded by a minus sign, to indicate a number of days prior to the current date
0	Specifies today's date.
*****	Specifies that all 60 dates up to and including the current date are to be included in the report period.

end (optional) specifies the last date to be included in the report period. You can enter it in either the *ddmmmyyyy* or the *-nn* format. The default is today's date.

LAST specifies that the report is to cover only the last event of the types specified by the **TYPE** parameter.

Default value: **-7** (The seven-day period up to and including the current date, except when you use the **IDENT** parameter)

Examples: **DTE(*)** extracts all events for the last 60 days.

DTE(-10) extracts all events for the 10 days up to and including the current date.

DTE(-8:-2) extracts events for the period from 8 days prior to the current date through 2 days prior to the current date.

DTE(LAST) extracts data for the most recent event.

DTE(01JAN1999:01FEB1999) extracts events for all dates within the date range specified—provided the *start* date is not more than 60 days before the current date.

SUMMARY | DETAIL

Optional

This parameter specifies the level of detail for the report.

Note: If you use the IDENT parameter, do not use the SUMMARY | DETAIL parameter.

Abbreviation: **SUM** or **DETL**

SUM generates a report that, for each specified event, lists only: event type, event identifier, SVA subsystem name, node ID, user ID, and the date and time the event was initiated and completed.

DETL generates a report that provides detailed information on each specified event.

Default value: **SUM**

Examples of REPORT EVENTS

Example 1.

```
REPORT EVENTS (-
     SUBSYS(*) )
```

This example uses default parameter values and provides a summary report of all MAT and DRAIN events initiated within the last seven days in all SVA subsystems with which SVAA is in communication.

Example 2.

```
REPORT EVENTS (-
     SUBSYS (SVA*X)-
     DATES(05MAY1999)-
     SUM)
```

For SVA subsystems with names that begin with **SVA** and end with **X**, this example provides a summary report on all events initiated on or after May 5th, 1999, up to and including the current date.

Example 3.

```
REPORT EVENTS (-
     SUBSYS (STKSYS1)-
     IDENTIFIER(7312156748) )
```

This example provides a detailed report on event number 7312156748 on SVA subsystem **STKSYS1**.

Example 4.

```
REPORT EVENTS (-
     SUBSYS (*)-
     DATES(LAST) )
```

This example produces a summary report on the last MAT event and the last DRAIN event initiated in any SVA subsystem in communication with SVAA.

Example 5.

```
REPORT EVENTS (-
     SUBSYS (STKSYSA)-
     DATES(-5)-
     DETL )
```

This example produces a detailed report of all events that were initiated in the last five days on SVA subsystem **STKSYSA**.

SET Subcommands

The SET subcommands control the setting or define the value of SVAA variables. The default values shown in the subcommand descriptions are the values that are in effect if you have not explicitly defined them with the SET subcommand.

Parameter values set with the SET subcommands are not saved from one invocation of SIBADMIN to the next.

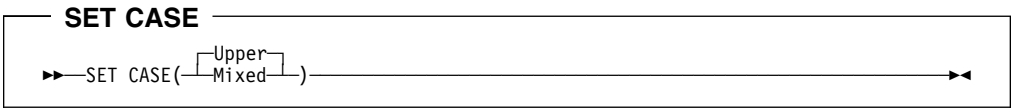
SET subcommands issued under SIBADMIN apply only to the current execution of SIBADMIN.

You can execute SET subcommands in either the PROFSIBA SIB or PROFSIBS SIB macro.

SET CASE

***** ***Subcommand of SIBADMIN***

This subcommand specifies whether values of parameters that normally allow lowercase characters are to be translated automatically to uppercase.



Values: **Upper** or **Mixed**

Default value: **U**

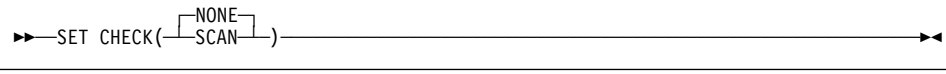
Example: **SET CASE(M)**

SET CHECK

***** ***Subcommand of SIBADMIN***

This subcommand specifies whether SVAA subcommand syntax checking is to be performed.

SET CHECK



Values: **NONE** turns off subcommand syntax checking.

SCAN turns on subcommand syntax checking. This option enables you to validate syntax for an entire batch file before it is executed.

Default value: **NONE**

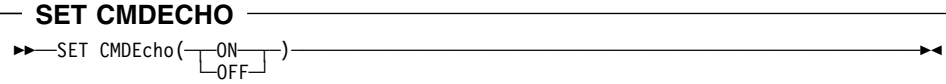
Example: **SET CHECK(SCAN)**

SET CMDECHO

*** *Subcommand of SIBADMIN***

This subcommand specifies whether SVAA subcommands are to be displayed at the destination specified by **SET DEST OUTMSG** before execution.

SET CMDECHO



Abbreviation: **SET CMDE**

Values: **ON** or **OFF**

Default value: **OFF** for SIBADMIN

Example: **SET CMDE(ON)**

SET DESTINATION

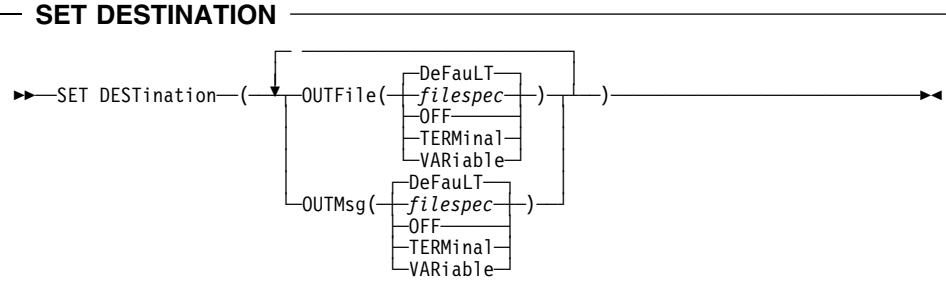
*** *Subcommand of SIBADMIN***

This subcommand enables you to redirect messages (via **OUTMsg**) and reports (via **OUTFile**) to alternate destinations. SET DESTINATION does not affect the destination of:

- SAS reports (Device Performance, Cache Effectiveness, and Space Utilization reports)
- Command output or messages generated by ISPF requests (you must use REXX variables)

Note: You can redirect the output of any individual SVAA subcommand, thus overriding (for *only* that subcommand) the destination you specify with SET DESTINATION. For more information, see “Redirecting Subcommand Output” on page 9-8.

SET DESTINATION



Abbreviation: **SET DEST**

Values: **OUTF** redirects report output (for example, LISTCFG subcommand output) to the destination indicated by the subparameter value.

OUTM redirects a message to the destination indicated by the subparameter value.

The subparameter is one of the following:

filespec Direct output to the file *filespec* (a SAS/C-style file name).

filespec has a maximum of 22 characters.

DeFauLT **OUTFile** defaults to a CMS file called SIBRPT LISTING A1. **OUTMsg** defaults to **TERMINAL**.

In ISPF, both destinations default to **VARIABLE**.

OFF Suppress output.

TERMinal Display output at the terminal.

VARiable Direct output to *exec* stem variables.

SVAA output for destination OUTMSG is written to stem variable SIBLMSG.*n*. This allows a REXX EXEC to issue an SVAA subcommand and analyze the returned results (messages and reports) in REXX variables.

Output for destination OUTFILE is written to the stem variable SIBRMSG.*n* (*n* is the value of an occurrence of SIBLMSG or SIBRMSG).

The variables with *n*=0 contain the number of variables generated. For example, if SIBRMSG.0=17, then variables SIBRMSG.1 through SIBRMSG.17 contain the data. The SIBRMSG*n* and SIBLMSG*n* variables are set to 0 before the execution of each SVAA subcommand.

Note: REXX must be available to use this value.

Default value: **DFLT**

Example: **SET DEST(OUTFILE(REPORT OUT A) OUTMSG(VAR))**

SET DEVICEMAP

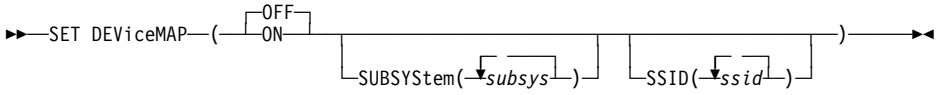
*** *Subcommand of SIBADMIN***

This subcommand specifies whether a device mapping algorithm is to be in effect when an SVA functional device is referenced by unit or volser. (For more information on device mapping, see "SVAA Device Mapping" in the *SVAA for VM Installation, Customization, and Maintenance* guide.)

To use device mapping, your VM privilege class must allow you to query real device volsers and to execute the CP DIAGNOSE code X'0E4'. (See the *SVAA for VM Installation, Customization, and Maintenance* guide for information on defining privilege classes.)

Note: This subcommand remains in effect for the duration of the session. For a more permanent effect, place a SET DEVICEMAP subcommand in the SVAA profile (PROFSIBA SIB or PROFSIBS SIB).

SET DEVICEMAP



Abbreviation: **SET DEVMAP**

Values: **ON** specifies that a device mapping algorithm is to be used for all subsystems known to SVAA *except* for any exclusions indicated by **SUBSYS** or **SSID**.

OFF specifies that a device mapping algorithm is *not* to be used for any subsystems known to SVAA *except* for any inclusions indicated by **SUBSYS** or **SSID**.

SUBSYS (*subsys***)** identifies one or more SVA subsystems for which a device mapping algorithm is not to be used (if **ON** is specified) or used (if **OFF** is specified). *subsys* is a 1- to 8-character subsystem name.

Note: If a subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

SSID (*ssid***)** identifies one or more non-SVA subsystems for which a device mapping algorithm is not to be used (if **ON** is specified) or used (if **OFF** is specified).
ssid is a 4-digit (hexadecimal) subsystem ID.

Default value: **OFF**

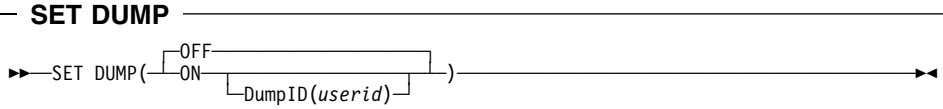
Example:
```
SET DEVMAP(ON SUBSYS(IBMRVA03 MARY)-
     SSID(0013 004E 002B) )
```

SET DUMP

*** *Subcommand of SIBADMIN***

This subcommand specifies whether a dump is to be produced if SVAA terminates abnormally. Additionally, you have the option of specifying a VM userid to receive the dump.

SET DUMP



Values: **ON** or **OFF** and optionally: **DID(***userid***)**

userid is 1 to 8 characters

Default value: **OFF**

userid defaults to the user executing the subcommand.

Example:
```
SET DUMP(ON DID(MAINT9) )
```

SET ECAMDEVICE

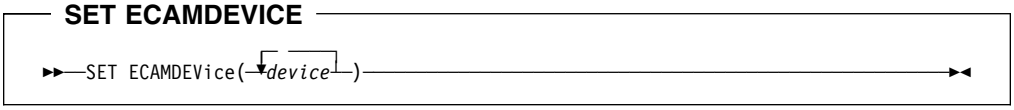
* ***Subcommand of SIBADMIN***

This subcommand specifies devices (as defined to the host) to be used for ECAM communications. You can specify multiple (up to 100) ECAM devices.

You must include the SET ECAMDEVICE subcommand in the PROFSIBA REXX EXEC (if you are using it).

Notes:

1. Do not specify a device that does not exist or has not been mapped.
2. If you issue this subcommand while the target device is offline, the device is considered inactive and does not appear in response to a QUERY ECAMDEVICE (ALL) subcommand.
3. Do not issue this subcommand against a PPRC primary or secondary volume; that is, do not try to define a PPRC volume as an ECAM device.
4. You cannot use this subcommand on Power PPRC Bridge devices.



Abbreviation: **SET ECAMDEV**

Values: *device* is a virtual device address (1 to 4 hexadecimal digits) that is defined to the virtual machine executing the SVAA subcommand.

You can specify both lists and ranges of devices.

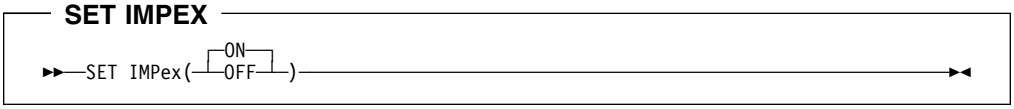
Default value: None

Example: **SET ECAMDEV(2aE 730 112D)**

SET IMPEX

* ***Subcommand of SIBADMIN***

This subcommand specifies the setting for the implied execution of SVAA macros. If IMPEX is **ON**, an SVAA subcommand is treated as a potential SVAA macro. If the macro does not exist, normal SVAA subcommand processing is performed.



