StorHouse®

System Operator's Guide

StorHouse Release 5.6

Publication Number
900008 Rev. AB

August 25, 2004

FileTek

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Table 2-1:

Welcome

Welcome to the *StorHouse System Operator's Guide*. This book describes how to operate and maintain your StorHouse® system.

Any specifications presented in herein are subject to change without notice. For the most current information about StorHouse hardware, check with your FileTek sales representative.

What is StorHouse?

StorHouse is FileTek's integrated data management system for storing and accessing gigabytes to petabytes of relational and non-relational enterprise data. StorHouse technology combines industry-leading storage devices and Open System processors with specialized storage management and relational database management system (RDBMS) software components.

Features include:

- Unlimited scalability
- Automatic system-managed storage
- Direct SQL access to data across a diversified storage hierarchy (including tape)
- Built-in data availability and assurance
- 24 by 7 customer support

FileTek customers typically use StorHouse in support of long-term, fixed content records management and retention applications. Systems are often deployed to ensure compliance with regulatory requirements such as those found in the financial and telecommunications market spaces. Records include e-mail messages, customer statements, stock transactions, and telephone call detail information.

The following sections describe the major StorHouse software components.

StorHouse/SM

StorHouse/SM, the StorHouse storage management component, controls a hierarchy of storage devices including cache, redundant array of independent disk (RAID), low-cost disk, fixed content object-based disk, erasable and write-once-read-many (WORM) optical disk jukeboxes, and high-capacity and high-performance erasable and WORM tape in automated libraries. StorHouse/SM is also responsible for automating critical system management tasks, like data migration, backup, and recovery. StorHouse/SM comes standard with all StorHouse systems. StorHouse/SM runs on Sun™ Solaris™ and Hewlett-Packard HP-UX platforms.

StorHouse/RM

StorHouse/RM, the StorHouse RDBMS component, works in conjunction with StorHouse/SM to specifically administer the storage, access, and movement of relational data. StorHouse/RM provides row-level SQL access to high volumes of detail data on any layer—including tape—in the StorHouse storage hierarchy. SQL access is available from different platforms through a variety of industry-standard protocols.

StorHouse/Control Center

StorHouse/Control Center (CC) is FileTek's Windows®-based application for StorHouse system and database administration. It provides an easy-to-use graphical user interface (GUI) that simplifies StorHouse storage and database management tasks. You can use the StorHouse/Control Center *StorHouse/Admin module* to monitor system performance and manage StorHouse devices.

Purpose of This Document

The *System Operator's Guide* is designed to help you provide StorHouse users with responsive, efficient, and economical service. It describes how to perform basic operational tasks for your StorHouse system. These tasks include how to power-cycle the system, respond to operator request messages, monitor system activity, and manage StorHouse devices and media.

This book does not describe or illustrate StorHouse hardware components or explain how to operate StorHouse devices. For this information, consult vendor-

supplied server and/or device documentation or visit the support section of individual vendor websites.

Intended Audience

The manual is intended for you, the StorHouse system operator. It may also be of interest to the StorHouse system administrator who oversees and sets policy for daily StorHouse operations.

At some sites, the same person performs the functions of the system operator and system administrator. At other sites, these functions are distributed among many people. In the text that follows, the system operator is referred to as *you*. The system administrator is specifically referred to as *system administrator*.

Contents

The *System Operator's Guide* contains six chapters and two appendices.

- Chapter 1, "Introduction," describes system operator responsibilities and explains StorHouse accounts, system parameters, and Command Language.
- Chapter 2, "Understanding the Storage Hierarchy," defines the StorHouse storage hierarchy and introduces basic StorHouse concepts.
- Chapter 3, "StorHouse Operating Procedures," explains such tasks as StorHouse power-up and power-down, start-up and shutdown, taking the system offline, and system recovery.
- Chapter 4, "Working with Devices," explains how to control device activity and requests.
- Chapter 5, "Working with Volumes and Volume Sets," explains how to manage volumes and volume sets.
- Chapter 6, "Working with the System," explains how to control and monitor system activity.
- Chapter 7, "Working with Operator Messages," explains how to enable console message queuing at user terminals, receive and reply to operator request messages, and clear the operator message queue.
- Appendix A, "Operator Messages," lists operator messages in alphabetical order by status code.

Related Documentation

The StorHouse User Document Set includes other related documents:

- *StorHouse Glossary*, publication number 900027, defines technical terminology used in all FileTek® publications.
- *StorHouse Concepts and Facilities Manual*, publication number 900026, is a reference manual that defines basic StorHouse concepts, structures, and functions.
- *Command Language Reference Manual*, publication number 900005, defines all available StorHouse Command Language commands and explains related StorHouse concepts.
- *System Administrator's Guide*, publication number 900007, describes guidelines for StorHouse system administration. It is designed to help the administrator provide StorHouse users with responsive and efficient service.
- *Messages and Codes Manual*, publication number 900032, contains the messages and return codes generated by the StorHouse system and host software. It gives the meaning of each message and indicates any actions to take.

Notational Conventions

For examples and procedures that involve StorHouse Command Language, this manual assumes that your standard access method is the StorHouse Interactive Interface. This book uses the following conventions for illustrating command formats, presenting examples, and identifying special terms:

Convention	Meaning
Angle brackets (< >)	Enclose optional entries
Braces ({ })	Enclose descriptive terms or a choice of entries
`Courier font`	Code
Italics	New terms and emphasized text
lower case Helvetica font	User entries
UPPER CASE	System responses and StorHouse terms
▼	Procedures

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Chapter

1

Introduction

StorHouse is a central storage repository that provides efficient and responsive data storage services to end-users. Although it is a highly automated system, it does require assistance for some operations. After your system administrator configures StorHouse, you help monitor and manage the system to best satisfy the needs of your end-user departments.

This chapter describes:

- Your responsibilities as system operator
- The StorHouse OPERATOR account
- StorHouse system parameters
- StorHouse Command Language as a tool for system operation.

System Operator Responsibilities

Performing daily StorHouse operations means that you are responsible for the following tasks:

- Powering up and powering down the StorHouse server *
- Shutting down the StorHouse operating system*
- Occasionally starting up and shutting down the StorHouse software
- Notifying the system administrator when system recovery is necessary
- Responding to operator messages and error conditions that may develop
- Monitoring system operation while StorHouse processes user transactions
- Controlling system devices and volumes
- Loading and unloading cartridges into and from library devices*
- Checking that optical cartridges contain an external volume label and that tape cartridges contain an external bar code label
- Replacing missing cartridge labels when required.

This manual does not describe how to perform tasks marked with an asterisk (*). Refer to your hardware vendor-supplied documentation or the appropriate vendor website for these instructions.

StorHouse OPERATOR Account

StorHouse controls user access through an *account system*. Each user account has an identification code, a password, a set of privileges, and other administrative information. End-users and applications use their prescribed account to sign on to StorHouse and start a *StorHouse session*, which lasts from account signon to signoff. StorHouse limits user actions during any given session based on account information.

In your role as system operator, you use the standard StorHouse OPERATOR account to sign on to the StorHouse software. The default password for this account is OPERATOR. FileTek recommends that you change this password after signing on to StorHouse for the first time to prevent unauthorized use of the account.

System Parameters

You will encounter StorHouse system parameters when you perform system operation tasks. *System parameters* are named data fields that StorHouse uses to manage resources and provide default information for system operations. They define things such as:

- Default values for file attributes or characteristics
- Limits, constants, and values that control file migration and backup operations
- Limits that control system activity.

Your system administrator chooses values for many system parameters during system installation. Each parameter has an assigned default, which the system administrator can change. Appendix A of the *Command Language Reference Manual* defines all available StorHouse system parameters and lists their default values.

Tools for Performing System Operation

You have a choice of tools for managing StorHouse operation. You can select StorHouse/Admin to perform StorHouse operator tasks, or you can choose StorHouse Command Language, the standard command line interface between host computers and StorHouse.

About StorHouse/Admin

StorHouse/Admin enables you to use pull-down menus, option lists, and point-and-click controls to perform system operation tasks through a Windows GUI from one or more network-connected PCs. The software provides real-time monitoring of functions such as StorHouse server CPU usage, mounted volumes, device status, and request activity. With StorHouse/Admin you can get an immediate picture of StorHouse system status and identify the need for additional system resources or performance improvements. You can also respond to operator messages and submit StorHouse Command Language commands through an interactive command window.

About StorHouse Command Language

StorHouse Command Language is the standard command line interface between StorHouse and StorHouse hosts. Your system administrator sets account privileges to control which commands you and other users may execute. Once you sign on to StorHouse, you can enter your command set at the StorHouse question mark (?) prompt according to the following command statement format.

Command Statement Format

The Command Language command statement format is:

? command_verb </modifier<=data>...> <parameter> </modifier<=data>...>

where <parameter> </modifier<=data>...> can be repeated.

The command line contains a command verb that indicates the action you want StorHouse to perform. It may also include optional or required parameters and modifiers (with or without data fields).

A example of a StorHouse Command Language command is:

SHOW FILE	MYFILE*	/GROUP=MYGRP	
Command verb	Parameter	Modifier	Data

Parameters. *Parameters* define the object or objects affected by the command activity. Parameters are optional on some statements and required on others. Refer to specific command descriptions to determine whether a command requires a parameter.

In system operation, the most likely parameters you will use are volume identifiers and device identifiers, which are described in Chapter 2, “Understanding the Storage Hierarchy.”

Modifiers. Modifiers limit or enhance the scope of a command or a parameter or provide additional data to be used in the command. There are two kinds of modifiers:

- *Command* modifiers – limit or focus the scope of commands
- *Parameter* modifiers – limit or focus the scope of parameters.

Note the following:

- A Command Language statement may contain one or more command and/or parameter modifiers. You must precede each modifier with a slash (/).

- During system operation, StorHouse uses the value of some system parameters as the default value for command modifiers that you omit.

- A command modifier can appear anywhere in the statement, as long as it follows the command verb.

- The function of a parameter modifier depends on its placement in the command line. To modify a particular parameter, place the modifier after that parameter but before the next parameter in the command line. To modify *all* parameters in a command line, place the modifier after the command verb but before the first parameter.

- Some modifiers can be negated or turned off by inserting the letters NO between the slash and the modifier. Generally, the NO option is used to nullify a modifier that is present in a command by default.

Frequently Used System Operation Commands

The StorHouse commands that you will frequently use perform the following functions:

- Control and display information about StorHouse devices
- Display information about volumes
- Move individual volumes or entire volume sets between storage levels or between library devices
- Monitor and control system activities
- Read and reply to operator messages.

Table 1-1 lists these frequently used StorHouse commands:

Table 1-1: Frequently Used StorHouse Commands

Command	Description
CONSOLE	Requests or sends a reply to a StorHouse operator console message.
DOWN DEVICE	Completes current activity on a device and makes it unavailable for use by StorHouse.

Table 1-1: Frequently Used StorHouse Commands (continued)

Command	Description
MESSAGE	Sends a message to the StorHouse operator console or to a user.
MONITOR	Displays current system activity and performance information.
MOVE VOLUME	Moves a volume to a specified location.
MOVE VSET	Moves all volumes in a volume set to a specified location.
RESERVE SYSTEM	Controls access to StorHouse by other accounts.
RUN	Runs the procedures that have been installed on a StorHouse system, usually by FileTek Customer Support.
SET DEVICE	Changes the device mode for a magnetic disk drive or a library device drive.
SET VOLUME	Changes the status of a volume.
SHOW DEVICE	Displays the device status and, if applicable, mode and supported media of a StorHouse device.
SHOW VOLUME	Displays information about a volume.
SHUTDOWN	Initiates a shutdown of the StorHouse software.
UP DEVICE	Initializes a device and makes it available for use by the StorHouse system.

Tool Used in This Manual

This manual presents instructions for performing system operator tasks using Command Language commands rather than StorHouse/Admin. For information about how to use StorHouse/Admin, refer to the *Getting Started with StorHouse/Admin* manual, publication number 900135, and the *StorHouse/Admin System Operator's Quick Reference*, publication number 900149, in the StorHouse/Control Center User Document Set.

Chapter

2

Understanding the Storage Hierarchy

This chapter defines the StorHouse storage hierarchy and introduces basic concepts that appear in subsequent chapters. As you read this manual, you may want to refer back to this chapter from time to time.

About the Storage Hierarchy

StorHouse supports a seamless hierarchy of storage devices and media to satisfy different end-user requirements for response time, cost of storage, data retention, and space allocation. The StorHouse software automatically manages the storage hierarchy and moves data to the appropriate location based on system- and user-controllable parameters.

The components of the StorHouse storage hierarchy can include:

- RAM (which the system uses for data caching)
- RAID
- ATA disks
- MAID
- Erasable and write-once-read-many (WORM) optical disk jukeboxes
- Erasable and WORM tape in automated libraries
- Shelf storage.

For detailed information about the hardware devices used with your StorHouse system, consult the appropriate vendor-supplied documentation. You can also refer to applicable vendor websites for diagrams and instructions for loading and unloading tape and/or optical cartridges and safely handling and cleaning tape and optical media.

Understanding Storage Levels

StorHouse divides the storage hierarchy into three distinct levels as depicted in the following table:

Table 2-1: Levels in the Storage Hierarchy

Level	Storage Devices	Characteristics
Fixed (level F)	Two separate layers: • RAID • ATA disk	Fixed storage of nonremovable volumes. Level F is typically used as a *performance buffer* to write data from the client at faster speeds and as a staging area for higher frequency data retrievals. StorHouse automatically migrates, or removes, files from the performance buffer.
Library (level L)	Five separate layers: • MAID • Erasable optical disk • WORM optical disk • Erasable tape • WORM tape	Library storage of removable volumes. Robotic accessors in the libraries transfer cartridges between slots and drives automatically as users request information. The erasable and WORM optical layers may reside in the same jukebox.
Shelf (level S)	Separate shelf storage units for each jukebox and automated tape library in level L.	Storage of removable volumes unloaded from level L libraries. StorHouse requests you to load shelf volumes into a library device based on end-user requests for files. StorHouse still automatically manages all volumes on level S.

The following drawing illustrates the levels and layers in the storage hierarchy.

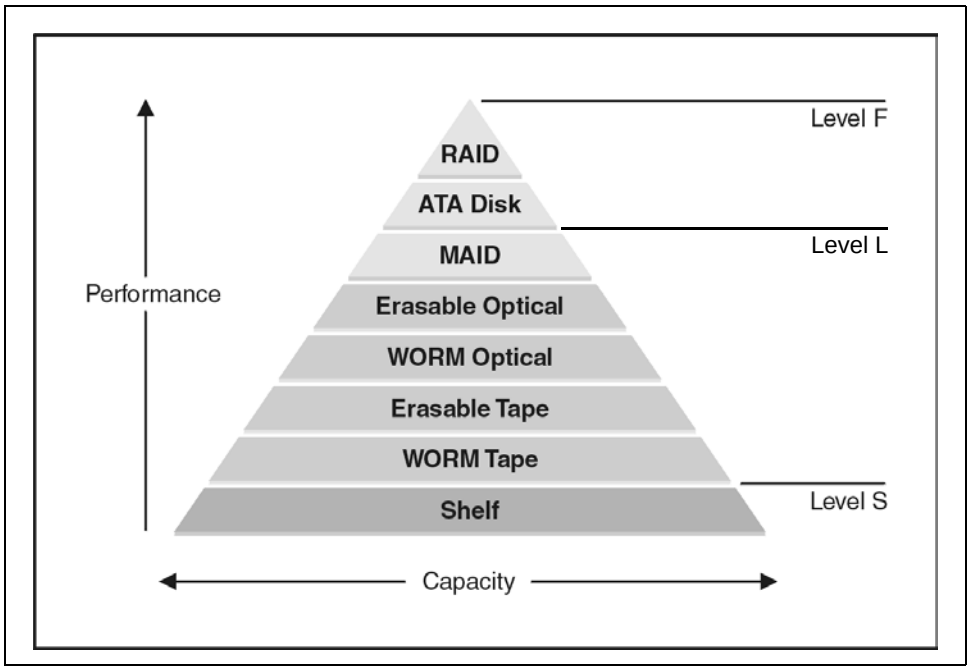

Figure 2-1: StorHouse Storage Hierarchy

Level L Storage

Refer to your vendor documentation for instructions about how to load and unload tape and/or optical cartridges and how to safely handle and clean tape and optical media.

