

900 Series HP 3000 Computer Systems
Installing and Using the
Optical Disk Library System



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Printing History

The following table lists the printing editions and dates of this document, together with the respective release dates for each edition. The software version indicates the version of the software product at the time this document was issued. Many product releases do not require changes to the document. Therefore, do not expect a one-to-one correspondence between product releases and document editions.

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Preface

Installing and Using the Optical Disk Library System is a procedural manual that enables Hewlett-Packard Customer Engineers to install the system and also enables customers to operate the system. The reader of this manual should understand how to configure devices that run in the MPE XL operating system environment.

This manual is organized as follows:

- Chapter 1** **Product Overview** provides general information about Model 20GB/A hardware, software, and operation components.
- Chapter 2** **Installing the Model 20GB/A** provides complete procedures for a Hewlett-Packard customer engineer to install the Model 20GB/A in the MPE XL operating system and then to transfer operational responsibilities to a system administrator.
- Chapter 3** **Managing Disks in the Model 20GB/A** provides information from a system administrator's perspective about managing magneto-optical disks in the device.
- Chapter 4** **Magneto-Optical Utility (MOUTIL)** provides command reference information for customer engineers or customer operators to effectively use all of the utility commands.



Conventions

UPPERCASE

In a syntax statement, commands and keywords are shown in uppercase characters. The characters must be entered in the order shown; however, you can enter the characters in either uppercase or lowercase. For example:

COMMAND

can be entered as any of the following:

command Command COMMAND

It cannot, however, be entered as:

comm com_mand comamnd

italics

In a syntax statement or an example, a word in italics represents a parameter or argument that you must replace with the actual value. In the following example, you must replace *filename* with the name of the file:

COMMAND *filename*

bold italics

In a syntax statement, a word in bold italics represents a required parameter that you must replace with the actual value. In the following example, you must replace ***filename*** with the name of the file:

COMMAND(***filename***)

punctuation

In a syntax statement, punctuation characters (other than brackets, braces, vertical bars, and ellipses) must be entered exactly as shown. In the following example, the parentheses and colon must be entered:

(*filename*):(*filename*)

underlining

Within an example that contains interactive dialog, user input and user responses to prompts are indicated by underlining. In the following example, yes is the user's response to the prompt:

Do you want to continue? >> yes

{ }

In a syntax statement, braces enclose required elements. When several elements are stacked within braces, you must select one. In the following example, you must select either ON or OFF:

COMMAND { ON
 OFF }

[]

In a syntax statement, brackets enclose optional elements. In the following example, OPTION can be omitted:

COMMAND *filename* [OPTION]

When several elements are stacked within brackets, you can select one or none of the elements. In the following example, you can select OPTION or *parameter* or neither. The elements cannot be repeated.

COMMAND *filename* [OPTION
 parameter]

The symbol indicates a front panel button on the Model 20GB/A. For example, RETURN represents the carriage return key or Shift represents the shift key.

character

character indicates a control character. For example, CTRL Y means that you press the control key and the Y key simultaneously.

Contents

1. Product Overview	
Product Components	1-1
Hardware Components	1-1
Software Components	1-2
Operation Components	1-3
2. Installing the Model 20GB/A	
Prerequisites	2-2
Verifying the Device Addresses	2-3
Verifying the Autochanger Controller Address	2-3
Verifying the Addresses of Both Disk Drives	2-4
Installing the SCSI Host Adapter Card and Cable	2-6
Powering on the Model 20GB/A	2-6
Ensuring Device Operability	2-7
Configuring the Card and the Device	2-8
Invoking the IO Configurator	2-8
Determining and Adding the I/O Path Adding the Autochanger	2-9
Adding the Disk Drives	2-9
Saving the Configuration	2-10
Creating a System Load Tape (SLT)	2-10
Enabling the New Configuration	2-11
Preparing the Model 20GB/A for Operation	2-11
Loading Disks	2-12
Synchronizing the Media Manager Table and Checking Status	2-15

Formatting and Initializing Selected Disks	2-17
Verifying Read and Write Operations	2-18
Unloading Disks	2-19
Transferring the Model 20GB/A to a System Administrator	2-21