Abbreviation: **SET IMP**

Values: **ON** or **OFF**

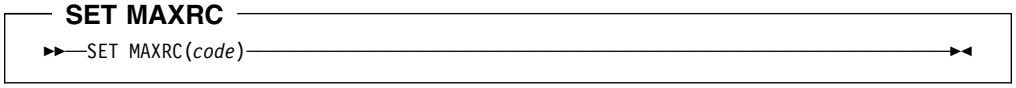
Default value: **ON**

Example: **SET IMPEX(OFF)**

SET MAXRC

* ***Subcommand of SIBADMIN***

For SVAA initialization, this subcommand sets the maximum return code (severity) that will be accepted from the initialization routines and the SVAA profile macro and still allow initialization to continue.



Values: *code* is an unsigned integer ≥ 0.

Default value: **8**

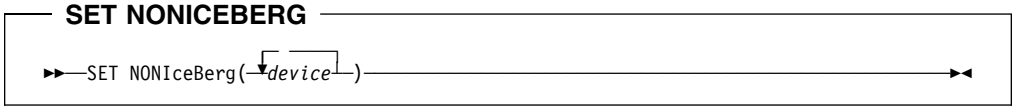
Example: **SET MAXRC(12)**

SET NONICEBERG

*** *Subcommand of SIBADMIN***

This subcommand specifies devices (as defined to the host) over which non-SVA subsystem statistics are obtained.

Note: If you issue this subcommand while the target device is offline, the device is considered inactive and does not appear in response to a QUERY NONICEBERG (ALL) subcommand.



Abbreviation: **SET NONIB**

Values: *device* is a virtual device address (1 to 4 hexadecimal digits) that is defined to the virtual machine executing the SVAA subcommand.

You can specify devices with both lists and ranges.

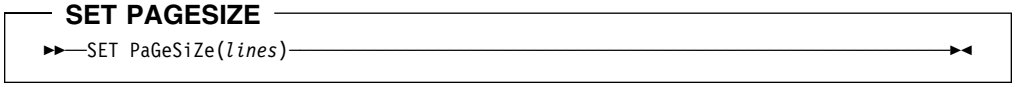
Default value: None

Example: **SET NONIB(333 2aa)**

SET PAGESIZE

*** *Subcommand of SIBADMIN***

This subcommand specifies the number of lines per page for SVAA reports.



Abbreviation: **SET PGSZ**

Values: *lines* is a 2-digit number ranging from 40 to 99.

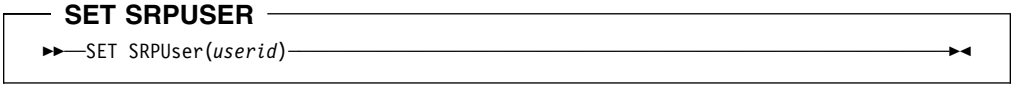
Default value: **60**

Example: **SET PGSZ(55)**

SET SRPUSER

*** *Subcommand of SIBADMIN***

This subcommand identifies the user ID of the Reporter Service Virtual Machine that is to carry out SVAA data collection.



Abbreviation: **SET SRPU**

Values: *userid* is the VM user ID: 1 to 8 alphanumeric characters.

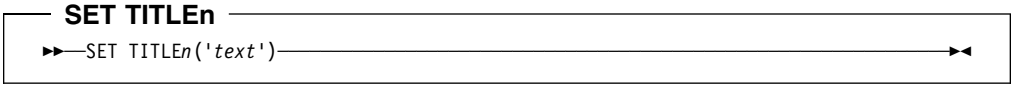
Default value: **STKSRP**

Example: **SET SRPUSER(JMDCVM)**

SET TITLEn

*** *Subcommand of SIBADMIN***

This subcommand (**SET TITLE1**, **SET TITLE2**, or **SET TITLE3**) defines the text string (such as an organization name or address) that is to appear in one of the three title lines of SVAA reports. *n* is **1** (line 1), **2** (line 2), or **3** (line 3). SVAA converts all titles to uppercase.



Values: *text* is a text string (0 to 127 characters).

The text must be enclosed in parentheses and either single or double quotation marks. However, if the text string contains no blanks, the quotation marks are optional.

Default value: None

Example: **SET TITLE1('Line 1 of report title')**

SNAP MINIDISK Subcommand

*** *Subcommand of SIBADMIN***

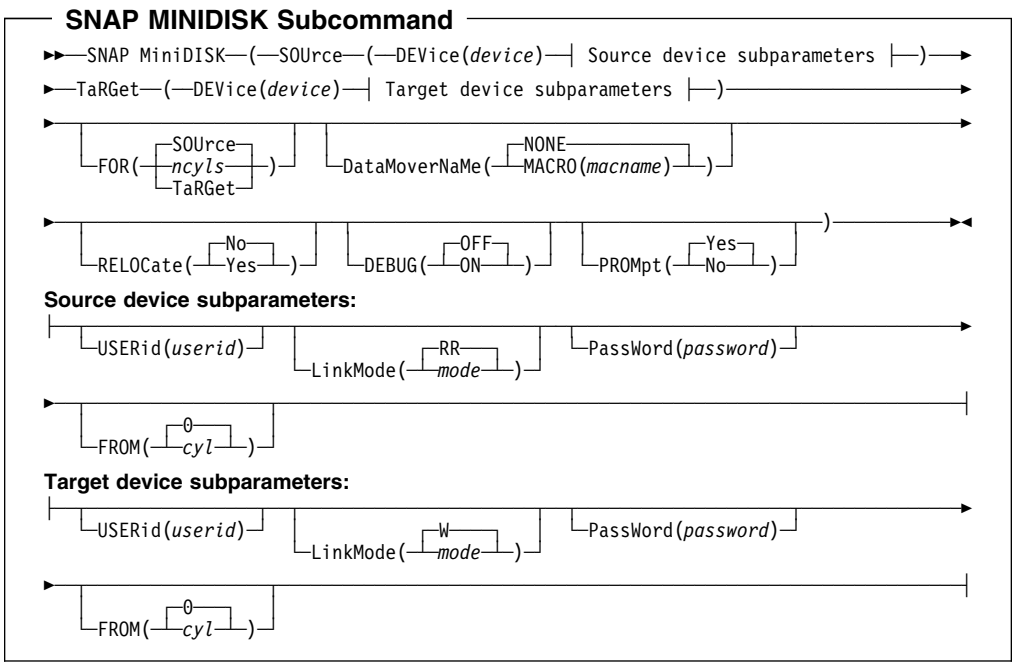
This subcommand duplicates one minidisk. The source and target minidisks can be partial volume minidisks, full volume minidisks, temporary disks, or dedicated DASD volumes[1]. You cannot use SnapShot to snap[2] between unlike physical devices, such as from 3380s to 3390s. PAV Alias devices cannot be used as the source or target of SNAP MINIDISK.

Note: If the target minidisk is CMS ACCESSed, it will be necessary to re-ACCESS the minidisk once the snap has completed in order for the CMS filesystem to see the changes.

---

[1] Volumes dedicated to the userid executing the SnapShot subcommand.

[2] In Chapter 5, “snap” is defined as the process of duplicating data with SnapShot.



Parameters

The parameters and subparameters of the SNAP MINIDISK subcommand follow in alphabetical order.

DATAMOVERNAME (NONE | MACRO (macname))

Optional

Snapping requires a data mover when the source and target minidisks do not reside in the same SVA subsystem and partition. This parameter specifies a data mover to physically copy the minidisk in cases when you cannot use SnapShot.

SnapShot executes a macro that dynamically invokes the data mover and supplies the commands to accomplish the copy operation physically. A message notifies you that the data mover is being invoked.

If you do not specify the DATAMOVERNAME parameter and the data mover is needed, or if SnapShot is unable to access the data mover, the operation is cancelled.

Abbreviation: **DMNM**

Values: **NONE** specifies that a data mover is not to be used.

MACRO(*macname*) specifies the SVAA macro that is to be invoked when SnapShot determines that a data mover is required to perform the copy operation.

On the RUN disk, SVAA provides a sample macro named SIBDMDDR that uses the IBM Disk Dump Restore (DDR) utility to copy source cylinder extents to the target device. See the comment lines in the SIBDMDDR macro for information about the parameters SVAA passes to the macro, and the expected return codes.

Default value: **NONE**

Example: **DMNM(MACRO(SIBDMDDR))**

Note: The time required to copy a large minidisk can be significant, because the data mover program completes the entire copy operation before returning control to the user.

DEBUG (ON | OFF)

Optional

This parameter enables or disables the logging of diagnostic messages.

Note: Use DEBUG(ON) only at the request of a customer support representative—to facilitate troubleshooting of the SNAP MINIDISK subcommand.

Abbreviation: **DEBUG**

Values: **ON** enables generation of diagnostic messages

OFF disables generation of diagnostic messages

Default value: **OFF**

Example: **DEBUG(ON)**

DEVICE (device)

Required subparameter of the SOURCE and TARGET parameters.

This subparameter specifies the virtual address of the source or target device.

Abbreviation: **DEV**

Values: *device* specifies the virtual device address of the source or target minidisk.

Default value: None

Examples: **DEV(191)**
DEV(x'0191')

Note: If you also specify the USERID subparameter, the device is a minidisk specified in the VM directory. If you do not also specify the USERID subparameter, the device is an existing virtual device in your current I/O configuration.

FOR (ncyls | SOUrce | TaRGet)

Optional

This parameter specifies the number of cylinders to be snapped from the source minidisk to the target minidisk.

Abbreviation: **FOR(SOU)** or **FOR(TRG)**

Values: *ncyls* specifies the number of contiguous cylinders to be snapped.

SOUrce specifies all of the cylinders to the end of the source minidisk, starting with the cylinder specified by the FROM subparameter for the source minidisk.

TaRGet specifies all of the cylinders to the end of the target minidisk, starting with the cylinder specified by the FROM subparameter for the target minidisk.

Default value: **SOURCE**

Example: **FOR(TRG)**

Note: The number of cylinders specified must be available on both the source and target minidisks.

FROM (cyl)

Optional subparameter of the SOURCE and TARGET parameters.

This subparameter specifies the starting cylinder for the snap relative to the beginning of the minidisk.

Abbreviation: **FROM**

Values: *cyl* specifies the starting cylinder of the snap, relative to the beginning of the minidisk. *cyl* is a whole number in the range 0 to n-1, where n is the number of cylinders in the minidisk.

Default value: **0**

Example: **FROM(20)**

LINKMODE (mode)

Optional subparameter of the SOURCE and TARGET parameters. Ignored unless the USERID subparameter is also specified.

This subparameter specifies the link mode of the source or target minidisk, as specified in the documentation of the CP LINK command.

Abbreviation: **LM**

Values: For the source minidisk, any one of the values **R, RR, W, WR, M, MR, MW, SR, SW, SM, ER, EW**.

For the target minidisk, any one of the values **W, M, MW, SW, SM, EW**.

Default value: For the source minidisk, **RR**

For the target minidisk, **W**

Example: **LM(MW)**

PASSWORD (password)

Optional subparameter of the SOURCE and TARGET parameters. Ignored unless the USERID subparameter is also specified.

This subparameter specifies the CP LINK password for the minidisk specified with the SOURCE or TARGET parameters and their subparameters.

Abbreviation: **PW**

Values: *password* specifies the password to be supplied to CP for executing the LINK command. Lists and wildcards are not allowed.

Default value: None

Example: **PW(MAGIC)**

Note: Using an external security manager may preclude the use of this subparameter.

PROMPT (Yes | No)

Optional

This parameter specifies whether a prompt is to be displayed about the source and target minidisks, giving you the option to either continue or cancel the request.

Abbreviation: **PROM**

Values: **Yes** specifies that the prompt is to be displayed.

No specifies that the prompt is not to be displayed.

Default value: **Yes**

Example: **PROMPT(N)**

RELOCATE (Yes | No)

Optional

This parameter specifies whether the count fields are to be relocated to real cylinder 0 of the DASD volume.

Abbreviation: **RELOC**

Values: **Yes** specifies that the SVA is to create target count fields that match the real cylinder location of the target device. **Yes** is valid only if the target device is defined to begin on real cylinder 0.

No specifies that the SVA is to use the source count fields for the target count fields.

Default value: **NO**

Example: **RELOC(Y)**

Notes:

1. Incorrect use of this parameter may make the target minidisk unusable.
2. In normal use, VM neither requires nor supports relocated count fields.

SOURCE

Required

This parameter and its subparameters define the virtual DASD device to be snapped. Use the DEVICE parameter to specify the device. PAV Alias devices cannot be used as the source of a snap.

Abbreviation: **SOU**

Values: See the DEVICE, USERID, LINKMODE, PASSWORD and FROM subparameters.

Default value: None.

TARGET

Required

This parameter and its subparameters define the virtual DASD device to receive the snap. PAV Alias devices cannot be used as the target of a snap. Use the DEVICE parameter to specify the device.