Note the following special considerations for level L storage:

- When loading and unloading optical volumes, it is your responsibility to ensure that each volume is marked with an external volume label. The label must specify the volume identifier and the name of the volume set associated with the volume. You should replace missing, illegible, or incorrect labels immediately.

- When removing a tape cartridge from a library device, it is your responsibility to ensure that the cartridge contains a bar code label. You should replace missing, illegible, or incorrect labels immediately.

- FileTek recommends that you make and retain current backup and/or archive copies of all data that is stored exclusively on magnetic tape.

- The read/write heads in a magnetic tape drive require occasional cleaning to prevent errors due to dirty heads and to prevent damage to the drives. StorHouse supports the use of special head-cleaning tape cartridges for this purpose. Typically, cleaning tapes are permanently stored in the tape slots. The system monitors drive condition and automatically inserts a cleaning cartridge in a drive when needed. A cleaning cartridge can be used a specific number of times before it must be replaced. The system monitors cleaning cartridge usage and automatically directs you to unload an old cleaning cartridge and load a new one after a cartridge's last use.

Device Identifiers

Each hardware device in the storage hierarchy has a unique device identifier, also known as a *device identification code* (did). It's important to understand the components of a did because you will specify them in StorHouse Command Language commands.

The did consists of one or more of the following components:

Table 2-2: Device Identification Code Components

Component	Identifies	Valid Values
Level	Type of device or storage level	F (fixed) L (library) N (network) S (shelf)
Unit_number	Physically separate device	Hexadecimal values A-F, 0-9
Subunit_type	Type of device within a level L unit	A (accessor) D (drives) E (exchange station) S (slot)
Subunit_number	Specific device or location within a unit. This component is optional.	Hexadecimal values A-F, 0-9

You can specify a did for an entire unit or for a subunit (a component within a unit). The format of a unit did is:

{level}{unit_number}

For example, the did of library device 01 is L01:

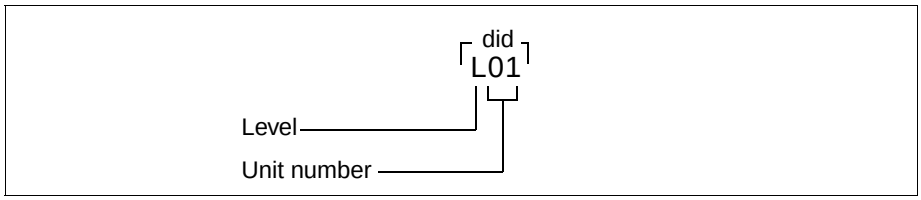

Figure 2-2: Sample Device Identification Code for a Unit

The format of a subunit did is:

{level}{unit_number}{subunit_type}{subunit_number}

For example, the did of drive 00 in library device 01 is L01D00:

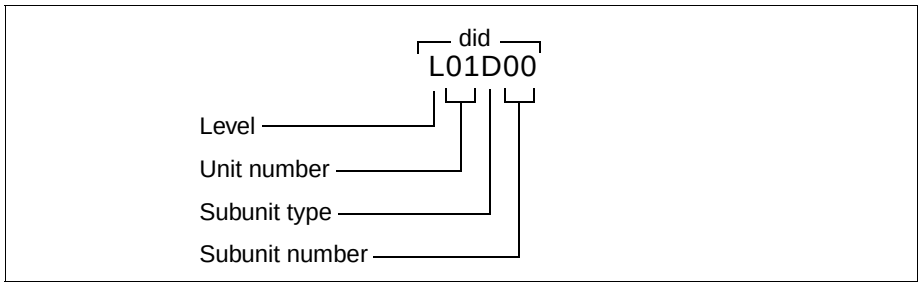

Figure 2-3: Sample Device Identification Code for a Subunit

On some commands, you can use the StorHouse wild card character (*) to replace all or part of the did. Refer to the description of the specific command to determine whether you can use a wild card.

Understanding Volumes

A *volume* (or *physical volume*) is a unit of media where data can be recorded and read. The *residence* of a StorHouse volume is the location of the volume in one of the three storage levels.

The portion of a physical volume that can be accessed when mounted in a drive is called a *logical* volume. A logical volume consists of one or more physical volume sides, or surfaces. For example, some optical drives can access both sides of a two-sided optical volume simultaneously. In this case, each two-sided optical volume has only one logical side (side A). Tape volumes also have one logical side (side A). Other optical drives can access only one side of a double-sided optical disk at a time. In this case, the two-sided optical volume has two logical sides, side A and side B.

From time to time, StorHouse will ask you to load one or more blank volumes into a specific library device. A *blank* volume is any volume that has not been initialized by the StorHouse software. When StorHouse initializes a volume, it writes an internal volume label on the media. Once a volume has been initialized, it becomes an *empty* volume. An empty volume contains an internal volume label, but no data or file labels. A collection of empty volumes of the same media and recording type in a library device is called a *free pool*.

Volume Identifiers

StorHouse identifies each volume by a unique volume identifier, also called a *volume identification code* (vid). You must understand the components of a vid because you will specify these codes in StorHouse Command Language commands.

For a *physical* volume, the vid contains three concatenated subfields, as follows:

{media_type}{recording_type}{volume_label}

The media type field identifies the type of drive where a volume can be formatted and processed. The recording type field identifies the recording mode used to format the volume and/or the volume's fixed mode. The volume label is a StorHouse-generated identifier or a predetermined bar-code label.

OEA27529BC5 is an example of a valid vid for a physical volume:

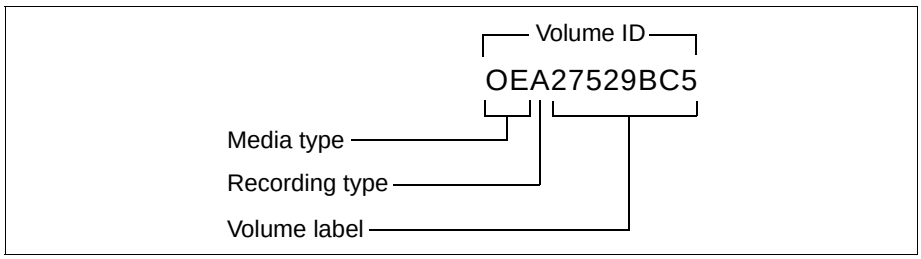

Figure 2-4: Sample Volume Identification Code for a Physical Volume

For tape, the vid format is the same as optical, except for the volume label component, which contains 1 to 6 characters instead of 1 to 8.

A *logical* volume is one side or surface of a physical volume. The vid of a logical volume consists of its physical volume vid plus a colon and a side indicator, as follows:

{media_type}{recording_type}{volume_label}:{side}

OEA27529BC5:B specifies side B of the same volume:

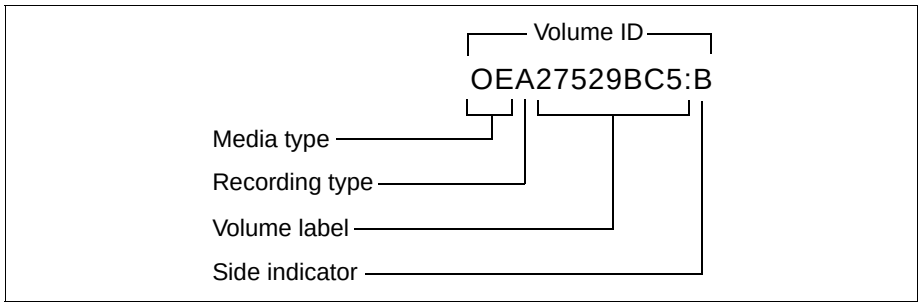

Figure 2-5: Sample Volume Identification Code for a Logical Volume

Some StorHouse operations, such as moving volumes between devices, require you to specify a physical volume vid. Others operate on specific sides and require you to specify a logical volume vid. The individual StorHouse commands in the *Command Language Reference Manual* will indicate which vid type to specify.

On some commands, you can use the StorHouse wild card character (*) to replace all or part of the vid. Refer to the description of the specific command to determine whether you can use a wild card.

Understanding Volume Sets

Your system administrator creates sets of volumes on a StorHouse system. A *volume set* is a collection of one or more physical volumes that StorHouse treats as a unit. Every removable volume (level L and level S) in StorHouse must be a member of a volume set. All level F magnetic disks are configured as one volume set.

All volume sets have a *residence*, or location, that indicates where member volumes reside. Volume sets consisting of removable media can reside on different storage levels and/or in different level L libraries. For example, a three-volume set may initially reside in library 1. One member volume may subsequently be moved out of the library to shelf storage (level S). In this case, the volume set resides on level L and level S.

The system administrator or users with the proper authority can create a volume set on a specific library device or on the system default library device. The value of the DEFAULT_LD system parameter determines the name of the default library device. The system administrator can also determine limits for volume set growth.

Figure 3-6 illustrates a sample volume set:

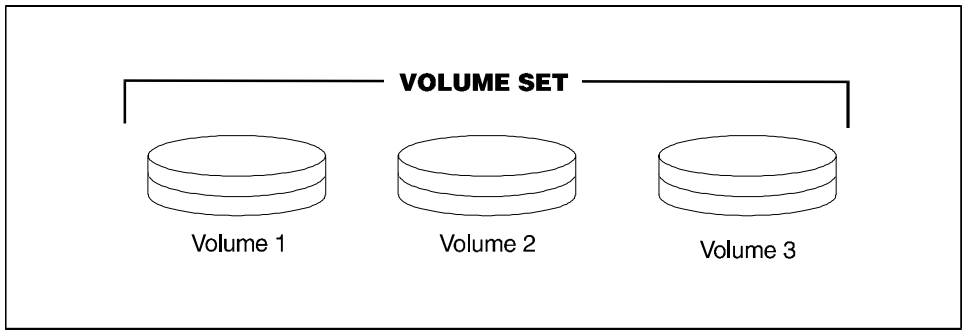

Figure 2-6: Sample Volume Set

Standard Volume Set Names

Each volume set has a unique *volume set name*, which you may need to specify on Command Language commands. A volume set name can contain one to eight of the following ASCII characters: A-Z (uppercase), 0-9, _ (underscore), and $ (dollar sign). For example, a valid volume set name is OPERVSET.

Free Pool Volume Set

StorHouse manages two types of level L volume sets: volume sets for user files and *free pool volume set*s. Free pool volume sets contain the empty volumes in a library device. Every free pool has a free pool volume set, whether or not there are any volumes in that volume set. When a volume set requires more storage space for files, StorHouse takes a volume from the specified device's free pool and allocates it to the volume set.

A free pool volume set uses special naming conventions. The format of a free pool volume set name is .Lxxmmr. For example, the tape (TBB) free pool volume set in library device 00 is .L00TBB:

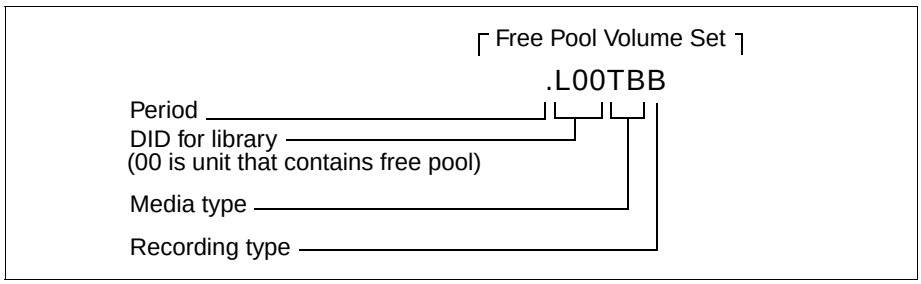

Figure 2-7: Sample Free Pool Volume Set Name

You cannot use a free pool volume set name as a volume set name in most StorHouse Command Language commands. The leading period used as the first character in a free pool volume set name is an invalid character for standard volume set names.

Each library device in level L contains one free pool volume set for each media and recording type combination that the library supports. For example, if a library supports 5.25-inch erasable and WORM optical, then that library has two separate free pools: one for the erasable media and a second free pool for WORM. StorHouse automatically allocates empty volumes from the appropriate library device free pool to specific volume sets as necessary to meet user storage requirements.

Every library device has a corresponding FREE_POOL_didmmr system parameter. Each system parameter determines the minimum number of empty volumes in the free pool volume set for the specified library device (did), the media type (mm), and the recording type (r). If the number of volumes in any free pool volume set falls below its minimum value, StorHouse automatically asks you to load one or more blank (new) volumes of the appropriate media into the exchange station of the respective library device. StorHouse initializes each blank volume and adds it to the free pool volume set.

Chapter

3

StorHouse Operating Procedures

This chapter describes the StorHouse operating environment and explains how to:

- Manually start up the StorHouse software
- Sign on to the StorHouse software
- Sign off from the StorHouse software
- Shutdown the StorHouse software.

In addition, it introduces the StorHouse extended recovery capability.

Managing Your StorHouse Environment

StorHouse software runs on Sun Microsystems® Ultra™ Enterprise and Sun Fire servers, Hewlett-Packard® PA-RISC servers, and IBM pSeries servers. These platforms consist of processors, memory, and I/O interfaces on system boards. Each platform runs one copy of the operating system and one instance of StorHouse. Consult vendor documentation for instructions about how to perform server power up, power down, login, and logout procedures.

Power On Activities

When you power on the StorHouse hardware, the StorHouse server operating system starts automatically. During start-up, the StorHouse server executes system start-up procedures and any site-specific system start-up commands. Then it initializes operating system log files and the date and time, and starts the network software and the StorHouse software.

A successful StorHouse server and software start-up displays the operating system login prompt and the following message on the console terminal:

StorHouse start-up complete.

In the unlikely event that the StorHouse operating system software does not start automatically, contact your FileTek customer support representative.

UNIX Login Account

After you power on the StorHouse server, you should use the UNIX operator account to log in to the StorHouse server operating system. The default password for this account is operator. Your system administrator should change this password after system installation to prevent unauthorized use of the system.

You can log in to your StorHouse server operating system (UNIX®) and use operating system features even when the StorHouse software is down. However, the StorHouse server operating system software must be up and running before you can sign on to StorHouse.

Manually Starting the StorHouse Software

If the StorHouse operating system software comes up but the StorHouse software does not start automatically, you can start it manually.

▼ **To start the StorHouse software manually**

1. Log in to the StorHouse server operating system.
2. At the StorHouse server operating system prompt, type the following command and press Enter↵:

   startsm

StorHouse generates a series of console messages during start-up. The last message notifies you that start-up is complete:

StorHouse start-up complete.

Signing On and Off the StorHouse Software

Once the StorHouse software is operational and you are logged in to the StorHouse server operating system or a host, you can sign on to StorHouse. Refer to the *Command Language Reference Manual* for information about how to sign on to StorHouse from different types of hosts.

▼ **To sign on to StorHouse from the StorHouse server**

1. At StorHouse server operating system prompt, type the following command and press Enter↵:

   sm

   The interface prompts you to type an account identification code (aid).

2. At the Account? prompt, type an account identification code and press Enter↵.

   The interface prompts you for a password:

3. At the Password? prompt, type your password and press Enter↵.

   The interface does not display the password when you type it. This password may differ from the password that you entered when you logged in to the StorHouse server.

The system verifies the account and password and then gives you the StorHouse prompt (?). You can now enter StorHouse Command Language commands.

▼ **To sign off StorHouse**

At the ? prompt, type the following command and press Enter↵:

signoff

The StorHouse server operating system prompt appears.

Shutting Down the StorHouse Software

The following tasks explains how to shut down the StorHouse software.

▼ **To shut down the StorHouse software**

At the StorHouse operating system prompt, type the following command and press Enter↵:

stopsm

You will not receive the system prompt again until this shutdown process completes, which takes a few minutes.

Powering Down Library Devices

Follow your vendor documentation instructions for powering down library devices. However, if you are using ACSLS or LibraryStation software to share library storage with StorHouse and non-StorHouse applications, you must evaluate whether to turn off all or selected library devices on a case-by-case basis.