3. Managing Disks on the Model 20GB/A

Removing Disks from the Shipping Container	3-1
Labeling the Plastic Case and Disks	3-2
Caring for the Disk Cartridges	3-3
Securing the Disk Cartridges	3-3
Formatting and Initializing All Disks	3-4
Scratching Disks	3-6

4. Magneto-Optical Utility (MOUTIL)

DO	4-2
EXIT	4-3
HELP	4-4
INITMO	4-5
LISTREDO	4-7
LOCK	4-8
LOG	4-9
REDO	4-10
SCRATCH	4-11
STATUS	4-12
SYNCTABLE	4-14
UNLOCK	4-15
USE	4-16
VERIFY	4-17

Index

Figures

1-1. Model 20GB/A Deskside Model . . .	1-3
1-2. Model 20GB/A Rackmount Model . .	1-4
2-1. Required Switch Settings	2-4
2-2. Inserting a Cartridge in the Deskside Model	2-13
2-3. Inserting a Cartridge in the Rackmount Model	2-14
2-4. Example of Partial Status Information	2-16
3-1. Removing the Disk Cartridge from Its Shipping Container	3-2
3-2. Magneto-Optical Disk	3-4
3-3. MOINIT File	3-5
4-1. STATUS Information Format	4-13

Tables

2-1. Switch Descriptions	2-5
------------------------------------	-----



Product Overview

This chapter provides an overview of the Optical Disk Library System (Model 20GB/A). The chapter discusses the following topics:

- Primary hardware and software product components.
- Basic operation components.

Product Components

The following sections explain the primary Model 20GB/A hardware and software components.

Hardware Components

The Optical Disk Library System is a direct-access secondary storage (DASS) device. The Model 20GB/A stores up to 20.8 Gbytes of data on a single library system. The storage capacity can be expanded to nearly 40 Gbytes if data compression is utilized.

The Model 20GB/A provides automatic retrieval and mounting of up to 32 magneto-optical disks. When an operator inserts a disk cartridge in the Model 20GB/A, an autochanger mechanism moves the disk from the input area known as the *mailslot* and places it in one of 32 storage *slots*. When requested, the Model 20GB/A can retrieve a specific disk from a slot and mount it on one of two drives for reading or writing.

The Model 20GB/A is available in the following styles:

- Deskside model (C1700A Option 1AB)
- Rackmount model (C1700A Option 1AC)

The vertical deskside model contains a single optical disk library system. The horizontal rackmount model can accommodate up to two optical disk library systems.

Software Components

The software components required to operate the Model 20GB/A are the TurboSTORE/XL II program and the magneto-optical utility program (MOUTIL). TurboSTORE/XL II stores and restores data to the library system and to other devices. This program is documented in the *TurboSTORE/XL II User's Guide* (36388-90001).

MOUTIL provides an interface for you or an operator to perform the following tasks:

- Unlock and lock the mailslot.
- Initialize, format, and scratch magneto-optical disks.
- Synchronize the library system media management table for reading.

You will be using MOUTIL in Chapter 2 to perform these tasks. MOUTIL is documented in the *Magneto-Optical Media Management User's Guide* (36398-90001).

Operation Components

You operate the Model 20GB/A using front panel buttons, commands from MOUTIL, and commands from TurboSTORE/XL II. The front panel buttons control the physical loading and unloading of media to and from particular storage slots or drive mechanisms in the device. Before you attempt to install the Model 20GB/A, you should be familiar with the front panel features and controls. Figure 1-1 shows the desktide model, and Figure 1-2 shows the rackmount model.