Abbreviation: **TRG**

Values: See the DEVICE, USERID, LINKMODE, PASSWORD, and FROM subparameters.

Default value: None.

USERID (userid)

Optional subparameter of the SOURCE and TARGET parameters.

This subparameter specifies the VM userid that owns the minidisk specified with the SOURCE or TARGET parameters. If you use this subparameter, the device is a directory-defined minidisk. If you do not use this subparameter, the device is an existing virtual device in your virtual machine's I/O configuration.

Abbreviation: **USER**

Values: *userid* specifies the userid of the target minidisk. When you specify this parameter, SnapShot uses the CP LINK command to link to the specified userid's minidisk.

Default value: None

Example: **USER(FRED)**

Examples of SNAP MINIDISK

Example 1.

```
SNAP MDISK (-
     SOURCE (DEV(191))-
     TARGET (DEV(291)) )
```

This subcommand snaps the 191 minidisk to a 291 minidisk without the data mover.

Example 2.

```
SNAP MDISK (-
     SOU (USER (MAINT) DEV(200))-
     TRG (USER (BILL) DEV(300))-
     DMNM (MACRO(SIBDMDDR)) )
```

This subcommand snaps with the data mover if SnapShot cannot be used.

SNAP VOLUME Subcommand

* ***Subcommand of SIBADMIN***
* ***For privileged VM users only***

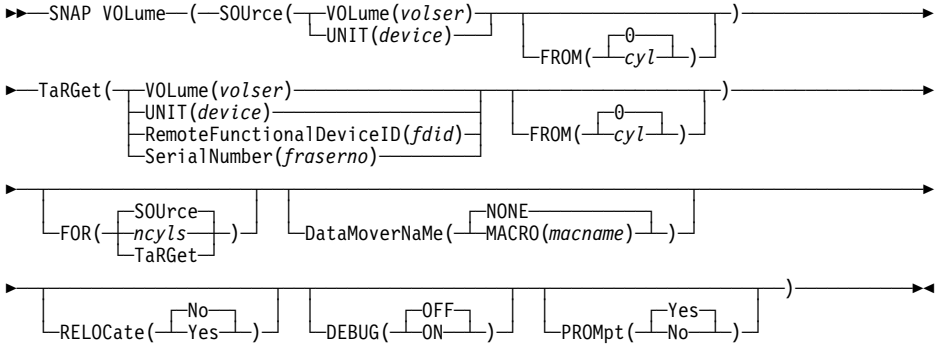
This subcommand duplicates a single physical volume or a range of cylinders within a volume. If the source and target volumes reside within a single SVA subsystem, SVAA uses SnapShot to make the duplicate. If the source and target volumes either reside on different SVA subsystems or are not both on SVA devices, SnapShot allows you to call a data mover to physically duplicate the source.

Notes:

1. You can snap a SCSI volume to a VM 3390 volume if the SCSI volume has been initialized with a device number or volser. (This is done with the INIT parameter of the DEFINE DEVICE subcommand or with the INITIALIZE DEVICE subcommand.) *However*, you *cannot* snap a VM volume to a SCSI volume.
2. You must be authorized to execute the CP ATTACH and DEFINE MDISK commands.
3. If the target volume is attached to SYSTEM or a USER, it will be necessary to RE-ATTACH the volume once the snap has completed in order for CP to see the changes.
4. PAV Alias devices can **not** be used as the source or target of a volume snap.
5. If you are requesting PPRC Remote SnapShot, some of the SNAP VOLUME parameters are invalid and others are ignored. Refer to the SNAP VOLUME parameter descriptions for more information.

CAUTION:
Power PPRC Bridge devices are not intended for use as data storage devices. You should not attempt to ICKDSF initialize and/or vary any Bridge device online to a host operating system, since all user and system data can be destroyed during the establishment of a Power PPRC Bridge pair. Therefore, you should not attempt to use SnapShot to snap data to or from Power PPRC Bridge devices.

SNAP VOLUME Subcommand



Parameters

The parameters and subparameters of the SNAP VOLUME subcommand follow in alphabetical order.

DATAMOVERNAME (NONE | MACRO (macname))

Optional

This parameter specifies a data mover program to physically copy the volume in cases when you cannot use SnapShot. Snapping requires a data mover when the source and target volumes do not reside in the same SVA subsystem and partition.

SnapShot executes a macro that dynamically invokes the data mover, a macro that supplies the commands to accomplish the snap operation physically. A message notifies you that the data mover is being invoked.

If you do not specify the DATAMOVERNAME parameter and the data mover is needed, or if SnapShot is unable to access the data mover, the operation is cancelled. All copies made with the data mover mimic the physical copying nature of SnapShot (they are track level, not logical).

Notes:

1. If PPRC Remote SnapShot is requested, only DATAMOVERNAME(NONE) is valid. Other parameter options result in an error message.

Abbreviation: **DMNM**

Values: **NONE** specifies that a data mover is not to be used.

MACRO(*macname*) specifies the SVAA macro that is to be invoked when SnapShot determines that a data mover is required to perform the copy operation.

On the RUN disk, SVAA provides a sample macro named SIBDMDDR that uses the IBM Disk Dump Restore (DDR) utility to copy source cylinder extents to the target device. See the comment lines in the SIBDMDDR macro for information about the parameters SVAA passes to the macro, and the expected return codes.

Default value: **NONE**

Example: **DMNM(MACRO(SIBDMDDR))**

Note: The time required to copy a large volume can be significant, because the data mover program completes the entire copy operation before returning control to the user.

DEBUG (ON | OFF)

Optional

This parameter enables or disables the logging of diagnostic messages.

Note: Use DEBUG(ON) only at the request of a customer support representative—to facilitate troubleshooting of the SNAP VOLUME subcommand.

Abbreviation: **DEBUG**

Values: **ON** enables generation of diagnostic messages

OFF disables generation of diagnostic messages

Default value: **OFF**

Example: **DEBUG(ON)**

FOR (ncyls | SOUrce | TaRGet)

Optional

This parameter specifies the number of cylinders to be snapped from the source volume to the target volume.

Abbreviation: **FOR(SOU)** or **FOR(TRG)**

Values: *ncyls* specifies the number of contiguous cylinders to be snapped.

SOUrce specifies all of the cylinders to the end of the source volume, starting with the cylinder specified by the FROM subparameter of the SOURCE volume.

TaRGet specifies all of the cylinders to the end of the target volume, starting with the cylinder specified by the FROM subparameter of the TARGET volume.

Default value: **SOURCE**

Example: **FOR(TRG)**

Note: The number of cylinders specified must be available on both the source and target volumes.

FROM (cyl)

Optional subparameter of the SOURCE and TARGET parameters.

This subparameter specifies the starting cylinder for the snap, relative to the beginning of the volume.

Abbreviation: None

Values: *cyl* specifies the starting cylinder of the snap, relative to the beginning of the volume. *cyl* is a whole number in the range 0 to n-1, where n is the number of data cylinders in the volume.

Default value: 0

Example: **FROM(20)**

PROMPT (Yes | No)

Optional

This parameter specifies whether a message is to be displayed about the source and target volumes, prompting the user with the option to continue or cancel the request.

Abbreviation: **PROM**

Values: **Yes** specifies that the prompt is to be displayed.

No specifies that the data is not to be displayed.

Default value: **Yes**

Example: **PROMPT(N)**

RELOCATE (Yes | No)

Optional

This parameter specifies whether the count fields are to be relocated to real cylinder 0 of the DASD volume.

Abbreviation: **RELOC**

Values: **Yes** specifies that the SVA is to create target count fields that match the real cylinder location. **Yes** is valid only if the target device is defined to begin on real cylinder 0, such as an OS/390-formatted volume.

No specifies that the SVA is to use the source count fields for the target count fields, such as a VM CP-formatted volume.

Default value: **NO**

Example: **RELOC(Y)**

REMOTEFUNCTIONALDEVICEID(fdid)

Conditional.

This parameter requests a PPRC Remote SnapShot and identifies the target functional device ID on the remote SVA subsystem. It is used in conjunction with SERIALNUMBER and precludes specifying either VOLUME or UNIT parameters.

Abbreviation: **RFDID**

Values: *fdid* specifies a target functional device identifier on the remote SVA subsystem. *fdid* requirements:

- offline to all hosts, i.e., no path groups established
- device type must match the PPRC secondary device
- must be write-enabled (CKD R/W) and CKD enabled
- cannot be a PAV Alias device
- cannot be a PPRC bridge volume, secondary device, or primary device

Lists, ranges, and wildcards are not allowed.

Default value: **None.**

Example: **RFDID(3FE)**

SERIALNUMBER(fraserno)

Conditional.

This parameter requests a PPRC Remote SnapShot and identifies the frame serial number of the remote SVA subsystem. It is used in conjunction with REMOTEFUNCTIONALDEVICEID and precludes specifying either VOLUME or UNIT parameters.

Abbreviation: **SN**

Values: *fraserno* specifies the frame serial number of the remote SVA subsystem. This is the same value that is used in establishing the PPRC pair between the primary and secondary devices.

Lists, ranges, and wildcards are not allowed.

Default value: **None.**

Example: **SN(007025)**

SOURCE

Required

This parameter and its subparameters define the source device to be snapped. You can specify only one of the VOLUME or UNIT subparameters with this parameter. SnapShot uses the CP ATTACH and CP DEFINE MDISK commands to obtain access to the source device.

Abbreviation: **SOU**

Values: See the UNIT, VOLUME, and FROM subparameters.

Default value: None.

Note: In no case can PAV Alias devices be used as the source of a volume snap.

TARGET

Required

This parameter and its subparameters define the volume onto which the selected source volume is to be snapped. You can specify only one of the VOLUME or UNIT subparameters with this parameter. SnapShot uses the CP ATTACH and CP DEFINE MDISK commands to obtain access to the target device.

Abbreviation: **TRG**

Values: See the UNIT, VOLUME, and FROM subparameters.

Default value: None.

Notes:

1. If you snap cylinder 0 of the source to cylinder 0 of the target, the target volume will have the same volser as the source volser.
2. In no case can PAV Alias devices be used as the source of a volume snap.

UNIT (device)

Optional subparameter of the SOURCE and TARGET parameters.

This subparameter identifies the source or target volume by unit address, as known to the host operating system.

Note: You can specify either UNIT or VOLUME, but not both, with each SOURCE and TARGET parameter. (You can use UNIT with one parameter and VOLUME with the other.)

Abbreviation: **UNIT**

Values: *device* specifies the hexadecimal unit address of the source or target device for the snap.

Decimal representation, lists, ranges, and wildcards are not accepted.

Default value: None.

Examples: **UNIT(14be)**
UNIT(X'200')

VOLUME (volser)

Optional subparameter of the SOURCE and TARGET parameters.

This subparameter identifies the source or target device by volume serial number.

Note: You can specify either VOLUME or UNIT, but not both, with each SOURCE and TARGET parameter. (You can use UNIT with one parameter and VOLUME with the other.)

Abbreviation: **VOL**

Values: *volser* specifies the volume serial number of the source or target device for the snap. The device must be online to the host attempting the snap operation.

Lists, ranges, and wildcards are not allowed.

Default value: None.

Examples:
```
VOL(BKUP44)
VOL(TEST01)
```

Examples of SNAP VOLUME

Example 1.

```
SNAP VOLUME (-
     SOURCE (VOL (VMRES))-
     TARGET (UNIT (FAA)) )
```

This subcommand snaps a volume using the SOURCE and TARGET parameters.

Example 2.

```
SNAP VOLUME (-
     SOURCE (VOL (CMS001))-
     TARGET (UNIT(FDA))-
     DATAMOVERNAME (MACRO(SIBDMDDR)) )
```

This subcommand snaps a volume to a target using the data mover.

Example 3.

```
SNAP VOLUME ( -
     SOURCE (VOL (SRC001) ) -
     TARGET(RFDID(7DF) SN(007025) ) -
     REPLACE(YES))
```

This subcommand performs a PPRC Remote SnapShot. The Source volume (SRC001) is a PPRC Primary volume in a PPRC pair. The associated PPRC Secondary volume is not explicitly referred to in the subcommand, but the Secondary volume is implied to be defined on the SVA subsystem with serial number 7025. Functional device 7DF also exists on SVA subsystem #7025. As the result of the PPRC Remote SnapShot, the Secondary volume will be snapped to functional device 7DF.

The REPLACE(YES) parameter is required for all PPRC Remote SnapShots and must be explicitly specified since the default is NO.