StorHouse Recovery

After a hardware or a software failure, you may need to perform recovery procedures for StorHouse. StorHouse sends you a console informational message whenever a recovery (other than normal recovery) is necessary.

Normal Recovery

A *normal recovery* occurs when the StorHouse system goes down in an uncontrolled manner but no directory information is lost. In such a case, StorHouse will automatically restart and recover on its own.

If the software experiences a failure while a system file is being updated, StorHouse attempts to log an error message and display it at the system console before shutting down. You must restart the StorHouse system to initiate recovery. If the corrupted system file has a shadow copy, StorHouse uses the shadow copy to recover during the next startup. If there is no shadow copy or StorHouse is unable to recover, it attempts to log an error message and display it at the system console again before shutting down. Should this occur, ask your system administrator to call your FileTek customer support representative for assistance. If your site has the StorHouse Call Home error reporting facility enabled, StorHouse will automatically attempt to activate Call Home.

Directory Recovery from Physical Volumes

Directory recovery from physical volumes (a type of extended recovery) may be necessary if both the primary and shadowed copies of a required system file become corrupted, and the file cannot be recovered during normal recovery. Should this occur, ask your system administrator to contact your FileTek customer support representative, who will perform the directory recovery. During directory recovery from physical volumes, all user accounts, directory information, and user files may be deleted from magnetic disk.

StorHouse displays the following message on the StorHouse console notifying your FileTek customer support representative that directory recovery may be necessary:

XROINFO, Lxx, LIBRARY RECOVERY REQUIRED FOR n VOLUME(S)

Chapter

4

Working with Devices

StorHouse provides four Command Language commands that help you control device activity and requests:

- DOWN DEVICE
- SET DEVICE
- SHOW DEVICE
- UP DEVICE.

Taking Down a StorHouse Device

DOWN DEVICE completes the current activity on a device and makes it unavailable for any additional activity. The system will not use the device until you bring it up again with the UP DEVICE command. StorHouse notifies you of the change in device status with an operator message.

The following rules apply when executing DOWN DEVICE:

- You cannot use wild cards in the device specification.
- You must include the level and unit_number in the device identifier.
- To down a subunit, specify the device, unit_number, subunit_type, and subunit_number.
- If you down a unit with subunits, such as a library device with an accessor and drives, all component subunits will effectively be down.
- To prevent volumes from being moved into or out of a library device, down the exchange station.

- To prevent volume read/write/verify/label operations, down all drives.
- If you down all of level L, the system will reject all user requests to level L.

You can use two modifiers with the DOWN DEVICE command: /CONFIRM and /REPORT. /CONFIRM controls whether StorHouse asks you to confirm the command. /REPORT controls the generation of special text responses for the completion of significant actions.

You must have OPERATOR privilege to use DOWN DEVICE.

▼ **To take down a StorHouse device**

1. Sign on to StorHouse.
2. At the StorHouse command prompt (?), type the following command and press Enter↵:

   DOWN DEVICE did

   where did is the device identification code of the device you want to take down. Some examples follow:

   – To take down library device L00 and effectively all its subunits after StorHouse completes current processing on library L00, enter:

     ? DOWN DEVICE L00

   – To take down drive 00 in library device L00, enter:

     ? DOWN DEVICE L00D00

     If a volume is in the drive, the system will complete the operation for the volume in the drive, dismount the volume, and store the volume in a library slot or move it to another drive.

Changing the Device Mode for a Drive

SET DEVICE lets you set or clear the read-only device mode for level F or level L devices. In addition, the command supports dynamic changes to the size of fixed content object-based disk and filesystem level F drives. You must have OPERATOR privilege to specify all modifiers except /SIZE, which requires SYSTEM privilege.

The following table defines the modifiers you can use with SET DEVICE:

Modifier	Description
/CONFIRM	Controls whether StorHouse asks you to confirm the command.
/READ_ONLY	Changes the mode of a drive. /READ_ONLY instructs StorHouse to set the drive to read_only. /NOREAD_ONLY instructs StorHouse to clear the read_only mode for the specified drive.
/REPORT	Controls the generation of special text responses for the completion of significant actions.
/SIZE	Specifies the number of bytes allocated for fixed content object-based disk or filesystem level F drives.

▼ **To change the mode for a StorHouse level F or level L device**

1. Sign on to StorHouse.
2. At the StorHouse command prompt (?), type the following command and press Enter↵:

   SET DEVICE did

   where did is the device identification code of the device you want to set. Some examples follow:

   – To set drive L00D01 to read-only mode, enter:

     ? SET DEVICE L00D01 /READ_ONLY

   – To clear the read-only mode for drive L00D01, enter:

     ? SET DEVICE L00D01 /NOREAD_ONLY

   – To set drive F00 to read-only mode, enter:

     ? SET DEVICE F00 /READ_ONLY

Displaying the Status of a StorHouse Device

SHOW DEVICE displays the device status and, if applicable, mode and supported media of a StorHouse device.

Table 4-1: Device Statuses and Modes

Item	Description
A device status can be:	
UP	Available for use.
DOWN	Not available for use.
GOING_DOWN	Device is completing the current work, but StorHouse will assign no additional work to it. The status changes to DOWN when the current work completes.
COMING_UP	StorHouse is preparing the device for operation. The status changes to UP when the device is available for use.
A device mode can be:	
ALLOCATED	Device is allocated. (This mode is reserved for use by FileTek.)
READ_ONLY	Device is accessible for reading only.
INITIALIZING	Device is being initialized (using the INITIALIZE DEVICE command).
INITIALIZED	Device initialization is complete.
MAINTENANCE	FileTek has taken the device down for maintenance.

If none of the modes apply to the specified device, the command does not display mode information. If one or more modes apply to a device, the command displays the information as follows:

MODES=(mode, ...)

If the device supports specific kinds of media, the command displays the supported media as follows:

MEDIA=(mmr:rw, mmr:rw,...)

where each mmr indicates a supported media type (mm) and recording type (r), and rw can be:

- R if the device can only read the medium;
- W if the device can only write to the medium;
- RW if the device can read and write to the medium.

If a library device is DOWN, all of its subunits are considered to be DOWN.

You must have SHOW or OPERATOR privilege to use SHOW DEVICE.

▼ **To display the status for a StorHouse device**

1. Sign on to StorHouse.
2. At the StorHouse command prompt (?), type the following command and press Enter↵:

   SHOW DEVICE did

   where did is the device identification code of the device you want to display. Some examples follow.

   – To display the status of library device L00, enter:

     ? SHOW DEVICE L00

     The system displays a response like the following:

     DEVICE=L00 STATUS=UP

   – To display the status and supported media of drive 00 in library device L00, enter:

     ? SHOW DEVICE L00D00

     The system displays a response like the following:

     DEVICE=L00D00 STATUS=UP MEDIA=(OEA:R,OEB:RW)

Bringing Up a StorHouse Device

UP DEVICE initializes a device for use by the system. StorHouse notifies you of the change in device status with an operator message.

The following rules apply when executing UP DEVICE:

- You cannot use wild cards in the device specification.
- You must include the level and unit_number in the specification.
- To bring up a subunit, specify the device, unit_number, subunit_type, and subunit_number.
- If you bring up a unit with subunits, such as a library device with an accessor and two drives, the component subunits become accessible when the unit becomes accessible. However, if you take the subunits down independently from the entire device, you must bring them up separately.

You can use two modifiers with the UP DEVICE command: /CONFIRM and /REPORT. /CONFIRM controls whether StorHouse asks you to confirm the command. /REPORT controls the generation of special text responses for the completion of significant actions.

You must have OPERATOR privilege to use UP DEVICE.

▼ **To bring up a StorHouse device**

1. Sign on to StorHouse.
2. At the StorHouse command prompt (?), type the following command and press Enter↵:

   UP DEVICE did

   where did is the device identification code of the device you want to bring up. Some examples follow:

   – To bring up library device L00 and all its subunits (assuming the subunits were not brought down individually), enter:

     ? UP DEVICE L00

   – To bring up drive 00 in library device L00, enter:

     ? UP DEVICE L00D00

Chapter

5

Working with Volumes and Volume Sets

As an operator, you can submit the following Command Language commands to manage volumes and volume sets:

- MOVE VOLUME
- MOVE VSET
- SET VOLUME
- SHOW VOLUME.

Moving Volumes

MOVE VOLUME lets you move volumes between library devices or between library devices and shelf storage. Each library device has a corresponding shelf storage. For example, the shelf storage for library device L00 is S00. The shelf storage for L01 is S01. If you do not specify a unit number for the destination device in the command when moving volumes or volume sets between library devices and shelf devices, StorHouse matches the unit number of the volume's current device to the unit number of the destination device.

The MOVE VOLUME command requires that you specify a volume identification code (vid) for the volume being moved and a device identification code (did) for the destination device. (You can specify wild cards in the vid parameter.)

Optionally, you can add or update a memo for a volume. The information you specify on the /MEMO parameter modifier is written to the StorHouse system files, but is not written to the optical or tape volume. The memo text also displays in selected operator messages.

The following table defines the modifiers you can use with MOVE VOLUME:

Modifier	Description
/CONFIRM	Controls whether StorHouse asks you to confirm the command.
/DIRECTORY=...	Specifies the directory from which volumes are to be selected.
/DUPLEXED	Selects a volume if every file extent on the volume has a duplex copy and the duplex copy is on a volume that does not have a disabled side.
/FIRST_ALLOCATION=...	Specifies the time period from which volumes are to be selected, based on their first allocation dates. For two-sided volumes, the first allocation dates for both sides must be within the time period.
/LAST_ALLOCATION=...	Specifies the time period from which volumes are to be selected, based on their last allocation dates. For two-sided volumes, the last allocation dates for both sides must be within the time period.
/LOCATION=...	Specifies the location (that is, the source device) from which volumes are to be selected.
/MEMO=...	Specifies up to 32 characters of descriptive text to be added to the StorHouse system files for each volume being moved.
/NEEDS_CLEANING	Selects volumes that need cleaning.
/REPORT	Controls the generation of special text responses for the completion of significant actions.
/UNUSED=...	Selects volumes that have no more than a specified percentage or amount of their writable space remaining. For two-sided volumes, the unused space for each side must be within the percentage or amount.
/VSET=...	Specifies the volume set from which volumes are to be selected.
/WRITELOCK	Indicates that the command will writelock each volume selected to be moved.

/DIRECTORY and /VSET are mutually exclusive modifiers.

You must have OPERATOR privilege to use this command.

FileTek recommends that you use the SCHEDULE command with MOVE VOLUME. Commands that generate operator messages like MOVE VOLUME tie up your user session until the operator responds to volume load and unload requests. In contrast, when you schedule these commands, the SCHEDULE command starts a separate user session for command execution and operator response. This way, your terminal remains open so that you can continue working. See the *Command Language Reference Manual* for more information on the SCHEDULE command.

▼ **To move a StorHouse volume from one location to another**

1. Sign on to StorHouse.

2. At the StorHouse command prompt (?), type the following command to move a StorHouse volume and press Enter↵:

   MOVE VOLUME vid did modifiers

   where vid is the unique volume identifier, did is the device identification code for the destination device, and modifiers are other command and parameter modifiers you use to assign values other than the defaults. Some examples follow.

   – To move volume OAD27529BC5 from library device L00 to shelf storage, enter:

     ? MOVE VOLUME OAD27529BC5 S

   – To move all volumes that need cleaning to shelf storage, enter:

     ? MOVE VOLUME * S /LOCATION=L /NEEDS_CLEANING

   – To add the memo “Rack 3 Slot 10” (or change the existing memo to this memo) to designate the location for volume OAD12C68147 while moving it to level S, type:

     ? MOVE VOLUME OAD12C68147 S /MEMO=“Rack 3 Slot 10”

Moving Volume Sets

MOVE VSET lets you move a StorHouse volume set between library devices or between a library device and shelf storage. This command moves all the volumes in a volume set to a location you specify within the StorHouse system and updates the last access time for the volumes that you move.

StorHouse moves volumes individually when you move a volume set between library devices. The operator receives two messages for each volume: first, to unload the volume from the source library, and then to load the volume into the destination library. If any volumes are already located in the destination library, StorHouse responds as if it has moved them successfully. (If you move a volume set to shelf, the operator receives only the first message to unload the volumes. If the volume is on shelf and you move it to a library, the operator receives only the second message.)

When you move a StorHouse volume set, you must specify the name of the volume set and a device identification code (did) for the destination device. Optionally, you can add or update a memo for the volume set.

The following table defines the modifiers you can use with MOVE VSET:

Modifier	Description
/CONFIRM	Controls whether StorHouse asks you to confirm the command.
/MEMO=...	Specifies up to 32 characters of descriptive text to be added to the StorHouse system files for each volume in the volume set.
/REPORT	Controls the generation of special text responses for the completion of significant actions.

You must have OPERATOR privilege to use this command. FileTek recommends that you use the SCHEDULE command with MOVE VSET. See the *Command Language Reference Manual* for more information on the SCHEDULE command.

▼ **To move a StorHouse volume set from one location to another**

1. Sign on to StorHouse.

2. At the StorHouse command prompt (?), type the following command and press Enter↵:

   MOVE VSET vset_name did modifiers

   where vset_name is the volume set name, did is the device identification code for the destination device, and modifiers are other command and parameter modifiers you use to assign values other than the defaults. Below are some examples.

   Note: The following MOVE VSET command examples assume that the specified volume set resides in library device L00.

   – To move all volumes in the volume set ACCTS00 from their current location(s) to library device L01, enter:

     ? MOVE VSET ACCTS00 L01

   – To move all volumes in the volume set ACCTS00 to level S (device S00) and attach the memo “Rack 4” to designate the volume set’s new location, enter:

     ? MOVE VSET ACCTS00 S /MEMO=“Rack 4”

Modifying Volume Attributes

You can use the SET VOLUME command to change the attributes or other values for a StorHouse volume. Attributes include the following:

- CYCLE, DEACTIVATE, and EXPIRE – Setting for a volume's cycle, deactivate, and expire timers
- HOLD – Value of the HOLD attribute for the volume.

You can also use SET VOLUME to:

- Specify that a volume side(s) has been cleaned
- Change the memo for a volume
- Disable or enable a volume
- Writelock or unwritelock a volume.

You can also specify a directory or volume set from which volumes are selected. All changes take effect immediately.

The following table defines the modifiers you can use with SET VOLUME:

Modifier	Description
/CLEANED	Specifies that an optical volume side has been cleaned.
/CONFIRM	Controls whether StorHouse asks you to confirm the command.
/CYCLE=...	Specifies a number of days after the last allocation of file space on the first side of a volume that the system will deactivate that side and activate the second side of the volume.
/DEACTIVATE=...	Specifies a number of days after the first allocation of file space on a volume side that the system will deactivate the side; that is, the system will no longer allocate space for files on that side.
/DIRECTORY=...	Indicates that the command will consider for selection only volumes in the specified directory.
/DISABLE	Sets the status of the specified volume side to DISABLED, which prevents the system from selecting it for normal read and write operations.
/ENABLE	Removes the DISABLED status for the specified volume side, which allows the system to select it for normal read and write operations.
/EXPIRE=...	Specifies the number of days after the last allocation of file space on a volume side that the system will mark the side as deactivated and expired.
/HOLD	Specifies the volume's HOLD attribute value. /HOLD sets the value to HOLD; /NOHOLD sets the value to NOHOLD.
/MEMO=...	Specifies up to 32 characters of descriptive text to replace the current memo text, if any.

Modifier	Description
/REPORT	Controls the generation of special text responses for the completion of significant actions.
/UNWRITELOCK	Removes the WRITELOCKED status for the specified volume side, which allows the system to select it for write operations.
/VSET=...	Indicates that the command will select only volumes in the specified volume set.
/WRITELOCK	Sets the status of the specified volume side to WRITELOCKED, which prevents the system from writing additional files to the volume.

The vid parameter is required. You do not need any privileges to use the SET VOLUME command; however, you need privileges to use the following command modifiers:

- OPERATOR privilege for /CLEANED, /DISABLE, /ENABLE, /UNWRITELOCK, and /WRITELOCK
- ALLOCATION privilege for /CYCLE, /DEACTIVATE, /EXPIRE, and /HOLD.