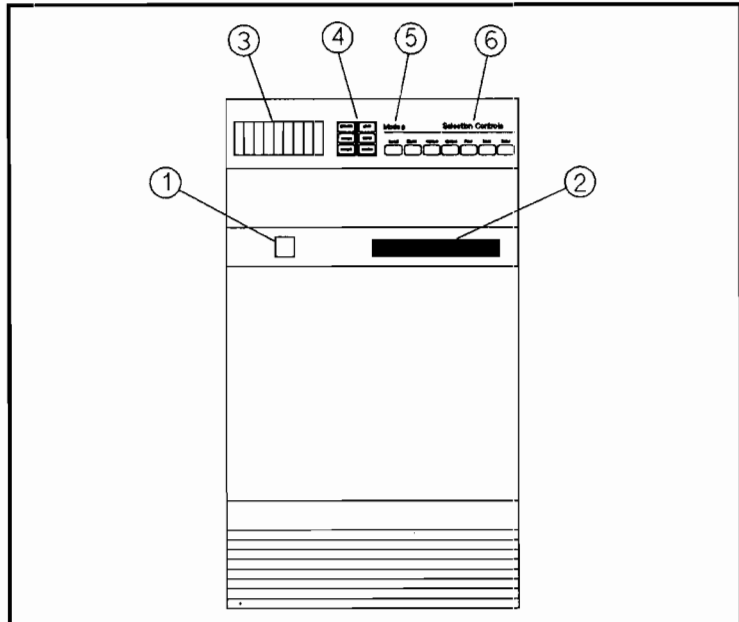


Figure 1-1. Model 20GB/A Desktide Model

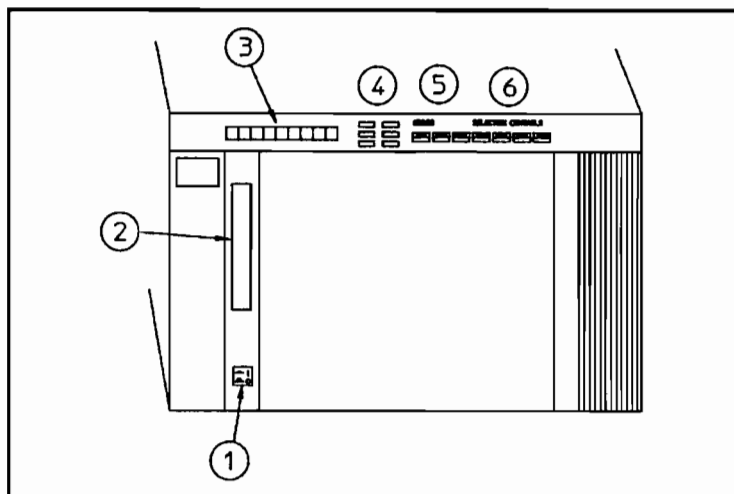


Figure 1-2. Model 20GB/A Rackmount Model

Definitions for the feature and control numbers shown in each figure are as follows:

- | | |
|------------------------|--|
| 1. Power-on Button | Switches the device on or off. |
| 2. Mailslot | Enables you to insert or remove disks. |
| 3. 9-Character Display | Displays information about the current operation. Press NEXT or PREV to control the selections. After your selection appears, press ENTER . Press CANCEL to cancel your selection. |
| 4. Status Indicators | Appear lit when the indicated activity is occurring. |
| 5. Mode Keys | Press the following buttons to perform the desired operations: |



LOAD loads a disk after you place it in the mailslot. After you press this button, the display prompts for the desired destination. Holding the button increments the number shown by tens. Press **ENTER** after you select the destination to load the disk into that location.

EJECT removes a disk from a drive to the mailslot. After you press this button, the display prompts for the desired disk to eject. Holding the button decrements the number shown by tens. Press **ENTER** after you select the drive or storage slot in which a disk is to be ejected. The disk ejects from the specified location to the mailslot.

OPTION acts like a toggle switch. When you press it initially, this button displays the current operation options available, such as **TEST**, **INFO**, **CONF**, and **SCSI ID**. When you press this button the second time, the front panel display returns to the **READY** state.

6. Selection Control Keys Press the following buttons to perform the desired operations:

CANCEL can cancel the current operation or choice, depending on the type of operation. This button can also cancel one or more previous operations or choices. Each time you press this button, it cycles back one operation at a time and cancels the operation, if cancellable.

NEXT scrolls the display forward by one. Hold the button to increment at an accelerated speed.

PREV scrolls the display choice backward by one. Hold the button to decrement at an accelerated speed.

ENTER chooses the displayed selection.