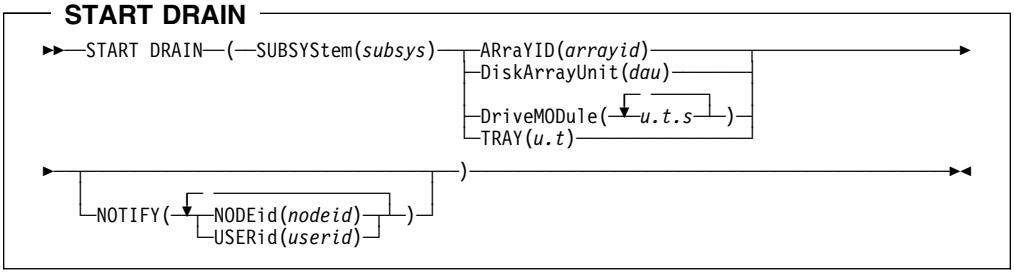
The COPYVOLID(YES) and DATAMOVER(NONE) parameters are defaults and must be defaulted to or explicitly specified for all PPRC Remote SnapShots, otherwise the PPRC Remote SnapShot is not performed.

START DRAIN Subcommand

*** *Subcommand of SIBADMIN***

The START DRAIN subcommand initiates a drain of one or more drive modules. You can specify the drive modules individually, by array, by tray, or by DAU. When the designated devices have been successfully drained (that is, all data has been moved), they are placed in the MAT partition for removal or reallocation as spares.

Note: You cannot drain the last drive module, last array, last tray, or last DAU.



Parameters

SUBSYSTEM (subsys)

Required

This parameter specifies the name of the SVA subsystem that is to perform the drain.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If the subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

Default value: None

Examples: **SUBSYSTEM(SUB1)**
SUBSYS(1SUBSYS)

ARRAYID (arrayid)

Conditional (This is one of a group of four parameters of which you must enter *one and only one*: ARYID, DAU, DMOD, or TRAY.)

This parameter specifies the array to be drained.

Abbreviation: **ARYID**

Values: *arrayid* (an integer from 0 to 7) is the array ID.

Default value: None

Example: **ARYID(0)**

DISKARRAYUNIT (dau)

Conditional (This is one of a group of four parameters of which you must enter *one and only one*: ARYID, DAU, DMOD, or TRAY.)

This parameter specifies the disk array unit (DAU) to be drained.

Note: If a Test partition has been defined, you cannot initiate a drain of a DAU; that is, you cannot use this parameter. (All drive modules to be drained must be in the same partition.)

Abbreviation: **DAU**

Values: *dau* is the disk array unit (a single digit from 0 to 3).

Default value: None

Example: **DAU(0)**

DRIVEMODULE (u.t.s)

Conditional (This is one of a group of four parameters of which you must enter *one and only one*: ARYID, DAU, DMOD, or TRAY.)

This parameter designates one or more individual drive modules to be drained.

When you specify a drain of individual drive modules, at least as many spares must be available as there are drives to be drained. If too few spares are available, the subcommand is rejected.

Abbreviation: **DMOD**

Values: *u.t.s* (3 digits separated by periods) identifies a specific drive module, where:

- *u* identifies the disk array unit (0 to 3)
- *t* identifies the tray (0 to 3)
- *s* identifies the slot (0 to 7)

You can specify lists but not ranges.

You cannot use wildcard characters.

Default value: None

Examples:
DMOD(1.3.2)
DMOD(0.0.1 0.0.5)

TRAY (u.t)

Conditional (This is one of a group of four parameters of which you must enter *one and only one*: ARYID, DAU, DMOD, or TRAY.)

This parameter specifies the tray to be drained.

Note: If a Test partition has been defined, you cannot initiate a drain of a tray; that is, you cannot use this parameter. (All drive modules to be drained must be in the same partition.)

Values: *u.t* (2 digits separated by a period) identifies the tray, where:

- *u* identifies the disk array unit (0 to 3)
- *t* identifies the tray (0 to 3)

Default value: None

Example: **TRAY(1.0)**

NOTIFY ({NODEID (nodeid) USERID (userid)})

Optional

This parameter's subparameters identify the node and/or the user to be notified when the drain is completed.

NODEID (nodeid)

Abbreviation: **NODE**

Values: *nodeid* is 1 to 8 alphanumeric characters.

Default value: Node ID from which drain is initiated

Example: **NODE(REMOTE1)**

USERID (userid)

Abbreviation: **USER**

Values: *userid* is 1 to 8 alphanumeric characters.

Default value: User ID of user who initiates drain

Example: **USER(JOHN)**

Examples of START DRAIN

Example 1.

```
START DRAIN (-
     SUBSYSTEM(SUBSYSA)-
     DMOD(0.1.0 0.1.3 0.1.4)-
     NOTIFY(USERID(JUDY)) )
```

This subcommand starts a drain of drive modules **0.1.0**, **0.1.3**, and **0.1.4** (unit **0**, tray **1**, slots **0**, **3**, and **4**) in SVA subsystem **SUBSYSA**. User ID **JUDY** will be notified when the drain is complete. At least 3 spare drives must be available (1 per drive to be drained) for the drain to begin.

Example 2.

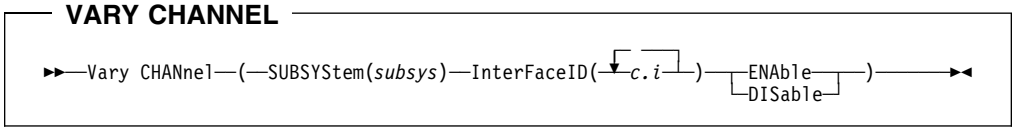
```
START DRAIN (-
     SUBSYSTEM(ICESUB1)-
     ARYID(3)-
     NOTIFY(NODEID(FOX) USERID(JOE)) )
```

This subcommand starts a drain of array **3** in SVA subsystem **ICESUB1**. Node ID **FOX** and user ID **JOE** will be notified when the drain is complete. All data in array **3** will be moved to other arrays in the same partition.

VARY CHANNEL Subcommand

* ***Subcommand of SIBADMIN***
* ***System Operator command***

The VARY CHANNEL subcommand enables or disables a parallel channel interface.



Parameters

SUBSYSTEM (subsys)

Required

This parameter specifies the name of the SVA subsystem to which the channel interface is attached.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If the subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

Default value: None

Examples:
```
SUBSYSTEM(SUB1)
SUBSYS(SUBSYS1)
SUBSYS(1SUBSYS)
```

INTERFACEID (c.i)

Required

This parameter specifies one or more (up to 32) parallel channel interfaces of the SVA subsystem.

Abbreviation: **IFID**

Values: *c.i* (2 alphanumeric characters separated by a period) specifies a channel interface, where:

- *c* identifies one of the two clusters (0 or 1) in the subsystem
- *i* is the interface ID (A through P) associated with a specific cluster

You can use ranges and lists, but not wildcard characters.

Default value: None

Examples:

INTERFACEID(0.A)	(channel A on cluster 0)
IFID(0.A:0.J)	(channels A to J on cluster 0)
IFID(0.A 0.C)	(channels A and C on cluster 0)

ENABLE | DISABLE

Required

This parameter specifies that the channel interface is to be either enabled or disabled immediately.

Abbreviation: **ENA** or **DIS**

Default value: None

Examples of VARY CHANNEL

Example 1.

```
VARY CHANNEL (-
     SUBSYSTEM(SUB1)-
     INTERFACEID(0.P)-
     ENABLE )
```

On SVA subsystem **SUB1**, this subcommand immediately enables channel interface **0.P**.

Example 2.

```
V CHAN (-
     SUBSYS('icesubA')-
     IFID(0.A 1.A)-
     DISABLE )
```

On SVA subsystem **icesubA**, this subcommand immediately disables channel interfaces **0.A** and **1.A**.

Example 3.

```
V CHAN (-
     SUBSYS(ICE1)-
     IFID(0.A:0.P)-
     ENA )
```

On SVA subsystem **ICE1**, this subcommand immediately enables channel interfaces **0.A** through **0.P**.

Example 4.

```
V CHAN (-
     SUBSYS(S1)-
     IFID(0.A:0.P 1.A:1.F)-
     DIS )
```

On SVA subsystem **S1**, this subcommand immediately disables channel interfaces **0.A** through **0.P** and **1.A** through **1.F**.

VARY DEVICE Subcommand

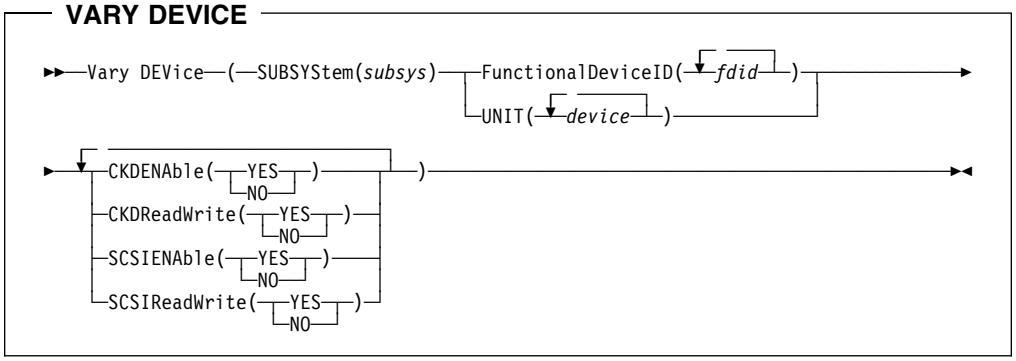
* ***Subcommand of SIBADMIN***
* ***System Operator command***

The VARY DEVICE subcommand enables or disables a functional device and/or enables or disables write protection for the device.

Notes:

1. You cannot change the SCSIENABLE or SCSIREADWRITE values for Power PPRC Bridge devices.
2. You cannot change any values for PAV Alias devices.

VARY DEVICE



Parameters

SUBSYSTEM (subsys)

Required

This parameter specifies the name of the SVA subsystem with which the functional device is associated.

Abbreviation: **SUBSYS**

Values: *subsys* is the SVA subsystem name.

Note: If the subsystem name contains lowercase characters and **SET CASE(UPPER)** is in effect, you must enclose the name in matching quotes.

Default value: None

Examples:
```
SUBSYSTEM(SUB1)
SUBSYS(SUBSYS1)
SUBSYS(1SUBSYS)
```

FUNCTIONALDEVICEID (fdid)

Conditional (To identify the device, you must enter either this parameter or the UNIT parameter—*not both*.)

This parameter specifies the devices their SVA functional device identifiers (FDIDs).

Abbreviation: **FDID**

Values: *fdid* is a functional device identifier: 1 to 3 hexadecimal digits or 1 to 4 decimal digits. See the table on page 1-3 for ranges of FDID values by subsystem type.

You can use ranges and lists, but not wildcard characters.

Default form: Hexadecimal (decimal values require the D prefix)

Examples:

FDID(20)	(decimal 32)
FDID(D'32')	(decimal 32)
FDID(21 22 2D)	(decimal 33, 34, and 45)
FDID(20:2E)	(decimal 32 through 46)

UNIT (device)

Conditional (To identify the device, you must enter either this parameter or the FDID parameter—*not both*. However, if the device is not defined to the host operating system in which SVAA is running, you must use FDID.)

This parameter specifies the devices as they are defined to the host in which SVAA is running.

Note: Device mapping must be on to use this parameter.

Values: *device* is a host device number: 1 to 4 hexadecimal digits.

Decimal representation (D prefix) is not accepted.

You can use ranges and lists, but not wildcard characters.

Default form: Hexadecimal

Examples:

UNIT(0234)
UNIT(234)
UNIT(X'0234')
UNIT(222:233)
UNIT(200 300)

CKDENABLE (YES | NO)

Conditional (This is one of a group of four parameters of which you must enter at least one: CKDENA, CKDRW, SCSIEN, and SCSIRW.)

This parameter enables or disables host access to the CKD functional device immediately.

Notes:

1. You ***must*** vary the device offline to all hosts before you disable the device (**CKDENA(NO)**).
2. You cannot alter this value for PAV Alias devices.

Abbreviation: **CKDENA**

Values: **YES** or **NO**

Default value: None

Example: **CKDENA(YES)**

CKDREADWRITE (YES | NO)

Conditional (This is one of a group of four parameters of which you must enter at least one: CKDENA, CKDRW, SCSIEN, and SCSIRW.)

Note: You cannot alter this value for PAV Alias devices.

This parameter specifies whether to allow write access to the CKD functional device. **YES** allows writes; **NO** allows no writes.

Abbreviation: **CKDRW**

Values: **YES** or **NO**

Default value: None

Example: **CKDRW(NO)**

SCSIENABLE (YES | NO)

Conditional (This is one of a group of four parameters of which you must enter at least one: CKDENA, CKDRW, SCSIEN, and SCSIRW.)

This parameter enables or disables host access to the SCSI functional device immediately.

Note: You cannot change the SCSIENABLE value for Power PPRC Bridge devices.

Abbreviation: **SCSIENA**

Values: **YES** or **NO**

Default value: None

Example: **SCSIENA(NO)**

SCSIREADWRITE (YES | NO)

Conditional (This is one of a group of four parameters of which you must enter at least one: CKDENA, CKDRW, SCSIEN, and SCSIRW.)