You can schedule the SET VOLUME command.

▼ **To change or set attributes or other values for a StorHouse volume**

1. Sign on to StorHouse.
2. At the StorHouse command prompt (?), type the following command and press Enter↵:

   SET VOLUME vid modifiers

   where vid is the name of the volume to be changed and modifiers are other command and parameter modifiers you use to assign values other than the defaults. Some examples follow:

   – To change the CYCLE attribute of volume OAD2345C123 to 10 days, at which time StorHouse will deactivate side A and activate side B, enter:

     ? SET VOLUME OAD2345C123:A /CYCLE=10

     If volume OAD2345C123 has already cycled, this command reactivates side A and makes side B unavailable for use until 10 days (the new cycle time) have elapsed.

– To change the CYCLE attribute of volume OAD2345C123 to 0, which means that StorHouse does not deactivate the second side when a volume is added to a volume set, enter:

```
? SET VOLUME OAD2345C123:A /CYCLE=0
```

– To change the HOLD attribute of volume OAD2345C123 to NOHOLD, enter:

```
? SET VOLUME OAD2345C123:A /NOHOLD
```

– To add the memo “Rack 3 Slot 10” (or change the existing memo to this memo) to designate the location for optical volume OAD2345C123, enter:

```
? SET VOLUME OAD2345C123:A /MEMO=“Rack 3 Slot 10”
```

Disabling Volumes

A *disabled* volume is a volume that you or the system administrator marked as disabled using the SET VOLUME /DISABLE command, or that StorHouse automatically disabled due to media errors. You might manually disable a volume because it is broken, unreadable, or misplaced. Should you find a misplaced volume that you disabled, you can enable it again using the SET VOLUME /ENABLE command.

StorHouse disables one side of a volume at a time. To disable a two-sided volume, enter an asterisk (*) for the volume side in the vid in the SET VOLUME /DISABLE command. If you specify a wild card for the entire vid parameter, you must also specify /DIRECTORY or /VSET. However, if you specify a wild card for the volume side portion of the vid parameter only, you do not need to specify /DIRECTORY or /VSET. Or, you can issue the command twice (once for each volume side).

▼ **To disable a StorHouse volume**

1. Sign on to StorHouse.

2. At the StorHouse command prompt (?), type the following command and press Enter↵:

   ```
   SET VOLUME vid /DISABLE
   ```

   where vid is the volume identification code of the volume(s) to be disabled. Some examples follow:

   – To disable the one-sided tape volume TBB1234A1, type:

   ```
   ? SET VOLUME TBB1234A1:A /DISABLE
   ```

– To disable both sides of the two-sided optical volume OAD2345C123, type:

```
? SET VOLUME OAD2345C123:* /DISABLE
```

– To disable side B of the two-sided optical volume OAD2345C123, type:

```
? SET VOLUME OAD2345C123:B /DISABLE
```

– To disable all volumes in volume set MAR00, type:

```
? SET VOLUME * /DISABLE /VSET=MAR00
```

Enabling Volumes

Every StorHouse volume is enabled unless you or the system administrator mark it as *disabled* using the Command Language SET VOLUME /DISABLE command, or StorHouse automatically disables it due to media errors. You can enable a disabled volume using the SET VOLUME /ENABLE command.

▼ **To enable a disabled volume**

1. Sign on to StorHouse.
2. At the StorHouse command prompt (?), type the following command and press Enter↵:

   ```
   SET VOLUME vid /ENABLE
   ```

   where vid is the volume identification code of the volume to be enabled. An example follows:

   – To enable all volumes in volume set MAR00, type:

   ```
   ? SET VOLUME * /ENABLE /VSET=MAR00
   ```

Writelocking Volumes

You can use the SET VOLUME /WRITELOCK command to manually writelock one or more volume sides. *Writelocking* prevents any more files from being written to the volume side. StorHouse can still read files on a writelocked volume. For example, you can writelock volumes if you want to move partially full volumes offsite and you do not want StorHouse to attempt to write any more information to those volumes.

StorHouse automatically writelocks volume sides that contain excessive media errors. StorHouse also writelocks tape volumes when it encounters the end of a magnetic tape before it was expected. A premature end-of-tape may be caused by an unusually short tape, excessive media errors, or an extremely large number of very small files.

You must have OPERATOR privilege to use SET VOLUME /WRITELOCK. The vid parameter is also required.

▼ **To writelock one or more StorHouse volume sides**

1. Sign on to StorHouse.
2. At the StorHouse command prompt (?), type the following command and press Enter↵:

   SET VOLUME vid /WRITELOCK

   where vid is the unique volume name. Below is an example:

   – To writelock tape TBB1234A1:A, enter:

     ? SET VOLUME TBB1234A1:A /WRITELOCK

Unwritelocking Volumes

You can use the SET VOLUME /UNWRITELOCK command to unwritelock one or more writelocked volume sides. Once a volume side is unwritelocked, StorHouse can write files to the volume side (if unused space remains).

You must have OPERATOR privilege to use SET VOLUME /UNWRITELOCK. The vid parameter is also required.

▼ **To unwritelock one or more StorHouse volume sides**

1. Sign on to StorHouse.
2. At the StorHouse command prompt (?), type the following command and press Enter↵:

   SET VOLUME vid /UNWRITELOCK

   where vid is the unique volume name. Below is an example:

   – To unwritelock tape TBB1234A1:A, enter:

     ? SET VOLUME TBB1234A1:A /UNWRITELOCK

Displaying Information on a StorHouse Volume

You can use the SHOW VOLUME command to display information about a StorHouse volume. Using different modifiers, you can display information in several ways:

- A brief display using no modifiers or using the /BRIEF modifier lists the following information:

  - Volume identifier
  - Name of the volume set that contains the volume
  - Number of file extents on the volume side
  - Amount of writable space on the volume side, in 1000-byte units.

- A full display using the /FULL modifier lists all available information for a volume, which includes the information for the brief display plus the following:

  - Directory where the volume resides
  - Library or shelf location for the volume
  - State of the volume side
  - Date and time the state of the volume side was last changed
  - System identifier for the volume
  - Site identifier for the volume
  - Date and time the volume was initialized
  - Date and time the volume was last dismounted
  - Date and time the volume was added to the volume set
  - Date and time the volume was last modified
  - Date and time of the first space allocation on the volume side
  - Date and time of the last space allocation on the volume side
  - Value of the CYCLE attribute for the volume
  - Value of the DEACTIVATE attribute for the volume
  - Value of the EXPIRE attribute for the volume
  - Number of mount/dismount cycles for the volume side
  - Percentage of writable space available on a volume side
  - Number of bytes available for allocation to file sets
  - Number of bytes allocated to file sets for general usage
  - User-specified comment (memo) about the volume
  - Value of the HOLD attribute for the volume.

- A selected display using one or more modifiers (except /BRIEF or /FULL), which displays specific information about the volume.

SHOW VOLUME modifiers determine items of information to be displayed. The following table defines the modifiers you can use with SHOW VOLUME:

Modifier	Selects and/or Displays
/ACTIVE	Volume sides in the ACTIVE state. The volume has active (in-process or queued) requests.
/BRIEF	Volume identifier, name of the volume set that contains the volume, number of file extents on the volume side, and available space on the volume.
/DATE	Dates and times the volume side was initialized and last dismounted.
/DEACTIVATED	Volume sides that are marked deactivated.
/DIRECTORY=...	Volumes in the specified directory.
/DISABLED	Volume sides that are marked disabled.
/ENABLED	Volume sides that are not marked disabled.
/EXPIRED	Volume sides that are marked expired.
/EXTENTS	Number of file extents on the volume side.
/FREE_POOL=...	Volumes in the specified free pool of empty volumes in a library device.
/FULL	All available information for a volume.
/LOCATION=...	Volumes in the specified location.
/MEMO=...	Comment that a user added to the StorHouse system files (with the MOVE VOLUME, SET VOLUME, MOVE VSET, or SET VSET command) or all volumes with a specific comment.
/MOUNTS	Number of mount-dismount cycles for a volume side.
/NEEDS_CLEANING	Volume sides in the NEEDS_CLEANING state.
/PERM_LOCKED	Volume sides in the PERM_LOCKED state.
/PHYSICAL	Physical volumes rather than logical volumes (volume sides).
/RETIRE	Volume sides that should be retired, either because they are in the RETIRE state (media is degraded) or the volume mount count is exceeded.
/SITE_ID	Site identifier recorded in the volume label record on the volume.
/SPACE	Amount of writable space on a volume side.
/STATE	State of the volume side and the date the volume's state was last changed.
/SYSTEM_ID	System identifier recorded in the volume label record on the volume.
/VSET=...	Volumes that make up the specified volume set.
/WRITELOCKED	Volume sides with the writelocked attribute.

You must have SHOW, ALLOCATION, or SYSTEM privilege to use SHOW VOLUME. The vid parameter is required.

▼ **To display information on a StorHouse volume**

1. Sign on to StorHouse.

2. At the StorHouse command prompt (?), type the following command and press Enter↵:

   SHOW VOLUME vid modifiers

   where vid is the name of the volume(s) and modifiers are other parameter modifiers you use to assign values other than the defaults. Below are some examples:

   – To display basic information for side A of volume OAD242F38AD, enter:

     ? SHOW VOLUME OAD242F38AD:A

     The system displays the following information:

     OAD“242F38AD”:A VSET=ACCTS00 EXTENTS=3
     WRITABLE_SPACE=10224KB

   – To display information for volumes in the free pool in library device 0 for media and recording type OAD, enter:

     ? SHOW VOLUME * /FREE_POOL=L00OAD

     The system displays the following information:

     OAD“244A351B”:A VSET=.L00OAD EXTENTS=0 WRITABLE_SPACE=3504900KB
     OAD“244A351B”:B VSET=.L00OAD EXTENTS=0 WRITABLE_SPACE=3504900KB

     OAD“25684712”:A VSET=.L00OAD EXTENTS=0 WRITABLE_SPACE=3504900KB
     OAD“25684712”:B VSET=.L00OAD EXTENTS=0 WRITABLE_SPACE=3504900KB

     OAD“2E3268C1”:A VSET=.L00OAD EXTENTS=0 WRITABLE_SPACE=3504900KB
     OAD“2E3268C1”:B VSET=.L00OAD EXTENTS=0 WRITABLE_SPACE=3504900KB

     Total volume sides displayed=6

   – To display the number of mount-dismount cycles for side A of volume OAD242F38AD, enter:

     ? SHOW VOLUME OAD242F38AD:A /NOBRIEF /MOUNTS

The system displays the following information:

```
OAD“242F38AD”:A MOUNTS=0
```

– To display the memo for the volume OAD242F38AD, enter:

```
? SHOW VOLUME OAD242F38AD:A /MEMO
```

The system displays the memo for this volume:

```
OAD“242F38AD”:A VSET=MAR00 EXTENTS=0
WRITABLE_SPACE=10229KB MEMO=“Rack 3 Slot 11”
```

– To list all volumes that have the words “Rack 3” in the memo, enter:

```
? SHOW VOLUME * /MEMO=“*Rack 3*”
```

The system displays the list of volumes:

```
OAD“2DC11832”:A VSET=MAR00 EXTENTS=2559
WRITABLE_SPACE=14302KB MEMO=“Rack 3 Slot 11”
OAD“2DC11832”:B VSET=MAR00 EXTENTS=1811
WRITABLE_SPACE=37097KB MEMO=“Rack 3 Slot 11”

OAD“2DE4D5C5”:A VSET=MAR00 EXTENTS=1154
WRITABLE_SPACE=34319KB MEMO=“Room 2 Rack 3 Slot 14”
OAD“2DE4D5C5”:B VSET=MAR00 EXTENTS=1126
WRITABLE_SPACE=34063KB MEMO=“Room 2 Rack 3 Slot 14”

Total volume sides displayed=4
```

– To display all available information for the volumes in volume set ACCTS00, enter:

```
? SHOW VOLUME * /VSET=ACCTS00 /FULL
```

The system displays the following information:

```
OAD“242F38AD”:A VSET=ACCTS00 LOCATION=L00
STATE=(INITIALIZED) STATE_CHANGED=28-JAN-2000:08:04:29
SYSTEM_ID=123456 SITE_ID=FILETEK INITIALIZED=01-JAN-
2000:07:48:19 LAST_DISMOUNT=31-JAN-2000:00:00:00
CREATED=01-JAN-2000:07:54:07 MODIFIED=29-JAN-2000:19:07:14
FIRST=01-JAN-2000:07:54:27 LAST=29-JAN-2000:19:03:26 CYCLE=0
DEACTIVATE=0 EXPIRE=0 EXTENTS=3 MOUNTS=2
WRITABLE_SPACE=10224KB GENERAL_FREE=8375KB
GENERAL_ALLOCATED=1854KB MEMO=“Rack 3 Slot 11”
HOLD=NOHOLD
```

```
OAD“242F38AD”:B VSET=ACCTS00 LOCATION=L00
STATE=(INITIALIZED) STATE_CHANGED=28-JAN-2000:07:48:23
SYSTEM_ID=123456 SITE_ID=FILETEK INITIALIZED=01-JAN-
2000:07:48:23 LAST_DISMOUNT=28-JAN-2000:08:04:29
CREATED=01-JAN-2000:07:54:08 MODIFIED=28-JAN-2000:07:54:08
FIRST=01-JAN-2000:00:00:00 LAST=31-JAN-2000:00:00:00 CYCLE=0
DEACTIVATE=0 EXPIRE=0 EXTENTS=0 MOUNTS=1
WRITABLE_SPACE=10229KB GENERAL_FREE=10229KB
GENERAL_ALLOCATED=0KB MEMO=“Rack 3 Slot 11”
HOLD=NOHOLD

Total volume sides displayed=2
```

– To display all volumes that need to be loaded from shelf to satisfy pending requests, enter:

```
? SHOW VOLUME * /PHYSICAL /NOBRIEF /ACTIVE /LOCATION=S
```

The system displays:

```
OAB“C0000002”
OAB“C0000006”

Total physical volumes displayed=2
```

Chapter 6

Working with the System

StorHouse provides the following Command Language commands to help you control and monitor system activity:

- MESSAGE
- MONITOR
- RESERVE SYSTEM
- RUN
- SHUTDOWN.

Sending User Messages

MESSAGE sends a message to a user, the operator at the StorHouse console, or the administration log. In addition, it adds or removes text from the system welcome message.

The following table defines the modifiers you can use with MESSAGE:

Modifier	Description
/BELL	Indicates that the bell on the receiving terminal will ring when the terminal receives the message.
/CANCEL	Instructs the system to remove text from the StorHouse welcome message that was previously added using /SYSTEM.
/LOG	Instructs the system to record the text in the StorHouse administration log.
/OPERATOR	Instructs the system to display the text on the StorHouse operator's console and in the message queue of all console-enabled terminals. /OPERATOR is the default if you do not use another modifier to specify a destination.
/SYSTEM	Instructs the system to replace the text in the StorHouse welcome message.
/UID=...	Specifies the user identification code(s) of the user(s) who will receive the message.

You must have MESSAGE privilege to use the MESSAGE command.

▼ **To send a message to the StorHouse operator console, the administration log, or to another user, or to change the system welcome message**

1. Sign on to StorHouse.

2. At the StorHouse command prompt (?), type the following command and press [Enter↵]:

   MESSAGE “text” modifiers

   where text is the contents of the message and modifiers are other command modifiers you use to assign values other than the defaults. Some examples follow:

   – To replace the system welcome message with the text “StorHouse will be down this weekend,” enter:

     ? MESSAGE /SYSTEM “StorHouse will be down this weekend”

   – To delete the text from the welcome message, enter:

     ? MESSAGE /CANCEL

   – To send the message “Shut down the system at 4 pm” to the message queues of all console-enabled terminals and to the user with a uid of 3, sound the bell at terminals receiving the message, and enter the message in the administration log, enter:

     ? MESSAGE /UID=3 /OPERATOR /LOG /BELL “Shut down the system at 4 pm”

   – To send the message “The system will be shut down for 15 minutes at 5 pm today” to all interactive users currently signed on, enter:

     ? MESSAGE /UID=* “The system will be shut down for 15 minutes at 5 pm today”

Monitoring System Performance

MONITOR lets you monitor system performance. With MONITOR, you can display current system command, drive, library, network, performance, storage, usage, and volume statistics. Times are given in seconds and sizes in 1000-byte units, unless otherwise specified. If you do not specify any modifier on the MONITOR command, performance statistics display by default.