Installing the Model 20GB/A

This chapter provides procedures for the following major tasks that enable a Hewlett-Packard Customer Engineer to install the Model 20GB/A in the MPE XL system:

- Verifying the device addresses.
- Installing the HP 27251A CIO SCSI host adapter card on the host system.
- Connecting the Model 20GB/A to the host system using the SCSI cable.
- Powering on the Model 20GB/A.
- Ensuring device operability by running diagnostic tests.
- Configuring the SCSI host adapter card and the device using the SYSGEN program.
- Preparing the Model 20GB/A for operation.
- Turning over the Model 20GB/A to a system administrator.

Prerequisites

The following hardware components must be available before you begin the installation tasks:

- Model 20GB/A Optical Disk Library System.
- Magneto-optical disks.
- SCSI cable.
- HP 27251A CIO SCSI host adapter card. (Must be option 003 for series 920, 922, 932, 948 and 958.)

The following software components must be installed before you prepare the Model 20GB/A for operation:

- TurboSTORE/XL II (HP36397A or HP36398A)
- Magneto-optical utility (MOUTIL)

You will need to refer to the following manuals during installation:

- *HP 27251A CIO SCSI Host Adapter - Installation and Service Manual* (27251-90001)
- *HP Series 6300 Model 20GB/A Optical Disk Library System - System Administrator's Guide* (C1700-90070)

You may also want to refer to the following manuals during installation:

- *System Startup, Configuration, and Shutdown Reference Manual* (32650-90042)
- *TurboSTORE/XL II User's Guide* (36388-90001)

Verifying the Device Addresses

This task consists of checking that the addresses are already set to the recommended default values for the following hardware components:

- Autochanger controller address.
- Both disk drives.

The following sections explain how to check the settings and change them if necessary.

Verifying the Autochanger Controller Address

The autochanger controller address should already be set to the recommended default value of 3.

To verify the default value on the front panel of the Model 20GB/A, which should still be powered on:

1. Press **OPTION** at the front panel when READY appears in the status display. After pressing **OPTION**, TEST * appears in the status display.

Note

Pressing the **OPTION** key always invokes the READY state. Whenever you press the **CANCEL** key, you always return to the previous step.

2. Press **NEXT**. CONF * appears.
3. Press **NEXT**. INFO * appears.
4. Press **NEXT**. SCSI ID appears.
5. Press **ENTER**. SCSI ID 3 should appear. If this number does not appear, press **NEXT** or **PREV** until SCSI ID 3 appears.
6. Press **ENTER** to set the address.

Verifying the Addresses of Both Disk Drives

The addresses of the optical disk drives should already be set to the following recommended default values:

Drive 1	Address 4
Drive 2	Address 5

To verify these values on the rear panel of the Model 20GB/A:

Warning

Before proceeding, power off the Model 20GB/A and unplug the power cord.

1. Open the door on the rear of the cabinet (rackmount version) or remove the rear panel cover (deskside version) to expose the Model 20 GB/A rear panel.
2. Locate the address switches on the rear panel. Switches 1 through 5 are used for setting certain modes or for enabling or disabling certain functions. Switches 6 through 8 are used for setting the SCSI addresses.
3. Verify that the switches are set as shown in Figure 2-1. Refer to Table 2-1 for a description of each switch setting.

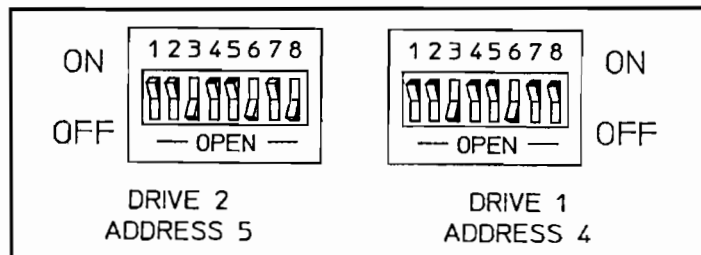


Figure 2-1. Required Switch Settings

Table 2-1. Switch Descriptions

Number	Name	Position	Description
1	Write with verify	On	Enables disk sector verification. This feature is not supported on MPE XL.
		Off	Disables disk sector verification. This switch should always be in this position for MPE XL systems.
2	Eject mode	On	Disables the eject button and enables only controller ejections.
		Off	Enables the eject button. This switch should always be in this position for MPE XL systems.
3	Eject through SCSI command	On	Disables the disk from ejecting when the drive spins down after the SCSI eject command is received. This switch should always be in this position for MPE XL systems.
		Off	Enables the disk to eject when the drive spins down after the SCSI eject command is received.
4	Reserved	On	This switch should never be in this position for MPE XL systems.
		Off	This switch should always be in this position for MPE XL systems.