This parameter specifies whether to allow write access to the SCSI functional device. **YES** allows writes; **NO** allows no writes.

Note: You cannot change the SCSIREADWRITE value for Power PPRC Bridge devices.

Abbreviation: **SCSIRW**

Values: **YES** or **NO**

Default value: None

Example: **SCSIRW(YES)**

Examples of VARY DEVICE

Example 1.

```
VARY DEVICE (-
     SUBSYSTEM(SUB1)-
     UNIT(0234)-
     SCSIENA )
```

On SVA subsystem **SUB1**, this subcommand immediately enables the SCSI device defined to the host operating system as **0234**.

Example 2.

```
VARY DEVICE (-
     SUBSYS('icesubA')-
     FDID(22)-
     CKDRW(NO) )
```

On SVA subsystem **icesubA**, this subcommand immediately disables write access to the CKD functional device **22**.

Example 3.

```
V DEV (-
     SUBSYS(ICE1)-
     UNIT(234 345 456)-
     SCSIENA-
     SCSIRW(YES) )
```

On SVA subsystem **ICE1**, this subcommand immediately enables the SCSI devices defined to the host operating system as **234**, **345**, and **456** and enables write access to those devices.

Example 4.

```
V DEV (-
     SUBSYS(S2)-
     FDID(X'50' D'20' 25:28 2C)-
     CKDRW(NO) )
```

On SVA subsystem **S2**, this subcommand disables write access to the CKD functional devices **50**, **20** (decimal), **25** through **28**, and **2C**.

Chapter 10. SVAA VM Utilities

Chapter Summary

Overview

This chapter describes a set of standalone utilities which help an administrator manage the SVA in the VM/CMS environment. The utilities are: SIBFMTSS, SIBRUB, SIBSAMPX, SIBTRAP, SIBVMCUR, and SIBVMRVA.

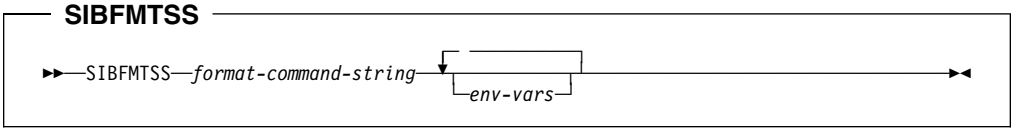
These utilities provide a variety of functions for SVA services and NCL management. Each of these utilities may be executed from the CMS command line or from a script such as a REXX EXEC. These utilities are not SVAA subcommands; that is, they do not require the SIBADMIN environment.

Online help for these utilities is available using the CMS HELP facility. The help files are available using a link to the SVAA RUN disk. For example, to obtain help for SIBVMRVA, enter:

```
HELP SIB SIBVMRVA
```

SIBFMTSS Utility

SIBFMTSS is a REXX EXEC that receives control when a CMS FORMAT command is requested. When invoked it is passed two parameters. The first parameter is the original CMS FORMAT command line. The second parameter is a string of values specified when the intercept was installed. (In the *SVAA for VM Installation, Customization, and Maintenance* guide, see the example in the step titled "Customizing the SYSPROF EXEC.")



Specifying SIBFMTSS Environment Variables

There are several environment variables that can be passed to SIBFMTSS either during trap installation of the intercept or on the CMS FORMAT command line. Environment variables are of the form *=envar=val* where *envar* is the name of the environment variable and *val* is the value to assign to the variable. Listed below are the environment variables that SIBFMTSS supports:

=EMSG=Y This option allows diagnostic messages to be displayed if unexpected situations occur. This option is recommended unless total FORMAT transparency is required.

=MINCYLS=nnn This option specifies that the SnapShot facility should only be used if the number of cylinders to format exceeds *nnn*. There is a minimal performance trade-off at low cylinder counts.

=SNAPSHOT=N This option prevents the SnapShot facility from being used and is a useful option during problem determination.

=STATS=Y This option displays performance statistics (CPU and I/O) at the completion of the format.

=TRACE=xx *xx* can be any valid REXX Trace value. "?r" is probably the most useful for troubleshooting problems with SIBFMTSS.

=*subsys* This option describes preformatted minidisk attributes (see below).

Specifying Preformatted Minidisks for SIBFMTSS

If the SVA subsystem is ***not*** Instant-Format capable, you will need to specify preformatted minidisks as environment variables. The variable name identifies the SVA subsystem, device type, and optionally, the CMS block size. The variable value identifies the the minidisk address and VM userid that owns the minidisk. For example, in the IFINST EXEC, a 3380 minidisk for the SVA subsystem FRED, was specified as "=FRED_3380=STKMAINT.8000."

The general form for these variables is *=xxx_yyy_z=uuu.vvv*, where *xxx* is the SVA subsystem name, *yyy* is the device type (3380 or 3390), and *z* is the optional CMS block size (512, 1024, 2048, or 4096). The value assigned to this variable, *uuu.vvv* identifies the owner of the preformatted minidisk, *uuu* for userid and *vvv* for the minidisk address.

SIBFMTSS looks for a specific block size environment variable first. If not defined, SIBFMTSS looks for a generic device type environment variable. If that variable is not defined, SIBFMTSS will satisfy the format request with the normal CMS FORMAT command.

For example, assume that you want all 3380 requests to use a specific preformatted minidisk and all 3390 requests to use a specific minidisk except for 1K block size requests. Assuming the SVA subsystem name is PROD001 and the minidisk owner is STKMAINT, you would specify the following environment variables:

```
=PROD001_3380=STKMAINT.8000
=PROD001_3390=STKMAINT.9000
=PROD001_3390_1024=STKMAINT.9001
```

Now assume that you have a specific preformatted minidisk for every 3380 block size request and only 4K 3390 requests will use Instant Format. The environment variables would be:

```
=PROD001_3380_512=STKMAINT.8005
=PROD001_3380_1024=STKMAINT.8001
=PROD001_3380_2048=STKMAINT.8002
=PROD001_3380_4096=STKMAINT.8004
=PROD001_3390_4096=STKMAINT.9004
```

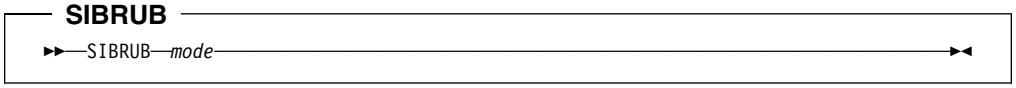
In this last example, potentially five functional volumes are being reserved for Instant Format. Most CMS applications do not care what value is being used for the minidisk block size. For that reason, why not use one block size for each device type?

SIBRUB Utility

The CMS minidisk rewrite utility, SIBRUB, enables a VM user to rewrite unallocated CMS disk blocks with highly compressible data. The minidisk must exist on an SVA volume, in write mode, before you invoke SIBRUB.

Note: SIBRUB works only on CMS minidisks—not on DOS, VSE, OS/390, VSAM, nor Linux minidisks.

SIBRUB



Parameter

mode

Required

This parameter specifies the CMS disk mode against which SIBRUB is to be run.

Values: 1 character in the set: A to Z, a to z

Default Value: None

Messages

SIBRUB does not generate any user messages. However, a CMS message may be displayed if the CMS file system encounters an abnormal error condition. Under certain conditions the CMS error message "DMSERD107S Disk *mode(vdev)* is full" may be displayed. This message does not indicate a severe error when displayed by this utility. SIBRUB attempts to completely fill the CMS disk with data and may occasionally overestimate the number of data blocks to be written.

Return Codes

0 Successful execution

4 CMS disk does not reside on an SVA volume

24 CMS disk mode is missing or invalid

36 CMS disk mode is not accessed in write mode (R/W)

104 Virtual storage capacity exceeded.

All other return codes represent error conditions that should not occur; they should be reported to StorageTek.

Example

```
SIBRUB Z
```

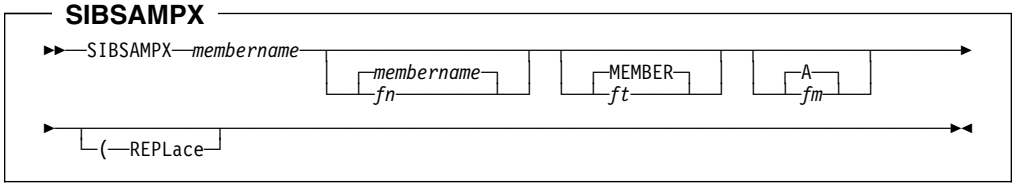
This invokes the rewrite utility against a CMS minidisk accessed as mode **Z**.

Usage Notes

1. This utility is intended to be run as part of an automated operation. For usage examples, refer to the SVAA sample REXX EXECs, SIBRUB01 and SIBRUB02.
2. SIBRUB has a minimum virtual storage requirement of 60K. It is recommended, however, that you define 16MB of virtual storage for optimum performance.

SIBSAMPX Utility

The SVAA SIBSAMP MACLIB contains sample EXECs and macros that you can copy and then modify for your own use. The SIBSAMP files are listed and described in Appendix A of the *SVAA for VM Installation, Customization, and Maintenance* guide. The SIBSAMPX utility copies files from SIBSAMP to a location you specify.



Parameters

membername
Required

This parameter specifies the name of a file in the SIBSAMP MACLIB.

fn
Optional

fn specifies the name of the file to be created. It defaults to the name of the SIBSAMP file.

ft
Optional

ft specifies the file type of the file to be created. It defaults to MEMBER.

fm
Optional

fm specifies the file mode. It defaults to A.

REPLace
Optional

REPLACE indicates the copy is to overwrite an existing file of the same name.

Example

```
SIBSAMPX SIBNCL05 SIBNCL05 EXEC A ( REPL
```

This example copies member **SIBNCL05** from SIBSAMP and writes it to **SIBNCL05 EXEC A**. If a file by this name already exists, The **REPL** option causes it to be overwritten.

SIBTRAP Utility

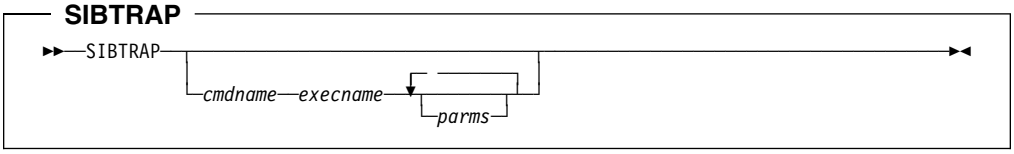
The SIBTRAP utility allows you to trap a command or function and have a REXX EXEC executed in its place. SIBTRAP operates by creating a nucleus extension with a specified name. When that name is received by CMS command processing, the nucleus extension is executed. The nucleus extension performs the following actions:

- Renames the nucleus extension to a unique name. This allows the original command to be executed from within the REXX EXEC.
- Executes the specified REXX EXEC as a function. The first parameter is the original command line. The second parameter is SIBTRAP options (described later).

- When the REXX EXEC completes, the nucleus extension is renamed back to the original name.

This utility is not an SVAA subcommand; that is, it does not require SIBADMIN. The utility is designed to be executed as a CMS command.

Note: To execute this utility, access to the SIBTRAP module is required.



If no parameters are specified, SIBTRAP displays all of the command traps that have been initialized from this utility. This is useful for identifying the traps in effect and the parameters being passed to the REXX EXECs.

Parameters

cmdname

Conditional. If you specify this parameter, you must also specify the execname parameter.

This parameter specifies the name you want CMS command processing to trap.

execname

Conditional. If you specify the cmdname parameter, you must also specify this parameter.

This parameter specifies the name of the REXX EXEC you want to receive control when *cmdname* is specified.

parms

Optional with the cmdname and execname parameters

One or more parameters to be passed to the *execname* REXX EXEC as the second function parameter.

Return Codes and Messages

SIBTRAP does not generate any user messages. However, a CMS message may be displayed if an abnormal CMS error condition is encountered.

The return codes listed below represent all of the informational and error conditions encountered by the SIBTRAP utility. All other return codes represent error conditions that should not occur; they should be reported to your StorageTek service representative.

0 Successful execution.

1 No trap routines exist.

2 Command name missing.

3 EXEC name missing.

4 Unsupported version of CMS.

5 Extended plist is unavailable.

1000+n CMS storage error, where n is the CMSSTOR return code.

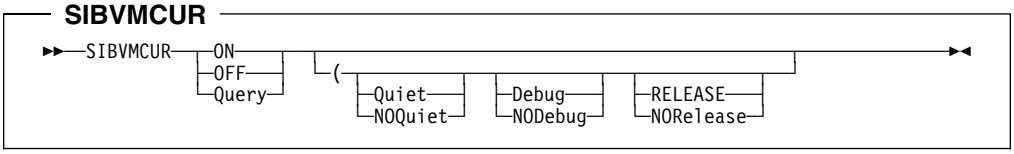
2000+n NUCEXT error, where n is the NUCEXT return code.