The following table defines the modifiers you can use with the MONITOR command:

Modifier	Description	Default
/ALL	Displays all current statistics.	-
/COMMAND	Displays statistics for commands that have been entered in addition to any other selected statistics. Also displays whether a BACKUP or MIGRATE operation is in progress.	-
/CONTINUOUS=...	Displays continuous updates of statistics.	-
/DRIVE	Displays statistics for each library device drive, in addition to any other selected statistics.	-
/INTERVAL=...	Displays each selected set of statistics for the number of seconds specified by the /INTERVAL modifier.	Displays each set of statistics for 10 seconds
/LIBRARY	Displays statistics for each library device, in addition to any other selected statistics.	-
/NETWORK	Displays network statistics for each active StorHouse network connection, in addition to any other selected statistics.	-
/PERFORMANCE	Displays performance statistics for major commands, such as the GET and PUT commands, in addition to any other selected statistics.	Displays if no other selection modifiers are specified.
/RESET	Initializes the statistics data bases.	-
/STORAGE	Displays storage statistics for levels of storage in addition to any other selected statistics.	-
/USAGE	Displays system usage statistics including CPU usage, library and drive usage, volume usage, and directory usage, in addition to any other selected statistics.	-
/VOLUME	Displays volume-related statistics, in addition to any other selected statistics.	-

You must have SHOW privilege to use the MONITOR command and SYSTEM privilege to use the /RESET modifier.

▼ **To display current StorHouse statistics**

1. Sign on to StorHouse.
2. At the StorHouse command prompt (?), type the following command and press Enter↵:

   MONITOR modifiers

where modifiers are other command modifiers you use to assign values other than the defaults. Some examples follow.

– To display sets of all current StorHouse command, drive, library, network, performance, storage, system usage, and volume statistics, type:

  ? MONITOR /ALL /INTERVAL=0

– To display system usage statistics, type:

  ? MONITOR /USAGE

– To display storage statistics for all levels of storage, type:

  ? MONITOR /STORAGE

Reserving the System for Maintenance

RESERVE SYSTEM reserves the StorHouse system for use by one account, typically for maintenance. StorHouse does not terminate the sessions of users who are already signed on when you execute the command. You can enter an optional text message to send to users who attempt to sign on with another account when the system is reserved.

You can cancel the reservation of the system and allow users of other accounts to sign on using the /CANCEL modifier. As with the RESERVE SYSTEM command, the RESERVE SYSTEM /CANCEL command does not affect the sessions of users who are already signed on.

You must have OPERATOR or SYSTEM privilege to use RESERVE SYSTEM.

▼ **To reserve the StorHouse system for your account**

1. Sign on to StorHouse.

2. At the StorHouse command prompt (?), type the following command and press [Enter ↵]:

   RESERVE SYSTEM <“text”>

   where text is optional message text. An example follows.

   – To reserve the StorHouse system for your account and enter the text message “StorHouse is reserved for maintenance,” enter:

     ? RESERVE SYSTEM “StorHouse is reserved for maintenance”

▼ **To cancel the reservation of the StorHouse system for your account**

1. Sign on to StorHouse.
2. At the StorHouse command prompt (?), type the following command and press Enter↵:

   RESERVE SYSTEM /CANCEL

Executing StorHouse Procedures

RUN executes procedures that have been installed on StorHouse, usually by FileTek Customer Support. Typical procedures include those that generate and retrieve StorHouse reports or run StorHouse utilities. You can schedule RUN using the SCHEDULE command. You must have SYSTEM or OPERATOR or SERVICE privilege to use the RUN command.

The following table defines the modifiers you can use with the RUN command:

Modifier	Description
procedure	Specifies the name of the procedure you want to run.
parameter	Specifies the parameter(s) for the procedure you want to run.

Contact your FileTek customer support representative for examples on running procedures.

Shutting Down the System

SHUTDOWN shuts down the StorHouse software. As it initiates the shutdown, the command notifies users that the system is shutting down and stops the StorHouse software in a controlled manner.

In a controlled shutdown, StorHouse allows all existing user commands and scheduled events to complete before the shutdown begins. It allows background functions, such as backup and migration functions, to complete their current file transfer or similar activity, but it does not allow them to initiate new activities. It allows users to sign off, but does not allow users (other than the initiator of the SHUTDOWN command) to enter new commands. After all commands and events have completed, the system software performs housekeeping tasks and then stops.

The following table defines the modifiers you can use with SHUTDOWN:

Modifier	Description	Default
/CANCEL	Terminates a delayed shutdown (if you specified /DELAY with a time) that was previously initiated.	-
/CONFIRM	Controls whether StorHouse asks you to confirm the command.	/CONFIRM
/DELAY=...	Specifies the amount of time (in minutes) that the system will wait before starting the shutdown procedure.	/DELAY=0
/NOW	Terminates all activity immediately.	-
/TIMEOUT=...	Specifies the maximum number of minutes the system will wait, after any /DELAY has expired, for all user activity to complete before aborting any remaining transactions.	/TIMEOUT=1440

Note The SHUTDOWN /CANCEL command does not terminate the shutdown if you issued SHUTDOWN without a /DELAY period, or if the delay period has expired.

You must have OPERATOR privilege to use the SHUTDOWN command.

▼ **To shut down the StorHouse software**

1. Sign on to StorHouse.

2. At the StorHouse command prompt (?), type the following command and press Enter↵:

   SHUTDOWN <“message”> modifiers

   where message is an optional message to notify users of the shutdown and modifiers are other command modifiers you use to assign values other than the defaults. Examples follow:

   – To shut down StorHouse immediately, enter:

     ? SHUTDOWN /NOW

   – To notify all users that StorHouse will shut down, delay the shutdown 10 minutes, and enter a timeout period of 30 minutes, enter:

     ? SHUTDOWN “StorHouse is shutting down” /DELAY=10 /TIMEOUT=30

   – To cancel the StorHouse SHUTDOWN at any time during the delay period, enter:

     ? SHUTDOWN /CANCEL

Chapter

7

Working with Operator Messages

StorHouse sends operator messages to inform you about system operation. For example, operator messages may report on an event (a successful checkpoint) or notify you to take a specific action (load a blank cartridge). You must know how to read and respond to operator messages as part of your primary job responsibility.

This chapter introduces operator message concepts and explains how to read and reply to operator messages.

About Operator Messages

StorHouse generates three types of operator messages:

- *Informational* messages report on the status of an event (for example, a successful library rebuild).
- *Operator request* messages ask you to take a specific action like move a volume from a library device to shelf storage or load a blank cartridge.
- *Error* messages inform you that an error occurred during system operation.

Status and Severity Codes

Each operator message has a status code and a severity code. Status codes identify operator messages, and severity codes classify them. Appendix A, “Operator Messages,” lists all operator messages alphabetically by status code and defines the variables that can appear in the message text. Operator message severity codes are listed in the following table.

Table 7-1: Operator Message Severity Codes

Code	Definition	Description
A	Action	You must take action, such as load a blank cartridge into the library device.
E	Error	The event ended with an error, but the system may continue processing.
F	Fatal error	The system cannot continue processing.
I	Information	The system returns information to you.
S	Success	The event completed successfully.
W	Warning	The event did not complete successfully, although it may have partially completed.

Message Formats

Informational and error messages have the following format:

status_code (severity_code) message_text

For example, in the following informational message, the components are listed below:

XSORSAT (I) REQUEST SATISFIED

Message Component	Definition
XSORSAT	StorHouse status code
I	StorHouse severity code
REQUEST SATISFIED	StorHouse message text

Request messages have two additional fields, message_reply_number and reply_text:

message_reply_number (severity_code) status_code message_text reply_text

In the following request message, the components are listed below:

0001 (A) XROLDB LOAD-BLANK L00E00, LABEL VOLUME AS OAD“253EFD2D”, REPLY ‘C’-CONTINUE ‘E’-ERROR

Message Component	Definition
0001	StorHouse message reply number
A	StorHouse severity code
XROLDB	StorHouse status code
LOAD-BLANK L00E00, LABEL VOLUME AS OAD“253EFD2D”	StorHouse message text
REPLY ‘C’ - CONTINUE ‘E’ - ERROR	StorHouse reply text

Message Queuing

StorHouse displays operator messages automatically on the StorHouse console and the IBM host console. For ease of operation, you can view messages directly on those console screens. In addition, StorHouse activates a message queue for user sessions that are console-enabled and begins accumulating operator messages there. Once your user session is console-enabled, you can read operator messages in your queue when you are signed on to StorHouse from a user terminal or the StorHouse console.

StorHouse does not create message queues for users who are signed on to StorHouse from the IBM host console. See “Replying to StorHouse Operator Messages from an MVS Host Console” on page 8-7 for information about accessing StorHouse operator messages from that location.

Enabling Message Queuing

To console-enable your user session, you must submit the StorHouse Command Language SET USER /CONSOLE command during that session. You must have CONSOLE privilege to use this command. For a full description of the SET USER command, see the *Command Language Reference Manual*.

Once you execute SET USER /CONSOLE, you can access your message queue to read operator messages. You do not need to be console-enabled to reply to operator messages.

▼ **To enable a user session for operator message queuing**

1. Sign on to StorHouse.

2. At the StorHouse command prompt (?), type the following command and press [Enter ↵]:

   SET USER /CONSOLE

Disabling Message Queuing

When you disable operator message queuing, StorHouse no longer maintains a message queue for your user session. This means that you can no longer read operator messages from a user terminal. You disable operator message queuing with the SET USER /NOCONSOLE command.

▼ **To disable a user session for operator message queuing**

While signed on to StorHouse, type the following command at the StorHouse command prompt (?) and press Enter↵:

```
SET USER /NOCONSOLE
```

Using the CONSOLE Command

The CONSOLE command lets you read and reply to StorHouse operator messages when you are signed on to StorHouse from the StorHouse console or a user terminal. You do not use the CONSOLE command to read and reply to messages from the IBM host console. See "Replying to StorHouse Operator Messages from an MVS Host Console" on page 8-7 for information about accessing messages from the IBM host console.

The following table defines the modifiers you can use with CONSOLE:

Modifier	Description
/ALL	Displays all queued operator messages. Any messages that were previously displayed but still require a response are displayed again. If no messages are queued, the command returns the ? prompt.
/READ=...	Displays the next queued operator message and specifies an optional timeout value if no messages are queued. The default timeout value is 0. When /READ is used with a timeout value, the command waits the specified number of seconds (the timeout) if there are no queued messages. If StorHouse queues a message during the timeout period, the command immediately displays the message and returns a successful response (the ? prompt). If no message is queued during the timeout, the command returns the ? prompt at the end of the timeout period.

Modifier	Description
/REPLY=...	Sends a response to a StorHouse operator request message. You must specify the reply text and the identification number of the request with /REPLY.
text	Provides text for use with the /REPLY modifier. Depending on the message, valid reply text can be: • C (for CONTINUE) • E (for ERROR) • L (for LIST) • N (for NO MORE) • W (for WIPED) Appendix A, "Operator Messages," defines the valid replies for each operator message.

If you omit modifiers with CONSOLE, then StorHouse displays the next queued message (if any) for you to read.

You must have CONSOLE privilege to use the CONSOLE command, and OPERATOR privilege to use the /REPLY modifier.

Reading Operator Messages in Your Message Queue

You use the CONSOLE command to read queued operator messages from a user terminal and to periodically clear your message queue when you are signed onto StorHouse from the StorHouse console. Use the CONSOLE /READ command to read the next queued message and the CONSOLE /ALL command to read all queued messages. Remember that you must be console-enabled to read messages in your message queue.

▼ **To read the next queued operator message**

1. Sign on to StorHouse.

2. At the StorHouse command prompt (?), type the following command and press Enter↵:

   CONSOLE
   or
   CONSOLE /READ
   or
   CONSOLE /READ=number_of_seconds

   where number_of_seconds can include any integer from 0 to 2147483647, inclusive. Examples follow.

– To display the next queued message, enter:

```
? CONSOLE
or
? CONSOLE /READ
```

– To specify a timeout value of 90 seconds for /READ, enter:

```
? CONSOLE /READ=90
```

The CONSOLE /ALL command reads all queued messages, which include new messages as well as messages that have outstanding requests.

▼ **To read all queued messages**

At the StorHouse command prompt (?), type the following command and press Enter↵:

```
CONSOLE /ALL
```

Clearing Your Message Queue

StorHouse accumulates messages in the message queues of all console-enabled users. Some messages require a reply; others do not. When you read a non-reply message, StorHouse automatically deletes it from your message queue. When you read a reply message, StorHouse retains that message in all message queues until you or another console-enabled user responds to it. Then it deletes the satisfied message from the message queues of all console-enabled users.

For example, if 10 users are console-enabled and StorHouse requests the loading of a blank volume, the XROLDB LOAD-BLANK message appears in 10 message queues. When one user replies to the XROLDB request, StorHouse removes that message from the responder's message queue. It also removes the XROLDB request from the message queues of the other nine console-enabled users and replaces it with the following message:

```
0002 XSORSAT REQUEST SATISFIED
```

The number 0002 is the reply number of the satisfied XROLDB message. The XSORSAT status code indicates that a user responded to message number 2.

Special Considerations for the StorHouse Console

Message queues clear automatically when console-enabled users sign off StorHouse. However, as system operator, you are typically signed on to StorHouse from the StorHouse console 24 hours a day, seven days a week. In addition, because you normally view messages on the console screen rather than read them from your message queue, non-reply messages can accumulate in your queue indefinitely.

To keep the size of your message queue manageable, FileTek recommends that you periodically execute CONSOLE /ALL at the StorHouse console to read and subsequently remove all non-reply messages from your queue.

▼ **To clear the operator message queue at the StorHouse console of all non-reply messages**

At the StorHouse command prompt (?), type the following command and press Enter↵:

CONSOLE /ALL

Replying to Operator Messages

You use different procedures to reply to operator request messages depending on your location. The following sections explain how to reply to messages from the IBM host console, the StorHouse console, and a console-enabled user session at a user terminal.

Replying to StorHouse Operator Messages from an MVS Host Console

The MVS host console can be automatically signed on to StorHouse through the message monitoring subtask in the MVS subsystem. StorHouse messages appear and scroll automatically on the MVS host console screen. Operator messages that require a reply cannot be deleted. That is, they “stick” to the screen in highlighted text until the MVS operator or another user replies to the request.

At the MVS host console, you can reply to StorHouse operator request messages by using the standard IBM REPLY command as documented in the IBM manual *Operator’s Library: OS/VS2 MVS System Commands*. The MVS host console operator does not use the StorHouse Command Language CONSOLE command.

Message Example

This example illustrates how a StorHouse operator request message is typically displayed on an MVS host console screen and describes the procedure for replying to this message. Note that the third and fourth message fields are site-specific and may not all appear at your installation.

Assume that the following message appears on the MVS host console. It asks you to label a blank volume as OAD253EFD2D and load it into exchange station 00 of library device 00:

*11.30.22 STC 9147 *06 XIO170I LSMS DEFLT 0001 (A) XROLDB LOAD-BLANK *L00E00, LABEL VOLUME AS OAD“253EFD2D”, REPLY ‘C’-CONTINUE ‘E’- *ERROR

The message components are listed below, with values shown for the previous example.

Message Component	Description
11.30.22	Time of request
STC 9147	Started task number of the StorHouse subsystem
06	Identification number that you use in the MVS REPLY command to reply to this message request
XIO170I	StorHouse status code indicating that the text that follows is a StorHouse operator request message. This status code is always XIO170I.
LSMS	StorHouse subsystem name
DEFLT	StorHouse identification from configuration SM_NAME parameter. (See the *Host Software Installation and Operations Guide*.)
0001	StorHouse message reply number. You do not use this number when replying to an operator request message from an MVS host console.
A	StorHouse message severity code
XROLDB	StorHouse status code
LOAD-BLANK L00E00, LABEL VOLUME AS OAD “253EFD2D”	StorHouse operator request message text
REPLY ‘C’-CONTINUE ‘E’-ERROR	StorHouse reply text

Site-specific fields

▼ **To reply to this operator message**

Enter the MVS REPLY command using 6 as the message identification number, followed by a reply text of C or E.