Table 2-1. Switch Descriptions (continued)

Number	Name	Position	Description
5	SCSI parity check	On	Disables parity checking.
		Off	Enables parity checking. This switch should always be in this position for MPE XL systems.
6-8	SCSI address	On/Off	Sets the SCSI address.

Installing the SCSI Host Adapter Card and Cable

Refer to the *HP 27251A CIO SCSI Host Adapter - Installation and Service Manual* (27251-90001) for procedures to install the SCSI host adapter card (ID number HP27251A) on the host system and to connect the SCSI cable from the host system to the Model 20GB/A.

Powering on the Model 20GB/A

To power on the Model 20GB/A:

1. Locate the power cord and plug it into the AC line connector located on the rear panel.
2. Plug the power cord into the power outlet.
3. Close the rear panel. If you are installing a rackmount version, just close the rear door of the cabinet and skip to step 7. If you are installing a deskside version, proceed to the next step.
4. Locate the rear panel cover and lift up the top cover slightly.

5. Position the rear panel cover correctly.
6. Snap the top cover down to hold the rear panel cover in place.
7. Locate the power switch on the front panel and switch on the device.

The following process occurs after you switch on the device:

- **TESTING** appears on the status display of the front panel.
- Several power on tests run automatically.
- After the power on tests have finished running, either **READY** or **TEST FAIL** appears on the status display. **READY** indicates that the device is fully operable. **TEST FAIL** indicates that troubleshooting is necessary to correct the problem.

Ensuring Device Operability

You can ensure that the Model 20GB/A operates properly by manually running diagnostic tests from the front panel. Before you run the tests, you must do the following:

- Ensure that no disk is currently in the mailslot.
- Unlock the device using MOUTIL.

Refer to Chapter 2 of the *HP Series 6300 Model 20GB/A Optical Disk Library System - System Administrator's Guide* (C1700-90070) for specific information about running the tests.

Configuring the Card and the Device

The following tasks enable you to configure the SCSI host adapter card and the Model 20GB/A Optical Disk Library System to the host MPE XL system:

- Invoking the IO configurator from SYSGEN.
- Changing the I/O configuration for the SCSI host adapter card and the Model 20GB/A:
 - Adding the I/O path to the SCSI host adapter card.
 - Adding the autochanger as a device.
 - Adding both Model 20GB/A disk drives as devices.
- Saving the configuration.
- Creating a system load tape (SLT).
- Enabling the new configuration.

The following sections provide procedures to perform these tasks. For additional information about adding peripherals to the MPE XL system, refer to the *System Startup, Configuration, and Shutdown Reference Manual* (32650-90042).

Invoking the IO Configurator

To invoke the IO configurator from SYSGEN:

1. Log on to the console as **MANAGER.SYS** by entering the following command string:

```
:HELLO MANAGER[/userpass].SYS[/acctpass]
```

2. Activate the SYSGEN global module by entering the command **SYSGEN** or by entering the following command string:

```
:RUN SYSGEN.PUB.SYS
```

3. Invoke the IO configurator by entering **IO** at the SYSGEN prompt:

```
sysgen> IO
```

Determining and Adding the I/O Path

An I/O path consists of the system address assigned to the device interface hardware and the physical path that reaches an I/O device. Because you are adding the Model 20GB/A to a newly installed SCSI host adapter card, you must define the I/O path to the SCSI host adapter card level and add devices to the path.