SIBVMCUR Utility

The VM cursor reset utility, SIBVMCUR, is a CMS nucleus extension program that provides NCL management by ensuring optimal disk allocation and releasing unused disk tracks when CMS disks reside on an SVA subsystem.

SIBVMCUR should be initiated in the SYSPROF EXEC and run in every CMS userid. (For details, see the step called "Customizing the SYSPROF EXEC" in the *SVAA for VM Installation, Customization, and Maintenance* guide.) SIBVMCUR traps the CMS ACCESS command. When SIBVMCUR detects an SVA minidisk, it sets a flag in a CMS control block that tells CMS to allocate data blocks from the beginning of the minidisk. This tends to cluster usage and prevents disk fragmentation. The RELEASE option of SIBVMCUR actually identifies unused data tracks and tells the SVA (V960 or 9500) to release data from the disk arrays.

Note: SIBNUCX LOADLIB must be available to execute SIBVMCUR.



Parameters

ON | OFF | Query
Required

This parameter specifies the action SIBVMCUR is to take.

ON specifies that SIBVMCUR is to load itself as a CMS nucleus extension and intercept CMS ACCESS commands. When an ACCESS command is intercepted for a disk that resides on an SVA subsystem, optimal disk allocation is obtained by setting an internal CMS disk flag, ADTLOWAL (use the lowest available block). If the RELEASE parameter is specified, SVA back-end storage is released for unallocated disk tracks.

OFF specifies that SIBVMCUR is to cease intercepting CMS ACCESS commands.

Query asks whether SIBVMCUR is currently intercepting CMS ACCESS commands.

Quiet | NOQuiet
Optional

The Quiet parameter specifies that normal response messages are to be suppressed. NOQuiet reverses this option. This option makes the operation of this utility transparent to a CMS end user.

Debug | NODebug
Optional

The Debug parameter specifies that diagnostic messages are requested. NODebug reverses this option. The messages are displayed at the terminal console. This option should be used only at the request of StorageTek support personnel.

RELEASE | NORelease
Optional

The RELEASE parameter specifies that unallocated CMS minidisk tracks should be rewritten with binary zeroes. NORelease reverses this option. This option uses advanced features in the SVA to release back-end space occupied by unused data. A CMS disk bit map identifies the data blocks in use (allocated). This option is valid only for CMS disks that are ACCESSed writable, reside on an SVA subsystem, and are ***not*** linked by any other VM users.

CAUTION:
The data identified as unused in the CMS disk bit maps is destroyed.

Return Codes

0	Normal execution
4	Cursor reset intercept is inactive
8	Parser error
16	Internal error has occurred

Examples

SIBVMCUR ON	activates the cursor reset intercept.
SIBVMCUR OFF	deactivates the cursor reset intercept.
SIBVMCUR QUERY	displays the current status of the cursor reset intercept.

Usage Notes

This utility is intended to be invoked as part of the system profile (SYSPROF EXEC) as:

```
SIBVMCUR ON (QUIET RELEASE
```

SIBVMRVA Utility

SIBVMRVA provides services that can help the VM user exploit advanced functions of the SVA. It can be executed either from the CMS REXX environment or as a command from the CMS Ready prompt. The advanced functions provide the following services:

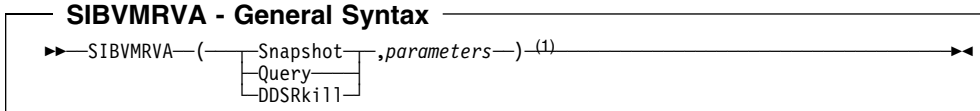
- Snapping a source minidisk to a target minidisk.
- Obtaining virtual device information.
- Releasing SVA back end storage, thus destroying data.

This utility is not an SVAA subcommand; that is, it does not require SIBADMIN. However, it does require SIBLLAPI (Low Level API) which is loaded as a nucleus extension. The utility is designed to be executed as a REXX function. In this case, the parameters are separated by commas, as shown in the syntax diagrams in this chapter.

However, the utility can also be executed as a CMS command. In this case, do not code the commas shown in the syntax diagrams—separate the parameters by blanks. Also, omit the parentheses shown in the syntax diagrams.

Note: To execute this utility, access to the SIBVMRVA module and the SVAA load library, SIBNUCX, is required. If an SVAA saved segment is defined, program execution uses the saved segment if possible.

SIBVMRVA - General Syntax



Note:
1 When requesting this service as a CMS command, separate parameters by spaces (instead of commas) and omit the parentheses.

This is the general syntax of the SIBVMRVA command to request services of the SVA. SIBVMRVA accepts a service request name and parameters that depend upon the specified service. SIBVMRVA returns a return code and service-dependent information. The service names are:

SNAPSHOT Snaps a source minidisk to a target minidisk.

QUERY Returns virtual device information.

DDSRKILL Destroys data by releasing SVA back-end storage associated with a virtual device.

These services and their associated parameters are described in the pages that follow.

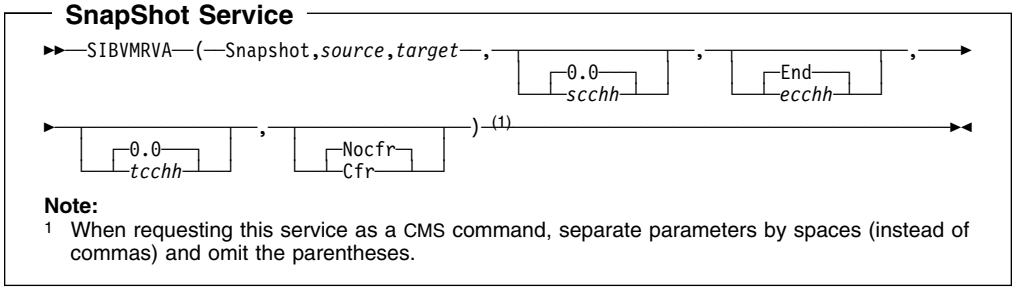
CCHH Format

If SIBVMRVA is executed as a CMS command, the return code is returned as a CMS return code and the service information is displayed at the terminal.

This utility contains service requests that allow DASD extent parameters to be specified in the form *cc[.hh]*, where *cc* is a decimal cylinder value and *hh* is an optional decimal track value. The period is used to separate the cylinder from the track. If the track value is omitted, it defaults to zero for beginning extents and to the maximum device track for ending extents. For example, if 123 is specified as

the ending extent for a 3380 device, it is interpreted as cylinder 123 track 14. Both cylinder and track values are specified in decimal numbers relative to zero.

SnapShot Service



This service invokes the SVA SnapShot facility to duplicate data very quickly.

Notes:

1. To perform a snap, the source and target must reside in the same SVA and must match in device type and SVA partition membership.
2. If the source and target are defined on the same functional device, the extents may not overlap.
3. Results are unpredictable if you snap data from one minidisk to another minidisk of unequal size—for example, from a source disk that contains fewer cylinders than the target disk.

Parameters

The parameters for the SnapShot Service are positional. They are described here in the order they are used in the command.

source

Required

This parameter specifies the virtual device address of the minidisk to be snapped.

Abbreviation: None

Values: *source* is a hexadecimal virtual device address.

Default value: None

target

Required

This parameter specifies the virtual device address of the read-write minidisk to receive the copy.

Abbreviation: None

Values: *target* is a hexadecimal virtual device address.

Default value: None

scchh

Optional

This parameter specifies the beginning source extent.

Abbreviation: None

Values: *scchh* is an extent value in *cc[.hh]* format (see "CCHH Format" on page 10-10).

Default value: Cylinder 0, track 0

Note: The source beginning and ending extent values determine the number of tracks to snap.

ecchh | End
Optional

This parameter specifies the ending source extent.

Abbreviation: **E**

Values: The last source cylinder and track.

ecchh is an extent value in *cc[.hh]* format (see "CCHH Format" on page 10-10).

End is the last cylinder and track defined for the virtual device.

Default value: **End**

tcchh
Optional

This parameter specifies the beginning target extent.

Abbreviation: None

Values: *tcchh* is an extent value in *cc[.hh]* format (see "CCHH Format" on page 10-10).

Default value: Cylinder 0, track 0

Cfr | Nocfr
Optional

This keyword parameter requests the use (or not) of SnapShot count field relocation.

Abbreviation: **N | C**

Values: **Cfr** specifies that the SVA is to create count fields for the target volume data records that are based on the real cylinder. This option is only valid if the target virtual device is defined to begin on real cylinder zero.

Nocfr specifies that count field relocation is not to be used. In this case, the source count fields are propagated to the target data records unchanged.

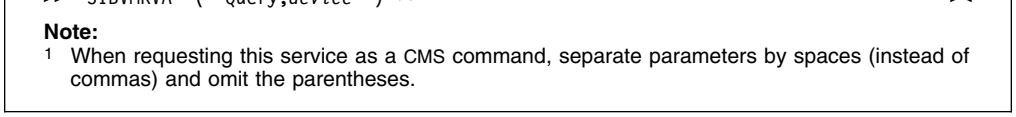
Default value: **NOCFR**

Notes:

1. Most VM minidisk applications require NOCFR. In either case, the count field for record zero (R0) always reflects the real cylinder for the device.
2. The SVA SnapShot facility has a restriction when combining tracks created with CFR and NOCFR count fields. A source CFR created count field cannot be snapped to a NOCFR target.

Device Query

Device Query Service



Note:
1 When requesting this service as a CMS command, separate parameters by spaces (instead of commas) and omit the parentheses.

This SIBVMRVA service invokes an SVA Device Query service to obtain information about a functional device. Both virtual device and SVA functional device information are returned.

device is the only parameter for the Device Query service.

device

Required

This parameter specifies the virtual device address about which you are inquiring.

Abbreviation: None

Values: *device* is a hexadecimal virtual device address.

Default value: None

Examples: **SIBVMRVA ('Q','241')** (as a REXX function)

SIBVMRVA Q 241 (as a CMS command)

Values Returned

Up to 20 values are returned by this service, depending on the return code.

Code Explanation

0 The inquiry was about a virtual device that resides on an SVA subsystem. In this case, the service returns the values *v1 ... v20*, as follows:

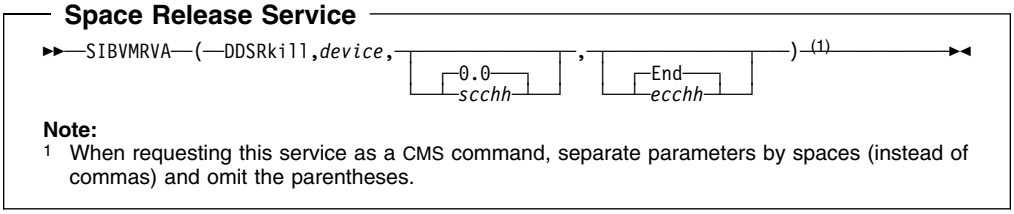
Value	Meaning
v1	Return code from the Query service.
v2	Device type (e.g., 3380, 3390).
v3	Virtual device read-write indicator: **0** Read-only. **1** Read-write.
v4	Number of cylinders defined for the virtual device.
v5	Number of tracks per cylinder.
v6	Reserved for future use.
v7	SVA functional device ID in hexadecimal.
v8	Real cylinder location of the virtual device on the functional volume.
v9	SVA frame serial number.
v10	SVA ECAM packet revision level.
v11	SVA ECAM privileged indicator: **0** Not privileged. **1** Privileged.
v12	Number of cylinders defined for the SVA functional volume.
v13	Data track size in bytes.
v14	SVA partition membership: **3** Test partition. **4** Production partition.
v15	Reserved for future use.
v16	Reserved for future use.
v17	Reserved for future use.

v18 Virtual device status bytes.
v19 SVA subsystem name.
v20 SVA feature bytes.

1 The inquiry was about a DASD but not an SVA subsystem. The service returns the first six of the values described above.

n For return codes other than 0 or 1, the returned values identify the reason for the failure.

Space Release Service



This service invokes the SVA DDSR facility to release disk array space associated with a virtual device.

Note: The Space Release Service destroys access to data. When release is complete, the data is gone and unavailable to any host. **Use this service with extreme care.**

The parameters for the Space Release Service are positional. They are described here in the order they are used in the command.

device
Required

This parameter specifies the hexadecimal virtual device address of the read-write minidisk to have space released.

scchh
Optional

This parameter specifies the beginning device extent.

Abbreviation: None.

Values: *scchh* is an extent value in *cc[.hh]* format (see “CCHH Format” on page 10-10).

Default value: Cylinder 0, track 0

ecchh | End
Optional

This parameter specifies the ending device extent.

Abbreviation: E

Values: *ecchh* is an extent value in *cc[.hh]* format (see “CCHH Format” on page 10-10).

End specifies the last cylinder and track defined for the virtual device.