Replying to StorHouse Operator Messages from the StorHouse Console or a User Terminal

You can reply to operator messages with the CONSOLE/REPLY command or with a shorthand notation that contains just the message reply number and the text.

▼ **To reply to an operator message at the StorHouse console or a user terminal**

1. Sign on to StorHouse.
2. At the StorHouse command prompt (?), type the following command and press Enter↵:

   CONSOLE /REPLY=identification_number text
   or
   identification_number text

   where identification_number is the number shown at the beginning of the request message and text is the text you specify.

The following section contains examples.

Message Examples

Assume the following message appears on the StorHouse console:

0001 (A) XROLDB LOAD-BLANK L00E00, LABEL VOLUME AS OAD“253EFD2D”, REPLY ‘C’-CONTINUE ‘E’-ERROR

This message asks you to label a non-prelabeled, blank volume as OAD253EFD2D and load it into exchange station 00 of library device 00.

The message components are listed below, with values shown for this example:

Message Component	Definition
0001	StorHouse message reply number. Use this number in the CONSOLE command as the reply identification number. (When you reply to this message, you can omit the leading zeros.)
A	StorHouse message severity code
XROLDB	StorHouse status code
LOAD-BLANK L00E00, LABEL VOLUME AS OAD“253EFD2D”	StorHouse operator request message text
REPLY ‘C’ - CONTINUE ‘E’ - ERROR	StorHouse reply text

▼ **To reply to this operator message**

1. Look up the StorHouse status code in Appendix A or in the *Messages and Codes Manual* and read the message description if you need more information.

2. For XROLDB, select a blank volume that is compatible with library device L00 and the specified media/recording type (in this case, OAD).

3. Write the volume identifier OAD253EFD2D on the cartridge label.

4. Insert the volume into exchange station L00E00.

5. Enter the following command:

   CONSOLE /REPLY=1 C
   or
   1 C

   Note that 1 is the StorHouse message reply number, and C is the reply text.

Invalid Message Reply Numbers

If you reply to a request and use an invalid message reply number in your response, the following message appears on your screen:

%SC-W-XSONOREQ, No request matches last operator reply; reply discarded. Invalid Reply Number.

To re-display the outstanding request messages and their message reply numbers, submit CONSOLE /ALL to read all messages in your queue.

Pending Requests

Once you have fulfilled the initial unload request for a volume, you may receive additional requests for that volume. StorHouse considers these additional requests as *pending* requests.

For example, the system administrator may execute a MOVE VOLUME command to move a cartridge from library device L00 to library device L01 to keep a volume handy. This command generates two operator request messages. First you receive a request to unload the cartridge from L00 to level S. Once you have unloaded the volume from library device L00, you receive a second message to load that volume into library device L01. This second message is the pending request.

Here are examples of the two messages you'll receive (note that you also receive an XROESL message for each volume you move):

```
(A) XROESL UNLOAD-SHELF L00E00, 1, TDA"010118", BB01P, PENDING
0003 (A) XROULS UNLOAD-SHELF L00E00, VOLUMES=1, REPLY 'C'-
CONTINUE 'L'-LIST

(A) XROESL LOAD-SHELF L01E00, TDA"010118", BB01P
0004 (A) XROLDS LOAD-SHELF L01E00, VOLUMES=1, REPLY 'C'-
CONTINUE 'E'-ERROR 'L'-LIST
```

Retrying Load and Unload Operations

StorHouse can detect a load (input) or unload (output) error while moving a cartridge between a library device and an exchange station. Input/output errors can occur after a load request or before an unload request.

When StorHouse detects an input/output error, it sends you an error message. If possible, the message describes the error condition and recommends operator action. In addition, the message directs you either to retry the failing operation or abort the retry request. For input errors, StorHouse does not repeat the original load request. For output errors, StorHouse does not issue the unload request until you correct the error.

If the retry is unsuccessful, StorHouse generates another error message. StorHouse repeats the error message/retry cycle until the retry is successful or until you abort the retry request.

For example, the following error message could appear after you attempted to load a blank volume:

```
0002 (A) XROERR L00E00, EXCHANGE STATION IS OPEN; CLOSE, THEN
REPLY ‘C’-CONTINUE ‘E’-ERROR
```

Appendix

A

Operator Messages

This appendix defines the operator message variables and then lists the StorHouse operator request messages in alphabetical order by status code.

Operator Message Variables

The most common variables displayed in operator message explanations are defined as follows:

- Fxx – Device identifier for the magnetic disk drive
- Lxx – Device identifier for the library device
- LxxAyy – Device identifier for the library device accessor

  Lxx = Device identifier for the library device
  Ayy = Device identifier for the accessor
- LxxDyy – Device identifier for the library device drive

  Lxx = Device identifier for the library device
  Dyy = Device identifier for the drive
- LxxEyy – Device identifier for the library device exchange station

  Lxx = Device identifier for the library device
  Eyy = Device identifier for the exchange station
- Lxxmmr – Free pool identifier for the library/media

  Lxx = Device identifier for the library device
  mmr = Media type and recording type for the media

- LxxSyyyy – Device identifier for the library device slot

  Lxx = Device identifier for the library device
  Syyyy = Device identifier for the slot

- mmr – Media type and recording type of the media

- n – Number of the specified item

- slot – Specific slot in a multivolume library exchange station. If your multivolume library exchange station slots are not numbered, this variable does not display in the message. In that case, be sure to load the exchange station from the top slot down. The multivolume station need not be full to complete an operation.

- Sxx – Shelf storage level identifier

- vid – Volume identification code assigned to the volume by StorHouse.

- vset_name – Volume set name assigned to the volume set.

StorHouse supplies values for xx, yy, mmr, yyyy, vid, and vset_name.

All request messages are preceded by an operator request number. These operator request numbers have been omitted in the following section.

Operator Messages (By Status Code)

This section explains each StorHouse operator message. For ease of reference, messages are organized in alphabetical order by status code. Brackets [ ] indicate that the enclosed text may or may not be displayed in the message. Message severity codes are not documented in this chapter.

XROESL messages refer to multivolume library exchange stations. When you are using multivolume stations, XROESL messages may precede XROLDS, XROULD, XROULE, XROULR, and XROULS messages. See each message type for more information. Also, responding to the XROLDS, XROULD, XROULE, XROULR, or XROULS message with “L” generates the list of XROESL messages and repeats the request.

Many of the following messages ask you to load, unload, or move a volume or to respond to an input/output error. All StorHouse messages are documented in the *Messages and Codes Manual* in the StorHouse User Document Set.

XDDISBADFID

XDDISBADFID, FILE CREATIONS DISABLED BECAUSE NEXT FILE ID (FID) LESS THAN EXISTING FID

The system has disabled creation of new StorHouse files because the current FID (that is, the FID that should have been assigned to the last file created) is less than the FID of an existing file. This can occur after certain StorHouse recovery or maintenance procedures if the value of the last FID assigned is not restored properly. Ask your system administrator to refer this problem to your FileTek customer support representative.

XDDISISRTFID

XDDISISRTFID, FILE CREATIONS DISABLED BECAUSE INSERTED FILE ID (FID) GREATER THAN EXISTING FID

The system has disabled creation of new StorHouse files because the current FID (that is, the FID that should have been assigned to the last file created) is less than the FID of a file that was just inserted into the directory (by way of a CATALOG command, for example). This can occur after certain StorHouse recovery or maintenance procedures if the value of the current FID is not restored properly. Ask your system administrator to refer this problem to your FileTek customer support representative.

XDFILECRENBL

XDFILECRENBL, FILE CREATIONS ENABLED

The system has enabled StorHouse file creations. The system disables file creations if it detects an invalid current StorHouse file identifier (FID). The system enables file creations when the FID is corrected. Files can now be created.

XDRDECCRDIS

XDRDECCRDIS, FILE CREATION(S) REJECTED BECAUSE FILE CREATIONS ARE DISABLED

The system has rejected one or more StorHouse file creations because file creations are disabled. This can occur after certain StorHouse recovery or maintenance procedures if the value of the current file identifier (FID) is not restored properly. Ask your system administrator to refer this problem to your FileTek customer support representative.

XQCHFAILED

XQCHFAILED, CALL HOME FAILED. PLEASE CONTACT YOUR CUSTOMER SUPPORT REPRESENTATIVE.

The Call Home facility failed. Ask your system administrator to refer this problem to your customer support representative.

XQCHI

XQCHI, CUSTOMER SUPPORT NOTIFICATION INITIATED THROUGH CALL HOME

The StorHouse software has detected a potential or actual problem and is attempting to notify FileTek customer support through the Call Home facility. No operator action is necessary.

XRBADVLPARAM XRBADVLPARAM, BAD VOLUME LABEL SYSTEM PARAMETER. <text>

StorHouse was unable to use a LABEL_MASK_media or LABEL_media system parameter to generate the next volume label. The LABEL_MASK_media parameter may contain an invalid label-formatting mask for the algorithm identified by the LABEL_ALG system parameter. The text provides a more specific reason for the failure or one of the system parameter names involved in the failure. StorHouse will be unable to generate volume labels for the media until the system administrator corrects the parameters.

XROERR XROERR LxxEyy, <error text>, THEN REPLY ‘C’-CONTINUE ‘E’-ERROR

StorHouse generates this error message when it detects an input/output error while moving a volume between a device and its exchange station.

Possible values for the error text parameter are:

Error Text	Action
EXCHANGE STATION IS BUSY; CHECK	Check to see why the exchange station is busy and clear the condition.
EXCHANGE STATION IS EMPTY; LOAD	For a single- or multivolume exchange station, check to see whether the volume was loaded into the correct exchange station. For a multivolume exchange station, check to see whether all volumes are in the correct slots (for example loaded from the top down).
EXCHANGE STATION IS FULL; EMPTY	For a single-volume exchange station, remove the volume. For a multivolume exchange station, remove the volume(s) from all slots.
EXCHANGE STATION IS OPEN; CLOSE	Close the exchange station door.
VOLUME INCORRECTLY LOADED; RELOAD	For a single-volume exchange station, reload the volume. (Volume may be loaded backwards.) For a multivolume exchange station, reload as many volumes as necessary to find the ones that were loaded incorrectly. (Volume or volumes may be loaded backwards or upside down.)

▼ **To reply to this message, follow these steps:**

1. Take the necessary action based on the <error text>.
2. Respond with the appropriate reply:

- If the error has been corrected, respond with C to continue/retry.

  If you reply with C and StorHouse still detects an error, it generates another error message. This cycle continues until you have either corrected the error and replied with C successfully or until you have replied with E to abort the request.

- If you cannot correct the error, reply with E to abort the request.

If an error persists or is severe, ask your system administrator to contact your FileTek customer support representative.

XROESL XROESL action LxxEyy[, slot], vid, vset_name[, memo][, PENDING] [, NEEDS_CLEANING]

XROESL messages identify each volume that StorHouse is handling through the specified slot in a multivolume library device exchange station. One or more XROESL messages precede each XROLDS, XROULD, XROULE, XROULR, and XROULS message. (There is one XROESL message for each volume.) See these messages for any required operator action.

Note that if your multivolume library exchange station slots are not numbered, slot does not display.

XROINFO XROINFO, ABORTED EXTENT, VOLUME=vid GROUP=groupname FILE=filename EXTENT=extent

This message appears during recovery to indicate that StorHouse aborted or lost power while the specified extent was being written. Inform the system administrator that the user must rewrite the extent.

XROINFO XROINFO, BLANK VOLUME LOADS ENDED WITH n VOLUMES LEFT IN FREE POOL Lxxmmr

When directed to load a blank volume, you replied to either the XROLDB or XROLDP operator message with an E, terminating blank volume loads for free pool Lxxmmr. There are n volumes left in the free pool. If necessary, your system administrator can submit a MIGRATE /BLANKS command to restart blank volume loads.

XROINFO XROINFO, BLANK VOLUME LOADS SUSPENDED WITH n VOLUMES LEFT IN FREE POOL Lxxmmr

Blank volume loads for free pool Lxxmmr have been suspended due to the library device or one or more of its components going offline. Blank volume loads will resume when the appropriate devices are brought back online.

XROINFO XROINFO, BLANK VOLUME LOADS TERMINATED WITH n VOLUMES LEFT IN FREE POOL Lxxmmr

Blank volume loads for free pool Lxxmmr have been terminated due to an error. Ask your system administrator to contact your FileTek customer support representative.

XROINFO XROINFO, CLEANING CARTRIDGE EXPIRED, VOLUME=vid

The cleaning cartridge has expired and cannot be used to clean any more tape drives. No operator action is necessary. You will receive a message to unload and discard the cartridge when it is retired, which is site-dependent.

XROINFO XROINFO, device, DEVICE IS state[, mode]

where:

- device = Fxx, Lxx, LxxAyy, LxxDyy, LxxEyy, LxxSyyyy
- state = UP, COMING_UP, DOWN, GOING_DOWN
- mode = READ_ONLY, INITIALIZING, INITIALIZED, MAINTENANCE

This message indicates that the device is in the indicated state and, if applicable, the indicated mode.

If a library device (Lxx) is down due to an error, StorHouse automatically attempts to activate the Call Home error reporting facility. If any device is down, ask your system administrator to contact your FileTek customer support representative.

XROINFO XROINFO, EXCESSIVE MEDIA ERRORS--VOLUME HAS BEEN DISABLED, VOLUME=vid

The system has disabled the volume due to media errors and attempted to initiate Call Home error notification. Move the volume out of the library and inspect it for damage. If the volume is damaged, ask your system administrator to contact your FileTek customer support representative. If the volume is not damaged, clean the volume according to the instructions in your media vendor-supplied documentation.

After you have cleaned the volume, enable the volume using the SET VOLUME vid /ENABLE command and, if desired, move it back into the library. If the system disables the volume again, ask your system administrator to contact your FileTek customer support representative.

XROINFO XROINFO, EXCESSIVE MEDIA ERRORS--VOLUME HAS BEEN PERMANENTLY WRITELOCKED, VOLUME=vid

Due to excessive media errors, StorHouse permanently writelocked the volume (it is in the PERM_LOCKED state). No operator action is necessary.

XROINFO XROINFO, EXCESSIVE MEDIA ERRORS--VOLUME HAS BEEN WRITELOCKED, VOLUME=vid

Due to excessive media errors, StorHouse writelocked the volume (it is in the WRITELOCKED state). Ask your system administrator to call your FileTek customer support representative.

XROINFO XROINFO, EXCESSIVE MEDIA ERRORS--VOLUME NEEDS CLEANING, VOLUME=vid

For each optical media type, StorHouse defines the maximum number of times that StorHouse can skip defective areas on an optical disk surface. A portion of a volume surface may be defective because of dirt or media flaws. When an optical disk surface exceeds the designated number of defective areas, the system writelocks that surface and generates this message.

When you see this message, you should remove the specified volume (vid) from the library device and clean *both* volume sides, regardless of the side displayed in the operator message. Then (for Release 5.1 and all previous releases), execute SET VOLUME /CLEANED *once*, specifying the volume side indicated in the message. SET VOLUME /CLEANED unwritelocks a volume surface and resets the skip counter to 0.

The following response procedure has been streamlined for Releases 5.2 and above. However, these releases can still optionally use the previous response procedure, if desired.

▼ **To respond to this message (Release 5.1 and all previous releases), follow these steps:**

1. Execute the MOVE VOLUME command to move the indicated optical volume out of the library device to shelf storage. Your system administrator can use the StorHouse Command Language SCHEDULE command to execute MOVE VOLUME from the StorHouse console. SCHEDULE prevents conflicts with load and unload operator request messages.

   For example, if the vid in the XROINFO message is OEA“21C68147”:A, execute the command:

   ? SCHEDULE !MOVE VOLUME OEA21C68147 S00

   This command example assumes that volume OEA21C68147 resides in library device L00.