Default value: END

Return Codes and Messages

SIBVMRVA does not generate any user messages when invoked as a REXX function. However, a CMS message may be displayed if a CMS error condition is encountered.

The return codes listed below represent all of the informational and error conditions encountered by the SIBVMRVA utility. All other return codes represent error conditions that should not occur; they should be reported to your StorageTek service representative.

0 Successful execution

1 Non-SVA device specified.

10 Invalid service request.

11 Invalid virtual device.

12 Invalid keyword value.

13 Invalid cylinder value.

14 Invalid volume label.

15 Invalid blksize value.

16 Target too big for the source.

17 DASD extents are invalid.

18 DASD extents exceed the size of the virtual device.

19 Beginning extent GT ending extent.

20 Invalid keysize value.

21 Invalid cylinder offset.

100 Non-DASD device.

101 Virtual device does not exist.

102 SnapShot not supported on SVA.

103 CP DIAGNOSE code 0A8 error.

104 ECAM message error.

105 SnapShot completion timeout.

106 SnapShot completion status error.

107 Source count field previously snapped with Count Field Relocation (CFR).

108 Virtual device accessed read-only.

109 SVA subsystem name mismatch.

110 Device type mismatch.

111 SVA subsystem partition mismatch.

112 CMS VOL1 record validation error.

113 Preformatted disk cylinders not equal to one.

114 Preformatted disk maximum cylinders less than the value requested to format.

115 CFR requested but target device is not defined on real cylinder zero.

116 Source and target extents overlap.

117 SnapShot Feature not enabled.

118 Microcode level does not support a read-only source.

119 SnapShot token unavailable.

120 Instant Format not supported.

121 Key or data length not supported.

122 SVA is too busy to communicate.

123 Generic LLAPI error.

124 Device is part of a PPRC pair.

125 Device is PPRC duplex pending.

999 Unsupported version of CMS.

1000+n CMS storage error, where n is the CMSSTOR return code.

2000+n CMS NUCXLOAD error, where n is the NUCXLOAD return code.

Examples

Example 1. Invoking the Query service

```
Parse Value SIBVMRVA('Q','190') ,
With rc msg 1 . . . cyls .
If rc < 2 Then Say '190 minidisk has' cyls 'cylinders.'
          Else Say 'SIBVMRVA error,' msg'.'
```

This example invokes the SIBVMRVA Query service against virtual device 190 and displays the number of cylinders defined for the 190 virtual device.

Example 2. Invoking the SnapShot service to copy a minidisk

```
Parse Value SIBVMRVA('Snap','191','291') ,
With rc msg
If rc = 0 Then Say 'The 191 mdisk has been snapped to 291'
          Else Say 'SIBVMRVA error,' msg'.'
```

This example invokes the SIBVMRVA SnapShot service to make an instant copy of the 191 minidisk onto the 291 minidisk.

Example 3. Invoking the SnapShot service to copy 3 tracks

```
Parse Value SIBVMRVA('S','220','343','0.7','0.9','2.1','CFR') ,
With rc msg
If rc = 0 Then Say '3 tracks snapped from 220 to 343'
          Else Say 'SIBVMRVA error,' msg'.'
```

This example invokes the SIBVMRVA SnapShot service to copy 3 tracks from virtual device 220 cylinder 0 track 7 to virtual device 343 cylinder 2 track 1 with count fields relocated.

Example 4. Invoking the SnapShot Service from the Ready prompt

```
SIBVMRVA S 220 343 0.7 0.9 2.1 CFR
```

This example has the same effect as Example 3.

Appendix A. Drive Module Status

Table A-1 lists and describes the statuses that a drive module can acquire. Status is indicated by a two-character code: the first character identifies the partition with which the drive is associated; the second character shows the current state of the drive. Status codes are displayed either as two characters or as two characters separated by a period. For example, the status of a drive module associated with the Production partition in the active state is “PA” or “P.A” .

Table A-1 (Page 1 of 2). *Drive module status descriptions*

Drive Module Status	Status Code	Description
MAT partition		
MAT: Active	M.A (MA)	Drive module is active and available for allocation as a spare.
MAT: Fenced	M.F (MF)	Drive module is fenced for diagnostics for one of the following reasons: • New drive module pre-acceptance test (capacity upgrade) • Guided FRU replacement (drive module removal)
Production partition		
Production: Active	P.A (PA)	Drive module is a member of an array that is associated with the Production partition.
Production: Copy (receiving drain data)	P.C (PC)	Drive module is receiving data from the drain of a single drive module in the Production partition.
Production: Draining	P.D (PD)	Drive module is being drained.
Production: Initialize array	P.I (PI)	Drive module is part of an array initialization process.
Production: Pending drain	P.P (PP)	Drive module is waiting to be drained. The drain cannot begin for one of the following reasons: • A drive module reconstruction is in progress • Another drive in the array is being drained • The number of available spares is inadequate (this can occur if the number of spares was reduced after the drain request was accepted)
Production: Reconstruction	P.R (PR)	Drive module is being used to reconstruct data for a Production partition drive module that failed.
Spares partition		
Spare: Active	S.A (SA)	Drive module is available for forming arrays, for data reconstruction, or for receiving data from a drain of a single drive module.
Spare: Fenced	S.F (SF)	Drive module is fenced for a periodic drive test.
Spare: Pending drain	S.P (SP)	Drive module is waiting to be drained pending completion of a periodic drive test.

Drive Module Status

Table A-1 (Page 2 of 2). *Drive module status descriptions*

Drive Module Status	Status Code	Description
Test partition		
Test: Active	T.A (TA)	Drive module is a member of an array that is associated with the Test partition.
Test: Copy (receiving drain data)	T.C (TC)	Drive module is receiving data from the drain of a single drive module in the Test partition.
Test: Draining	T.D (TD)	Drive module is being drained.
Test: Initialize array	T.I (TI)	Drive module is part of an array initialization process.
Test: Pending drain	T.P (TP)	Drive module is waiting to be drained. The drain cannot begin for one of the following reasons: • A drive module reconstruction is in progress • Another drive in the array is being drained • The number of available spares is inadequate (this can occur if the number of spares was reduced after the drain request was accepted)
Test: Reconstruction	T.R (TR)	Drive module is being used to reconstruct data for a Test partition drive module that failed.
Unavailable partition		
Unavailable: Broken	U.B (UB)	Drive module in slot is broken.
Unavailable: No active drive module	U.N (UN)	No active drive module is sensed in slot or slot has not been installed.

Glossary

This glossary is included in each book in the Shared Virtual Array Administrator library. All of the terms are associated with SVAA, but not all are used in this specific document.

A

Alias. A pseudo-device used by the operating system to support an additional I/O path to a Base device. Each Alias device supports one additional I/O to a Base. See also: Base and Parallel Access Volume.

array. A group of storage devices that are used collectively to achieve data redundancy and/or improved performance. In the SVA, an array consists of either 7 or 15 drive modules. See also: dual-redundancy array.

array cylinder. The collection of all physical cylinders in a dual-redundancy array that have the same physical cylinder address (CC). The SVA allocates back-end space in units of array cylinders. There are two types of array cylinders: free and allocated.

array device. The disk devices that are logically grouped together when a FORM ARRAY command is issued at the local operator panel or from SVAA.

array track. The collection of all physical tracks in a dual-redundancy array that have the same physical track address (CC, HH).

B

back-end storage. The data storage portion of a storage subsystem. In the SVA, the disk arrays.

Base. A real device that supports additional I/O paths to itself in the form of Alias devices. Each Alias device supports one additional I/O to a Base. Multiple Alias devices can be associated with a single Base. See also: Alias and Parallel Access Volume.

base functional device ID (BFDID). The functional device identifier that maps to or from the lowest (base) interface address on a given channel.

C

cache. Solid state, random access memory that is located in a controller. The cache retains frequently used data for faster access by the channel. In the SVA, all data access is through cache.

cache fast write (CFW). A form of fast write in which data is written directly to cache storage without using nonvolatile storage and is available for later destaging.

Capacity on Demand (COD). A feature that allows SVA customers to exceed their purchased physical capacity (PCAP) limit by up to 860GB of additional temporary effective capacity to prevent writes from being blocked during temporary and sometimes critical usage periods.

channel end. The indication from the channel that it has completed an operation.

channel interface. The Disk Array Controller circuitry that attaches to the host channels.

cluster. See storage cluster.

collected free space %. The percentage of array cylinders that are free array cylinders (collected and completely free of user data).

compaction. The SVA process that eliminates inter-record gaps normally associated with CKD DASD. Compaction reduces the amount of wasted disk array space, thus reducing the net capacity load on the subsystem.

compression. The SVA process that reduces the size of data records by translating them to a different encoding scheme that requires fewer bytes of real storage.

controller. See Disk Array Controller.

count-key-data (CKD). A recording format that writes variable-length records. Each record consists of 1) a count field, which specifies the length of the (optional) key field and data field of the record, 2) the (optional) key field, and 3) a data field. The first record on each track contains a fourth field, home address.

current data. User data, stored in a disk array, that has valid pointers from internal SVA mapping tables.

D

DASD fast write (DFW). A form of fast write to cache in which data is written concurrently to cache and nonvolatile storage (NVS) and is subsequently scheduled for destaging to the disk arrays. Both copies are retained in the SVA Disk Array Controller until the data is completely written to the disk arrays.

Data Bridge. A pair of devices used by Power PPRC to transmit all tracks on all primary devices from the primary subsystem to the secondary subsystem. These devices are not used to store customer data.

Data Collection Virtual Machine. The disconnected service machine that periodically requests SVA performance data.

dedicated connection. In an Enterprise Systems Connection Director (ESCD), a connection between two ports that is not affected by information contained in link frames. This connection restricts these ports from communicating with any other port. The two ports have a dedicated connection that appears as one continuous link.

destage. The nonsynchronous write of new or updated data from the cache storage or nonvolatile storage to the Disk Array Units.

device. See (1) drive module and (2) functional device.

device end. An indication from an I/O device that it has ended an operation.

device reconstruction. The SVA automatic background function of recreating and rewriting all of the data that was stored on a failed device to a spare device using the functional track recovery process.

direct access storage device (DASD). A storage device in which the medium is always available to the read/write head without having to be mounted by an external agent.

disk array. The SVA's logical grouping of drive modules. See also: dual-redundancy disk array.

disk array capacity. The formatted physical capacity of a disk array excluding redundancy data.

Disk Array Controller. The SVA control unit that provides the interface intelligence between the host(s) and the back-end storage.

Disk Array Unit (DAU). A single physical frame containing drive modules that comprise the disk array storage in an SVA subsystem.

domain. See SCSI domain.

drain. The SVA process that gradually moves data stored on a device or a disk array to other devices. Drain operations allow for the nondisruptive deinstallation of a device or a Disk Array Unit.

drive module. A disk storage device consisting of the access arms and heads, disk surfaces, and the supporting electronics required to locate, write, and read data. Each drive module is physically packaged as a single field-replaceable unit (FRU) within the SVA.

drive reconstruction. See device reconstruction.

dual-redundancy disk array. A disk array that allows for real-time automatic recovery of data from up to two failed devices within the array.

In the V2X and V960 SVAs, a dual-redundancy disk array consists of 15 (13+2) drive modules. The array has a capacity equivalent to 13 drives of user data and 2 drives of redundancy data. (In the SVA, redundancy data is distributed among all 15 drives).

In the 9500 and earlier SVAs, arrays of 7 (5+2) drive modules can also be formed.

Dynamic Configuration. An SVA feature that allows the channel interfaces and up to 4096 functional volumes to be defined and/or altered. The functional configuration of an SVA subsystem can be determined by user requirements rather than available drive modules.

E

ECAM device. A functional device over which SVAA-based communication between the SVA Disk Array Controller and the host CPU(s) takes place.

ESCON channel. A channel that uses ESCON cables to transmit data between the host and the Disk Array Controller.

Extended Control and Monitoring (ECAM). The communications protocol that permits communication between SVAA and the SVA.

extent. A range of disk addresses expressed as a cylinder head range (CCHH) for a CKD device, or a logical block address (LBA) for a SCSI device.

F

fast write. A write operation that does not require immediate synchronous transfer of data to a DASD device, thus reducing the time an application must wait for channel end and device end for an I/O operation.

fault symptom code (FSC). An error code, generated by a control unit or subsystem, that points to the area or FRU most likely causing a problem.

fault tolerance. The capability of a subsystem to continue operating without interruption and/or intervention despite a failure within the subsystem (e.g., hardware, power, cooling). Fault tolerance is generally measured in relation to inherent reliability, availability, serviceability, and recoverability for the product.

FDID map. See functional device identifier mapping.

fence. The automatic or manual separation of a logical path or physical component from the remaining operating portion of the subsystem. The fencing process provides for continuous operation of the

subsystem and allows for deferred nondisruptive servicing of field-replaceable units (FRUs) via hot-plugging.

A logical barrier on a node or path that prevents the use of that node or path.

FICON channel. A channel that uses fiber connections to transmit data between the host and the Disk Array Controller.

field-replaceable unit (FRU). The smallest self-contained component that can be individually replaced during a service or repair action.

fixed block architecture (FBA). (Contrast with CKD) A recording format in which every track of the device is formatted with a fixed number of fixed-length records (generally called sectors), each of which contains an identifier (ID) field and a data field.

flexvolume. A 3380 or 3390 CKD volume defined with less than the maximum number of cylinders. The range of cylinders allowed depends on the device type.

free array cylinder. An array cylinder that contains no current or non-current user data.

free space collection (FSC). The automatic SVA background task that relocates data from fragmented array cylinders in order to collect free space into empty array cylinders. Free space collection maximizes the efficiency of array cylinder writes.

free space collection load. The average percentage of array cylinder space that must be relocated in order to create empty array cylinders in the SVA.

front end. The portion of the SVA Disk Array Controller data path that passes data between the channels and the cache.

functional. The term used to describe the SVA interface as viewed by the host, application, and users. This interface appears as a 3990-3 subsystem interface.

functional/allocated. The user-allocated portion of a functional volume's space; that is, minidisks as defined in the VM directory.

functional capacity. The data storage capacity that the host, application, and users view. Used in reference to the space available for storing data in (1) a single functional device, or (2) all defined functional devices in an SVA subsystem.

functional device. The volume image that the host operating system receives when the “Read Device Characteristics” CCW is issued.

functional device identifier (FDID). The identifier for a functional device as it is known to the SVA. FDIDs range from 0 to FFF (hexadecimal) or from 0 to 4095 (decimal).

functional free space. The unallocated/unused portion of a functional volume's space, as defined in the VM directory.

functional track. The equivalent of a 3380- or 3390-DASD track. A functional track record is stored on contiguous sectors in an allocated array cylinder.

functional track directory (FTD). The SVA internal mapping table that contains one entry for each functional track associated with the functional volumes currently defined by the user.

functional track recovery (FTR). The automatic SVA process of recovering data from a physical track that is unreadable due to a media defect or a failed device. The SVA accomplishes functional track recovery by reading and processing the user data and redundancy data at corresponding physical track locations on the remaining devices in the array.

functional volume. See functional device.

G

global spares. See spare devices.

L

large volume. A 3390-9 CKD volume defined with 32760 cylinders.

link address. An address assigned during initialization that identifies a channel or control unit so that the channel or control unit can send and receive frames, and perform I/O operations. See logical paths.

LLAPI. An ECAM device driver available to vendors which provides the ability to query an SVA subsystem and its devices as well as the ability to manipulate functional tracks.

logical array. A grouping of devices into an array. The grouping of devices does not depend on their physical location.

logical partition. The subset of a processor unit that is allocated to support the operation of a systems control program.

logical paths. The relationship between a channel and a control unit that designates the physical path to be used for device-level communication between the channel and the control unit. This relationship is defined within the channel and control unit by a link address assigned to the control unit and a link address assigned to the channel.

M

MAINTSTK virtual machine. The virtual machine from which all maintenance for all SVA VM software products is performed.

MAT partition. The SVA partition consisting of drive modules that are not yet available for storing user data. Drive modules are automatically members of the MAT partition when they are first physically inserted in the SVA or when they have been drained of data.

Media Acceptance Test partition. See MAT partition.

N

net capacity load (NCL). This number is two KB times the number of physical sectors actually used to store user data, not including redundancy data. NCL is a percentage of the total number of sectors that are storing user data and is based on physical capacity used.

nonquiesced snap. A snap taken when the system is in full read-write access mode.

nonvolatile storage (NVS). The redundant solid state memory in the Disk Array Controller that remains active when ac power is removed. NVS protects any data that has not been written to the disk arrays.

P

Parallel Access Volume. A combination of a real device (Base) and one or more pseudo-devices (Aliases) that together support multiple concurrent I/Os to enhance performance.

parallel channel. A channel that uses bus-and-tag cables to transmit data between the host and the Disk Array Controller.

partition. The logical separation of devices, arrays, or groups of arrays to allow different modes of operation. The SVA supports a MAT partition, a Test partition, a Production partition, a Spares partition, and an Unavailable partition.

Note: The Test partition is not available in the V2X, V960, or 9500 SVA.

PAV. See Parallel Access Volume.

physical capacity. The physical space contained in (1) a single drive module, (2) a partition, or (3) an SVA subsystem.

physical device. See drive module.

privileged ECAM device. Privileged ECAM devices are the only devices that SVAA can use to send messages to the subsystem to request a change in the SVA's state. Such messages include those that alter the subsystem configuration or start a drain.

At least one privileged ECAM device must be defined in each SVA; all functional volumes in an SVA subsystem can be defined as privileged ECAM devices.

Production partition. The SVA partition consisting of drive modules assigned to production arrays for storing user data.

PROFSIBA macro. The profile executed when the SVAA SIBADMIN program is started.

PROFSIBS macro. The profile executed when the SVAA Subsystem Reporting Program is started.

Q

quiesce. To end a process by allowing operations to complete normally.

quiesced snap. A snap taken while the system is quiesced; all buffered transactions are flushed to disk storage.

R

read hit. The situation in which data requested by the read operation is located in cache.

read miss. The situation in which data requested by the read operation is not located in cache.

reconstruction. See device reconstruction

redundancy group. A logical grouping of devices that are protected from data loss due to a device failure by the use of redundancy (parity) data that is stored across the devices. Arrays in the SVA are redundancy groups that protect data against two simultaneous device failures. See also: dual-redundancy disk array.

Reporter. The SVAA subsystem reporting program—the SVAA component that collects subsystem performance data and produces reports based on that data, as well as on space utilization.

S

SCSI channel. See SCSI I/O interface.

SCSI domain. An SVA addressing scheme, prefixed to SCSI target and LUN addresses, that extends the number of addressable volumes from SCSI-attached host systems.

serial channel. A channel that uses fiber-optic (ESCON) cables to transmit data between the host and the Disk Array Controller. See also: ESCON channel.

Service Information Message (SIM). A message generated by the host processor upon receipt of sense information from the SVA that contains notification of a need for repair or customer action, or status information.

Shared Virtual Array (SVA). StorageTek's online, random access disk array storage subsystem composed of a Disk Array Controller and 16 to 64 disk drive modules.

Shared Virtual Array Administrator (SVAA). StorageTek's host software product that enables implementation of the extended storage management facilities of the SVA, and offers additional functions including SnapShot, NCL management, and reporting capabilities.

SIBADMIN module. The module used to invoke SVAA in command mode.

SIBLLAPI. An ECAM device driver available to vendors which provides the ability to query an SVA subsystem and its devices as well as the ability to manipulate functional tracks.

SIBMENU exec. The module used to invoke SVAA in menu mode.

SIBSRP module. The SVAA module for the subsystem reporting program.

SIBSRPAC exit. The user exit that authorizes a user to communicate with the SRP service machine via IUCV.

SIM alert. An operator console message that alerts the operator that an action requiring attention has occurred.

slot. The physical location of an SVA subsystem drive module.

snap. (noun) A duplication of a source volume or minidisk with SnapShot (see SnapShot). A snap is also the result of a successful SnapShot operation (not the use of a data mover). Synonymous with SnapShot. Contrast with *data mover copy*.

snap. (verb) To duplicate a functional volume or minidisk with SnapShot.

SnapShot. StorageTek's high-speed data-duplication facility, available only with the SVA and packaged with SVAA. SnapShot achieves great time-savings in duplicating volumes or minidisks because it only creates a second set of pointers to the data. No additional physical disk space is used in the process.

source. The minidisk or volume from which data is snapped.

spare devices. SVA drive modules that are physically installed but not logically associated with an array. Spare devices are used by the SVA to form new arrays or to automatically reconstruct and logically replace failed devices.

spares. See spare devices.

Spares partition. The SVA partition consisting of all of the spare devices in the subsystem. See spare devices.

SSID. See subsystem identifier (SSID)

Status Bridge. A pair of devices used by Power PPRC to transmit acknowledgements that the data was received at the other end. These devices are not used to store customer data.

storage cluster. A power and service region that processes channel commands and controls the data storage devices. The SVA contains two storage clusters, each of which contains interfaces for up to 16 channels.

subsystem free space. Storage space in the disk arrays that does not contain user data.

subsystem identifier (SSID). The identifier for a 3990 controller emulated within the SVA. From one to sixteen SSIDs (logical 3990s) can be defined in each subsystem. Within an installation, each logical 3990 is defined by a unique four-digit (hexadecimal) SSID.

subsystem reporting program (SRP). The SVAA component that collects subsystem performance data and produces reports based on that data, as well as on space utilization. See also: Reporter.

SVAA profile facility. When invoked, this facility allows the user to specify commands for an SVAA session.

T

target. The minidisk or volume to which data is snapped.

Test partition. The SVA partition consisting of drive modules assigned to a test array and containing test data. The Test partition allows user-controlled, host-driven, testing of arrays, as though they were production arrays.

Note: The Test partition is not available in the V2X, V960, or 9500 SVA.

tray. The physical packaging of eight drive modules within the disk array area of the SVA.

U

Unavailable partition. The SVA partition consisting of drive modules that are not available for use in an array. Drive modules that are not installed or have failed are in this partition.

unit. See Disk Array Unit.

V

virtual cylinder. An operating system unit of measure available to allow a system administrator to view and manage the total amount of functional cylinders available in an SVA subsystem.

virtual device identifier (VDID). Another term for FDID. See functional device identifier (FDID).

volatile memory. See cache volatile memory.

volume. See functional volume.

volume serial number. A six-character alphanumeric name that identifies a disk volume to the host operating system.

W

write hit. The situation in which data to be updated by a write operation is located in cache.

write miss. The situation in which data to be updated by a write operation is not located in cache.

Abbreviations and Acronyms

API	application programming interface
BFDID	base functional device ID
CCHH	cylinder-head address (CC is the two-byte cylinder number, HH is the two-byte head number
CCW	channel command word
CFW	cache fast write
CKD	count-key-data
CLI	command line interface
CMS	Conversational Monitor System
COD	Capacity on Demand
CSI	consolidated software inventory
DASD	direct access storage device
DAU	Disk Array Unit
DFW	DASD fast write
DOP	Detached Operator Panel
DSF	Data Support Facilities
DTL	domain-target-LUN
ECAM	Extended Control and Monitoring
ESA	Enterprise Systems Architecture
ESCON	Enterprise Systems CONnection
ESDI	enhanced small device interface
FDID	functional device identifier
FICON	FIbre CONnection
FMID	function modification identifier
FRU	field-replaceable unit
FSC	fault symptom code, or free space collection
FTD	functional track directory
FTR	functional track recovery
GB	gigabyte
HCD	hardware configuration definition
ICKDSF	ICK Data Support Facilities
IDID	interface device identifier
IML	initial microprogram/microcode load
IOCP	I/O configuration program
IPL	initial program load
ISPF	Interactive System Productivity Facility
I/O	input/output
LBA	logical block address
LOP	Local Operator Panel
LUN	logical unit number
MAT	Media Acceptance Test
MB	megabyte
MIH	missing interrupt handler
MVS	Multiple Virtual Storage
NCL	net capacity load
NVS	nonvolatile storage
PAV	Parallel Access Volume
PCAP	physical capacity
PPRC	peer-to-peer remote copy
PTF	program temporary fix
RACF	Resource Access Control Facility
RAID	redundant array of inexpensive disks
REXX	Restructured Extended Executor
RFA	record format assist
SAF	Security Access Facility
SCP	system control program
SCSI	small computer system interface
SIM	service information message
SMF	system management facility
SRP	Subsystem Reporting Program
SSID	subsystem identifier
SVA	Shared Virtual Array
SVAA	Shared Virtual Array Administrator
VCU	virtual control unit
VDID	virtual device identifier
VM	Virtual Machine
VM/ESA	Virtual Machine/Enterprise Systems Architecture
volser	volume serial number

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Reader's Comment Form

Product Name: Shared Virtual Array Administrator for VM
Manual Name: Configuration and Administration

Software Level: Version 3.1
Document Number: 313462909

Please check or fill in the items, adding explanations or comments in the spaces provided.

Which of the following terms best describes your job?

_ Field Engineer	_ Manager	_ Programmer	_ Systems Analyst
_ Engineer	_ Mathematician	_ Sales Representative	_ Systems Engineer
_ Instructor	_ Operator	_ Student/Trainee	_ Other (explain below)

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Did you find the material easy to read and understand?	_ Yes	_ No	(explain below)
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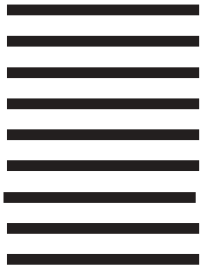

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