2. Clean *both* sides of the optical disk volume.

3. Execute SET VOLUME /CLEANED once to unwritelock the surface of the volume indicated in the message.

For example, after cleaning both sides of volume OEA21C68147, execute the following SET VOLUME command for side A:

```
? SET VOLUME OEA21C68147:A /CLEANED
```

This command automatically requests the operator to move the volume back into the library device.

4. FileTek recommends that you keep a log of volumes that have been cleaned.

Note: To ensure optimum performance, always clean both sides of the optical disk, regardless of the side specified in the operator message. Then execute the SET VOLUME /CLEANED command once for the side specified in the message.

▼ **To respond to this message (Release 5.2 and above), follow these steps:**

1. Execute the MOVE VOLUME command to move the indicated optical volume out of the library device to shelf storage. Your system administrator can use the StorHouse Command Language SCHEDULE command to execute MOVE VOLUME from the StorHouse console. SCHEDULE prevents conflicts with load and unload operator request messages.

   For example, if the vid in the XROINFO message is OEA“21C68147”:A, execute the command:

   ```
   ? SCHEDULE !MOVE VOLUME OEA21C68147 S00
   ```

   This command example assumes that volume OEA21C68147 resides in library device L00.

2. StorHouse displays an XROULS UNLOAD-SHELF message, which instructs you to unload the volume to shelf. You have the option to clean the volume now after you move it out of the library device or later when you move it back into a library device.

3. Clean *both* sides of the optical disk volume.

4. FileTek recommends that you keep a log of volumes that have been cleaned.

Note: To ensure optimum performance, always clean both sides of the optical disk, regardless of the side specified in the operator message.

XROINFO XROINFO, EXCESSIVE MEDIA ERRORS--VOLUME SHOULD BE RETIRED, VOLUME=vid

Excessive media errors were detected on the indicated volume. The volume has been permanently writelocked and should be retired (your system administrator can use the RETIRE VOLUME command).

XROINFO XROINFO, EXTENT WRITE-BACK DISABLED, GROUP=groupname FILE=filename EXTENT=extent FID=fid

This message appears when an error or an abort occurs while the system is trying to write-back an extent from the performance buffer to level L media. The system has used some of the space reserved on level L for the extent and needs to allocate more.

Report the error to your system administrator. The system administrator should execute the StorHouse Command Language ENABLE command so that more space can be allocated on level L for the specified file extent. Refer to the *Command Language Reference Manual* for a detailed explanation of the ENABLE command.

Note: Extents that are write-back disabled can still be read.

XROINFO XROINFO, FREE POOL VOLUMES (n) BELOW MINIMUM (n) FOR FREE POOL Lxxmmr

The number of blank volumes in free pool Lxxmmr is less than the minimum number allowed by the FREE_POOL_didmmr system parameter. Your system administrator might want to add blank volumes to the library device free pool until you reach or exceed the minimum number.

XROINFO XROINFO, Fxx, FATAL DEVICE ERROR

There is an unrecoverable error on magnetic disk drive Fxx. StorHouse shuts down the magnetic disk drive and generates the informational message: XROINFO, Fxx, DEVICE IS DOWN. Ask your system administrator to contact your FileTek customer support representative.

XROINFO XROINFO, Lxx, FATAL DEVICE ERROR

This message appears when there is an unrecoverable error on library device Lxx. The system shuts down the library device and generates the informational message: XROINFO, Lxx, DEVICE IS DOWN. Ask your system administrator to contact your FileTek customer support representative.

XROINFO XROINFO, Lxx, IMPORT OPERATIONS SUSPENDED FOR VSET vset_name

Import operations for the indicated volume set have been suspended due to library device Lxx or one or more of its components going offline. Import operations will resume when the appropriate devices are brought back online.

XROINFO XROINFO, Lxx, INVALID BAR CODES DETECTED ON n VOLUME(S)

This condition is detected when the library device is brought online (either at startup or with an UP DEVICE command). StorHouse automatically issues a Call Home notification to FileTek. Your FileTek customer support representative will resolve the problem; you do not need to take any action.

XROINFO XROINFO, Lxx, LIBRARY DEVICE OPERATION TOOK LONGER THAN EXPECTED

An operation(s) on library device Lxx took longer than expected. The library device continues to operate. Ask your system administrator to contact your FileTek customer support representative.

XROINFO XROINFO, Lxx, LIBRARY REBUILD CAN'T START--NO ONLINE DRIVES

During library initialization, StorHouse determined that library device Lxx requires a library rebuild. However, there are no online drives in the library.

At least one drive in the library must be brought online before attempting library initialization again.

XROINFO XROINFO, Lxx, LIBRARY REBUILD COMPLETED

During library initialization, StorHouse determined that library device Lxx requires a library rebuild. This message informs you that this process has completed successfully.

XROINFO XROINFO, Lxx, LIBRARY REBUILD FAILED

During a library rebuild, StorHouse encountered errors that prevented the library rebuild from completing on library Lxx. The system shuts down the library device, generates the informational message XROINFO, Lxx, DEVICE IS DOWN and automatically attempts to activate the Call Home error reporting facility.

XROINFO XROINFO, Lxx, LIBRARY REBUILD REQUIRED FOR n VOLUME(S)

During library initialization, StorHouse determined that library device Lxx requires a library rebuild. The system shuts down the library device and generates the informational message: XROINFO, Lxx, DEVICE IS DOWN.

Report this problem to your system administrator, who should ask a FileTek customer support representative to perform a library rebuild.

XROINFO XROINFO, Lxx, LIBRARY RECOVERY REQUIRED FOR n VOLUME(S)

During library initialization, StorHouse determined that library device Lxx requires directory recovery. The system brings the library to an UP state, but it cannot access one or more volumes. This message is normal during extended directory recovery. During normal operation, this message indicates a serious problem.

Report this problem to your system administrator, who should ask a FileTek customer support representative to perform a library recovery.

XROINFO XROINFO, Lxx, NO CLEANING CARTRIDGES ARE AVAILABLE

There are no cleaning cartridges available in library device Lxx. Your system administrator can migrate one or more blank cleaning cartridges into the library device using the MIGRATE /BLANKS command.

XROINFO XROINFO, Lxx, OPERATOR REFUSED RESET REQUEST

This message indicates that you refused a library reset request (in other words, you replied 'E' to the XRORST message). The system shuts down the library device and generates the informational message: XROINFO, Lxx, DEVICE IS DOWN.

XROINFO XROINFO, Lxx, SEVERE DEVICE ERROR

StorHouse determined that a library device error occurred.

- If this message appears during system initialization, the system shuts down the library device and generates the informational message: XROINFO, Lxx, DEVICE IS DOWN. For all libraries except tape libraries, press the RESET button on the library device control panel to manually reset the library device. For tape libraries, press the IPL button on the library device control panel to manually reset the library device. If the device has no RESET or IPL button, then power-cycle the device.

- If this message appears while the system is up, the system waits until all library device drives are inactive and issues a RESET LIBRARY request (see the XRORST message on page A-18). This may take several minutes.

  Note: Do not reset the library until StorHouse issues the RESET LIBRARY request.

XROINFO XROINFO, Lxx, STARTING LIBRARY REBUILD FOR n VOLUMES

During library initialization, StorHouse determined that library device Lxx requires a library rebuild. This message informs you that this process has started.

XROINFO XROINFO, Lxx, UNRECOVERED DEVICE ERROR

An operation(s) failed on library device Lxx. The device continues to operate. Ask your system administrator to contact your FileTek customer support representative.

XROINFO XROINFO, Lxx, VOLUME vid HAS BEEN MOVED TO THE FREE POOL

The system was instructed to export the specified volume. However, because the volume is an empty volume, the system moved it to the free pool in library device Lxx.

XROINFO XROINFO, LxxAyy, EXCESSIVE DEVICE ERRORS

After many tries, there is an unrecoverable error with accessor LxxAyy. The system stops using the accessor and generates the message XROINFO, LxxAyy, DEVICE IS DOWN. Ask your system administrator to contact your FileTek customer support representative.

XROINFO XROINFO, LxxDyy, DRIVE COULD NOT BE CLEANED, VOLUME=none

StorHouse was unable to clean tape drive LxxDyy and has taken the drive offline. Before the drive is brought back online, check that there are cleaning cartridges available in the library device. When the drive is brought back online, StorHouse will try to clean it again.

XROINFO XROINFO, LxxDyy, EARLIER DEVICE ERROR(S) CAUSED BY MEDIA, VOLUME=vid

The device error reported in a preceding message was caused by a problem with the media rather than a problem with the drive. The system restores drive LxxDyy to its original state. This message will likely be followed by other messages, depending on the subsequent actions performed by the system.

XROINFO XROINFO, LxxDyy, EXCESSIVE DEVICE ERRORS, VOLUME=vid

After many tries, there is an unrecoverable error on drive LxxDyy. The system shuts down the drive and generates the message XROINFO, LxxDyy, DEVICE IS DOWN. Ask your system administrator to contact your FileTek customer support representative.

XROINFO XROINFO, LxxDyy, EXCESSIVE WRITE ERRORS, VOLUME=vid

Excessive write errors were detected on the indicated volume. The problem is caused by drive LxxDyy. The volume is unaffected. The data transfer may or may not have completed. StorHouse automatically attempts to notify the Call Home error reporting facility.

After reporting the error, the system sets the drive to the read-only state and displays the XROINFO, LxxDyy, DEVICE IS UP, READ_ONLY operator message.

XROINFO XROINFO, LxxDyy, FATAL DEVICE ERROR, VOLUME=vid

This message appears when there is an unrecoverable error on drive LxxDyy caused by the drive or volume vid. The system shuts down the drive and generates the informational message: XROINFO, LxxDyy, DEVICE IS DOWN. Ask your system administrator to contact your FileTek customer support representative.

XROINFO XROINFO, LxxDyy, INACCESSIBLE VOLUME--VOLUME HAS BEEN DISABLED, VOLUME=vid

This message appears when a volume in the indicated drive is inaccessible due to a hardware problem. The system disabled the volume (both sides of a two-sided volume). Ask your system administrator to contact your FileTek customer support representative.

XROINFO XROINFO, LxxEyy, EXCESSIVE DEVICE ERRORS

After many tries, there is an unrecoverable error with exchange station LxxEyy. The system stops using the exchange station and generates the message XROINFO, LxxEyy, DEVICE IS DOWN. Ask your system administrator to contact your FileTek customer support representative.

XROINFO XROINFO, LxxSyyyy, EXCESSIVE DEVICE ERRORS

After many tries, there is an unrecoverable error with slot LxxSyyyy. The system stops using the slot. Ask your system administrator to contact your FileTek customer support representative.

XROINFO XROINFO, LxxSyyyy, SLOT IS DOWN AND CONTAINS UNKNOWN VOLUME

The indicated slot, LxxSyyyy, is down and contains an unknown volume. Ask your system administrator to contact your FileTek customer support representative.

XROINFO XROINFO, LxxSyyyy, SLOT IS DOWN AND CONTAINS VOLUME vid

The indicated slot, LxxSyyyy, is down and contains the volume vid. Ask your system administrator to contact your FileTek customer support representative.

XROINFO XROINFO, MIGRATION UNABLE TO FREE SPACE FOR QUEUED TRANSFERS

File transfers to the performance buffer are queued because a migration operation was unable to free space. StorHouse automatically attempts to activate the Call Home error reporting facility. Ask your system administrator to call your FileTek customer support representative.

XROINFO XROINFO, VOLUME IS WRITE-PROTECTED--VOLUME HAS BEEN WRITELOCKED, VOLUME=vid

StorHouse writelocked the volume to prevent any additional extents from being allocated to the volume. If the volume was accidentally write-protected, you can

unwrite-protect the volume (by adjusting the tab on the cartridge) and then unwritelock it using the SET VOLUME /UNWRITELOCK command.

XROINFO XROINFO, VOLUME RECOVERY FAILED--VOLUME HAS BEEN WRITELOCKED, VOLUME=vid

Volume recovery failed. The system prevents additional data from being written to the volume. Ask your system administrator to contact your FileTek customer support representative. If the problem occurs with several volumes in the same drive, the drive may need to be repaired or replaced. After the problem is resolved, you or your FileTek customer support representative can unwritelock the volume.

XROINFO XROINFO, VOLUME STRUCTURE ERROR--VOLUME HAS BEEN DISABLED, VOLUME=vid

StorHouse accessed a tape or optical disk whose volume structure is corrupted. StorHouse disables the volume and automatically issues a Call Home notification to FileTek. Your FileTek customer support representative will resolve the problem; you do not need to take any action.

XROINVRESP XROINVRESP device, INVALID RESPONSE; TO RETRY, REPLY 'C'-CONTINUE

StorHouse displays this message if you provide an invalid response to an operator request. The device from the original operator request displays to help identify the original request. When you reply with 'C', the original operator request displays in its entirety.

XROLDB XROLDB LOAD-BLANK LxxEyy, LABEL VOLUME AS vid, REPLY 'C'-CONTINUE 'E'-ERROR

Label a blank volume that is not prelabeled (in other words, an optical volume) and load it into a specific library device exchange station.

▼ **To reply to this message, follow these steps:**

1. Select a blank volume of the media/recording type specified in the vid.
2. Write the volume identifier vid on the optical cartridge label. No volume set name is given at this point. You will assign it later.
3. Ensure that the volume is not write-protected. (Check the write-protect tab on the cartridge. Two-sided media may have two tabs.)
4. Insert the volume into exchange station LxxEyy.
5. If the preceding steps were successful, reply with C to continue.

If an error occurs after you reply with C, StorHouse generates an error message. If possible, correct the error, and then reply with C to continue/retry the operation or with E to abort the request.

6. If the preceding steps were unsuccessful, reply with E to abort the request.

   A reply of E (for example, no blank volume is available), aborts the request.

XROLDI XROLDI LOAD-IMPORT LxxEyy, vset_name, REPLY ‘C’-CONTINUE ‘N’-NO MORE ‘E’- ERROR

or

XROLDI XROLDI LOAD-IMPORT LxxEyy, VOLUMES=n, vset_name, REPLY ‘C’-CONTINUE ‘N’-NO MORE ‘E’- ERROR

This message appears during an IMPORT operation. It prompts you to load the next volume (or as many of n volumes as there are slots available, if the library device has a multivolume exchange station) of an IMPORT volume set into a specific library device exchange station.

▼ **To reply to this message, follow these steps:**

1. Find the next volume(s) of the volume set vset_name. The volume must be compatible with library device Lxx.

2. Insert the volume(s) into library device exchange station LxxEyy.

3. If the preceding steps were successful, reply with C to continue.

4. If an error occurs after you reply with C, StorHouse displays an error message on the console. If possible, correct the error, and then reply with either C to continue/retry or with E to abort the retry request.

5. If you do not need to load any more volumes from the volume set, reply with the letter N for NO MORE.

6. If the preceding steps failed (for example, a required volume is missing), reply with E to abort the load request.

When loading volumes into a multivolume exchange station, you can load up to n volumes and reply C. Reply N if you do not want to load any more volumes. Reply E if there is a problem and you cannot load any volumes (for example, a volume’s protective case is cracked). If you loaded fewer than n volumes, you will be asked to load more volumes again (unless an error occurs). You can load volumes in any order, but you must load the volumes from the top slot downward.

XROLDP XROLDP LOAD-BLANK LxxEyy, MEDIA TYPE=mmr, REPLY ‘C’-CONTINUE ’E’-ERROR

or

XROLDP XROLDP LOAD-BLANK LxxEyy, VOLUMES=n, MEDIA TYPE=mmr, REPLY ‘C’-CONTINUE ’E’-ERROR

Load a blank prelabeled (bar-coded) volume (or volumes, if the library device has a multivolume exchange station) of a specific media type into a specified exchange station.

▼ **To reply to this message, follow these steps:**

1. Select a blank volume(s) of the specified media type.
2. Ensure that there is a bar code label on the cartridge(s).
3. Insert the volume(s) into exchange station LxxEyy.
4. If the preceding steps were successful, reply with C to continue.

   If an error occurs after you reply with C, StorHouse generates an error message. If possible, correct the error, and then reply with C to continue/retry the operation or with E to abort the request.
5. If the preceding steps were unsuccessful, reply with E to abort the request.

   A reply of E (for example, no blank volume is available), aborts the request.

For loading volumes into a multivolume exchange station, you can load up to n volumes and reply C, or just reply E if you do not want to load any blank volumes. If you loaded fewer than n volumes, you will be asked to load more volumes later (unless an error occurs). You can load volumes in any order, but you must load the volumes from the top slot downward.

XROLDS XROLDS LOAD-SHELF LxxEyy, vid, vset_name, [memo,][NEEDS_CLEANING,] REPLY ‘C’-CONTINUE ‘E’-ERROR ‘W’-WIPED

or

XROESL LOAD-SHELF LxxEyy, vid, vset_name[, memo][, NEEDS_CLEANING]

XROLDS LOAD-SHELF LxxEyy, VOLUMES=n, REPLY ‘C’-CONTINUE ‘E’-ERROR ‘L’-LIST ‘W’-WIPED

The XROESL message(s) identifies each volume that StorHouse is moving from shelf storage to the specified library device exchange station slot. The XROLDS message asks you to load a level S volume or volumes into a specific library device exchange station. To repeat the list of volumes, reply to XROLDS with ‘L’.

▼ **To reply to the XROLDS message, follow these steps:**

1. Find volume(s) vid of volume set(s) vset_name on level S storage.
2. If StorHouse notifies you to clean the volume(s) and you want to do so now, clean the volume(s). If StorHouse notifies you to clean the volume(s) but you want to clean them later, or if StorHouse does not notify you to clean the volume(s), proceed to step 3.
3. Insert the volume(s) into exchange station LxxEyy.
4. Reply with one of the following:
   - W after you complete the cleaning process.
   - C to continue if you want to clean the volume(s) later or if StorHouse did not notify you to clean the volume(s).
5. If an error occurs after you reply with C or W, StorHouse generates an error message. If possible, follow the directions in the error message, and then reply with either C to continue/retry or with E to abort the retry request.
6. If the preceding steps were unsuccessful (for example, you could not locate the level S volume), reply with E to abort the load request.

For loading volumes into a multivolume exchange station, you can load up to n volumes and reply C or W, or just reply E if there is a problem (for example, you cannot find the volumes). If you loaded fewer than n volumes, you will be asked to load more volumes later (unless an error occurs). You can load volumes in any order, but you must load the volumes from the top slot downward.

XROMVD XROMVD MOVE-DISCARD Sxx, vid, vset_name, [memo], REPLY ‘C’-CONTINUE ‘E’-ERROR

Move the used cleaning cartridge indicated in the message off shelf storage and discard it.

▼ To reply to this message, follow these steps:

1. Find volume vid of volume set vset_name on level S.
2. Discard the volume.
3. If the preceding steps were successful, reply with C to continue.
4. If the preceding steps were unsuccessful (for example, you could not find volume vid), reply with E to abort the request.

XROMVE XROMVE MOVE-EXPORT Sxx, vid, vset_name, [memo], REPLY 'C'-CONTINUE 'E'-ERROR

During an EXPORT operation, this message asks you to move a level S volume to an EXPORT volume set. The exported volume set is then stored in a location determined by the system administrator.

▼ To reply to this message, follow these steps:

1. Find volume vid of volume set vset_name on level S.
2. Include the volume in the EXPORT volume set.
3. If the preceding steps were successful, reply with C to continue.
4. If the preceding steps were unsuccessful (for example, you could not find volume vid), reply with E to abort the request.

XROPULL XROPULL PULL-VOLUME Lxx, vid, vset_name, [memo]

This message directs you to pull a cartridge from level S for subsequent loading into library device Lxx. Then, you will be ready to load the cartridge when the system issues the XROLDS LOAD-SHELF request for the volume.

XRORST XRORST RESET-LIBRARY Lxx, REPLY 'C'-CONTINUE 'E'-ERROR

This message asks you to reset library device Lxx. For all libraries except tape libraries, press the RESET button on the library device control panel to manually reset the library device. For tape libraries, press the IPL button on the library device control panel to manually reset the library device. If the device has no RESET or IPL button, power-cycle the device. Then, reply with C to continue library actions.

If you choose not to reset the library device, reply with E to abort the request. This causes the system to shut down the library device and to generate the informational messages: XROINFO, OPERATOR REFUSED RESET REQUEST and XROINFO, Lxx, DEVICE IS DOWN.

XROULD XROULD UNLOAD-DISCARD LxxEyy, vid, vset_name, [memo], REPLY 'C'-CONTINUE

or

XROESL UNLOAD-DISCARD LxxEyy, slot, vid, vset_name, [memo]

XROULD UNLOAD-DISCARD LxxEyy, VOLUMES=n, REPLY 'C'-CONTINUE 'L'-LIST

The XROESL message(s) identifies each volume that StorHouse is discarding from the specified library device exchange station slot. The XROULD message asks you to unload the indicated volume(s) from the exchange station of the

indicated library device and discard it (them). To repeat the list of volumes, reply to XROULD with 'L'.

▼ **To reply to the XROULD message, follow these steps:**

1. Remove the volume(s) from library device exchange station LxxEyy.
2. Discard the volume(s).
3. If the preceding steps were successful, reply with C to continue.

   If StorHouse detects an error while outputting a volume, you will receive an error message before you receive the actual unload request. Look up the specific error message code for more information.
4. If the preceding steps failed (for example, you could not open the exchange station door), ask your system administrator to contact your FileTek customer support representative.

XROULE

XROULE UNLOAD-EXPORT LxxEyy, vid, vset_name, [memo], REPLY 'C'-CONTINUE

or

XROESL UNLOAD-EXPORT LxxEyy, slot, vid, vset_name, [memo]

XROULE UNLOAD-EXPORT LxxEyy, VOLUMES=n, REPLY 'C'-CONTINUE 'L'-LIST

The XROESL message identifies each volume that StorHouse is exporting from the specified library device exchange station slot. The XROULE message asks you to unload the indicated volume(s) from the library device exchange station and include it (them) with a specific EXPORT volume set. The exported volume set is stored in a location determined by the system administrator. To repeat the list of volumes, reply to XROULE with 'L'.

▼ **To reply to the XROULE message, follow these steps:**

1. Remove the volume(s) from library device exchange station LxxEyy.
2. For optical media, check the external label on the cartridge. The volume identifier should be the value of the vid parameter. The volume set name should be the value of the vset_name parameter. You should replace the label immediately if it is missing, illegible, or incorrect.

   For tape media, be sure that the bar code label remains on the cartridge. (Do not write on the bar code label or cover it with any other label.)
3. Include the volume(s) in the EXPORT volume set named vset_name.
4. If the preceding steps were successful, reply with C to continue.

If StorHouse detects an error while outputting a volume, you will receive an error message before you receive the actual unload request. Look up the specific error message code for more information.

5. If the preceding steps failed (for example, you could not open the exchange station door), ask your system administrator to contact your FileTek customer support representative.

XROULM XROULM UNLOAD-MISC LxxEyy

This message asks you to unload a miscellaneous volume from a specific library device exchange station. It may appear during initialization of the library device. StorHouse cannot identify the volume in the library device exchange station. You must unload the volume; determine whether it belongs with the pool of blank volumes, on level S, in exported volume storage, or in removed volume storage; and store the volume appropriately.

▼ **To reply to this message, follow these steps:**

1. Unload the volume(s) from library device exchange station LxxEyy.

2. Determine where the volume(s) belongs, and store it (them) appropriately.

XROULR XROULR UNLOAD-REMOVE LxxEyy, <error text>, vid, vset_name, [memo], REPLY ‘C’-CONTINUE

or

XROESL UNLOAD-REMOVE LxxEyy, slot, <error text>, vid, vset_name, [memo]

XROULR UNLOAD-REMOVE LxxEyy, VOLUMES=n, REPLY ‘C’-CONTINUE ‘L’-LIST

The XROESL message identifies each volume(s) that StorHouse is removing from the specified library device exchange station slot. The XROULR message asks you to unload the indicated volume(s) from the library device exchange station and move it (them) to the appropriate storage location. To repeat the list of volumes, reply to XROULR with ‘L’.

For example, this message appears when a non-blank volume is loaded for MIGRATE /BLANKS. For IMPORT, the message appears when a volume from the wrong volume set is loaded.

Possible values for the error text parameter are:

Error Text	Action
BAR CODE NOT IN RANGE	Unload this volume and reload the expected one. The system displays the volume identification code (vid) or bar code of the volume actually loaded.

Error Text	Action
BLANK VOLUME	Unload this blank volume and load the correct volume.
CLEANING CARTRIDGE	Unload this cleaning cartridge and load the correct volume.
DAMAGED OR INCOMPATIBLE MEDIA	Check the volume for damage and ensure that you are loading it into a compatible library device. Check that you loaded the correct volume into the correct library device. Check that you did not load a 2.6-GB volume into a 7.0-GB drive. If you loaded the correct volume, try cleaning the volume. If you are loading blank volumes, try to load another volume(s).
DUPLICATE BAR CODE	Unload this volume and load a cartridge containing a different bar code.
EMPTY VOLUME	Unload this volume and load the correct volume.
ERROR INITIALIZING VOLUME	Unload this volume and load another blank volume. (Inspect the problem volume before using it again as a blank volume.)
INVALID BAR CODE	Unload this volume and load a cartridge containing a different bar code or fix the bar code and reload. (The bar code on the cartridge is missing, unreadable or upside down.)
NON-BLANK VOLUME	Unload this non-blank volume and load a blank volume.
UNPROCESSED BLANK VOLUME	Unload the unprocessed blank volume(s). An error occurred that prevented this volume(s) from being processed. Because the system did not format the volume(s), it is (they are) still blank. When the error is resolved, the system may ask you to reload it (them).
UNPROCESSED IMPORT VOLUME	Unload the unprocessed imported volumes. An error occurred that prevented these volumes from being processed. When the error is resolved, the system may ask you to reload them.
UNREADABLE VOLUME	Unload this volume and load the correct volume.
UNREQUESTED VOLUME	Unload the volume. You loaded more volumes for the input request than the system needed.
VOLUME ALREADY KNOWN	Unload this volume and load the correct volume. This volume is already known to the system, either because it has never been exported or because it has already been imported.
WRITE-PROTECTED VOLUME	Unload this volume and either write-enable and reload the volume, or load another blank volume.
WRONG MEDIA/ RECORDING TYPE	Unload this volume and load a volume of the correct media/recording type.
WRONG VOLUME	Unload this volume and reload the expected one. The system displays the volume identification code (vid) or bar code of the volume actually loaded.
WRONG VSET	Unload this volume and load the correct volume.

▼ **To reply to the XROULR message, follow these steps:**

1. Unload the volume(s) from library device exchange station LxxEyy.

2. For optical media, check the external label on the cartridge. The volume identifier should be the value of the vid parameter. The volume set name should be the value of the vset_name parameter. You should replace the label immediately if it is missing, illegible, or incorrect.

   For tape media, be sure that the bar code label remains on the cartridge. (Do not write on the bar code label or cover it with any other label.)

3. Store the volume(s) in the proper location.

4. If the preceding steps were successful, reply with C to continue.

   If StorHouse detects an error while outputting a volume(s), you will receive an error message before you receive the actual unload request. Look up the specific error message code for more information.

5. If the preceding steps failed (for example, you could not open the exchange station door), ask your system administrator to contact your FileTek customer support representative.

XROULS

XROULS UNLOAD-SHELF LxxEyy, vid, vset_name, [memo,] [PENDING,][NEEDS_CLEANING,]REPLY ‘C’-CONTINUE ‘W’-WIPE

or

XROESL UNLOAD-SHELF LxxEyy, slot, vid, vset_name[, memo][, PENDING] [, NEEDS_CLEANING]

XROULS UNLOAD-SHELF LxxEyy, VOLUMES=n, REPLY ‘C’-CONTINUE ‘L’-LIST ‘W’-WIPE

The XROESL message identifies each volume that StorHouse is moving from the specified library device exchange station slot to shelf storage. The XROULS message asks you to unload the indicated volume(s) from the library device exchange station and move it (them) to level S. To repeat the list of volumes, reply to XROULS with ‘L’.

The brackets [ ] indicate that the word PENDING may or may not display in this message. If PENDING displays, the message also indicates that there are subsequent pending requests for the specified volume. PENDING displays when a MOVE VOLUME or a MOVE VSET command requires a volume to be moved to another library device. The volume is unloaded temporarily until you receive a message to load the volume into another library device.

▼ **To reply to the XROULS message, follow these steps:**

1. Remove the volume(s) from library device exchange station LxxEyy.

2. For optical media, check the external label on the cartridge. The volume identifier should be the value of the vid parameter. The volume set name should be the value of the vset_name parameter. You should replace the label immediately if it is missing, illegible, or incorrect.

   Note: If the volume set name in the message is in the form .Lxxmmr, the volume is a member of the library device's free pool volume set. In this case, do not write the volume set name on the label. Whenever someone allocates the volume to another volume set, write the name of the new volume set on the label.

   For tape media, be sure that the bar code label remains on the cartridge. (Do not write on the bar code label or cover it with any other label.)

3. If the word PENDING does *not* appear in the message, move the volume to level S (assuming you're not going to clean it now). If the word PENDING *does* appear, then other requests are pending for that volume. Store the volume nearby as you will need convenient access to it in order to fulfill the pending requests.

4. If the preceding steps were successful and StorHouse notifies you to clean the volume(s), either clean the volume(s) now and reply with W after you complete the cleaning process, or reply with C to continue if you want to clean the volume(s) later.

   If StorHouse does not notify you to clean the volume(s), reply with C to continue.

5. If StorHouse detects an error while outputting a volume, you will receive an error message before you receive the actual unload request. Look up the specific error message code for more information.

6. If the preceding steps failed (for example, you could not open the exchange station door), ask your system administrator to contact your FileTek customer support representative.

XRVLOVRFLW XRVLOVRFLW, VOLUME LABEL RANGE OVERFLOW

StorHouse generated the volume label to assign to the next blank volume and exceeded the maximum label value. This caused the system to assign to the LABEL_media system parameter the lowest value allowed by the LABEL_MASK_media system parameter. The system administrator must change the LABEL_media and/or LABEL_MASK_media system parameter values to designate a new range of unused volume labels. Otherwise, the

system will continue to generate new labels based on the new value of the LABEL_media system parameter.

XSCPLDIS XSCPLDIS, CHECKPOINT LOGGING DISABLED

An error occurred when the system attempted to write the checkpoint log file. Correct the problem and ask your system administrator to take a new checkpoint. Until then, if a checkpoint recovery is required, some user transactions may not be recoverable.

XSCPSUC XSCPSUC, SUCCESSFUL CHECKPOINT yyyymmddhhmmss IS LOCATED ON VOLUME(S):

The indicated checkpoint was taken successfully. A list of the volumes containing the checkpoint data for this checkpoint follows in subsequent messages. You should record the checkpoint ID and volume IDs in the event that recovery from this checkpoint is required.

XSCPVOLS XSCPVOLS, vid vid vid vid

This message lists the volumes that contain checkpoint data for the checkpoint that just completed. You should record the volume IDs in the event that recovery from this checkpoint is required. A maximum of four volume IDs are listed per message. If more than four volumes were required for the checkpoint, there will be multiple XSCPVOLS messages.

XSDISKLO XSDISKLO, CRITICAL DISK SPACE SHORTAGE, SYSTEM COULD FAIL

Magnetic disk space is critically low. Ask your system administrator to call your FileTek customer support representative.

XSORSAT XSORSAT REQUEST SATISFIED

This message appears in a user's message queue if an operator request message was satisfied by another user.

XSWFDSBL XSWFDSBL, CHECKPOINT WORK FILE DISABLED

The work file for the SCHKP process could not be read or written. StorHouse continues to write to the checkpoint log file. A possible cause of the problem is insufficient disk space. Ask your system administrator to contact your FileTek customer support representative.

XWPABORT XWPABORT, PROCESS ABORTED

The process aborted. Contact your system administrator.

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