The channel adapter module number and the device adapter slot number determine the I/O path. For example, if you want to install the SCSI host adapter card in the CIO expander on channel adapter 4 in interface slot 6, you would enter the following command string to define the path:

```
io> APATH 4.6 HP27251A
```

Adding the Autochanger

To add the autochanger (ID number HPC1700A) to the path:

1. Enter the command string shown in the following example, including the logical device (LDEV) number and the default device address (3). The default address is recommended.

```
io> ADEV LDEV=100 PATH=4.6.3 ID=HPC1700A
```

Adding the Disk Drives

To add the disk drives:

1. Add the first disk drive (ID number HPC1701A) to the path by entering the command string shown in the following example, including the LDEV and the default device address (4). The default address is recommended.

```
io> ADEV LDEV=101 PATH=4.6.4 ID=HPC1701A
```

2. Add the second disk drive (ID number HPC1701A) to the path by entering the command string shown in the following example, including the LDEV and the

default device address (5). The default address is recommended.

```
io> ADEV LDEV=102 PATH=4.6.5 ID=HPC1701A
```

Saving the Configuration

To save the configuration:

1. Hold the changes by entering the **HOLD** command:

```
io> HOLD
```

2. Exit the IO configurator by entering the **EXIT** command:

```
io> EXIT  
sysgen>
```

3. Save the changes in a permanent file by entering the **KEEP** command:

```
sysgen> KEEP
```

SYSGEN saves the changes made in the IO configurator to the default configuration group. Respond with **Y** when SYSGEN asks whether or not you want to overwrite this group:

```
keeping to group CONFIG.SYS  
Purge old configuration (yes/no)? Y  
** configuration files successfully saved **
```

Creating a System Load Tape (SLT)

To create a system load tape (SLT):

1. Mount a write-enabled tape on the tape drive. Ensure that the tape is online.
2. Generate a customized SLT that includes the new configuration by entering the **TAPE** command:

```
sysgen> TAPE
```

3. Reply to the tape request.

The system responds when it has finished generating the SLT by displaying the following message:

```
**Boot tape is successfully built**
```

4. Exit SYSGEN by entering the EXIT command:

```
sysgen> EXIT  
:
```

Enabling the New Configuration

To enable the new configuration:

1. Shut down the system.
2. Reboot the system using **START NORECOVERY**.

Refer to the *System Startup, Configuration, and Shutdown Reference Manual (32650-90042)* for information about system startup and shutdown.

Preparing the Model 20GB/A for Operation

The procedures in this section enable you to perform the following tasks that prepare the Model 20GB/A for use by customer operators or system administrators:

- Loading the magneto-optical disks to test device performance.
- Synchronizing the media manager table.
- Formatting and initializing disks in each drive.
- Verifying the successful performance of read and write operations.
- Unloading the disks.

To perform these tasks, you use selected commands from the magneto-optical utility (MOUTIL) and also run the magneto-optical test (MOTEST). While performing these tasks, you can refer to Chapter 4 for reference information about each MOUTIL command. Before

proceeding, ensure that the system administrator has properly installed MOUTIL and TurboSTORE/XL II.

Loading Disks

You load and unload disks through the mailslot of the Model 20GB/A. Before you can load disks into the Model 20GB/A drives, you must first unlock the mailslot. After loading the disks, you lock the mailslot to prevent accidental removal during formatting, initializing, and testing.

Although you can load up to 32 cartridges, you initially load only two before running MOTEST, which verifies that the drives can read and write to one side of each disk.

To unlock the mailslot and both drives, load the two disk cartridges, then lock the mailslot:

1. Run MOUTIL by entering MOUTIL at the system prompt as shown:

```
:MOUTIL
```

2. Unlock the mailslot by entering the UNLOCK command at the MOUTIL prompt. You can unlock both drives by specifying the LDEV of one of the drives, as shown below:

```
moutil> UNLOCK LDEV=n
```

Do not exit MOUTIL at this point. Exiting MOUTIL automatically locks the drives.

3. Remove two disk cartridges from the clear plastic storage boxes or sleeves, ensuring that the cartridges are properly labeled.

Caution

Do not affix the label to the cartridge where it can interfere with the operation of the metal shutter. If the metal shutter does not slide freely, it can jam the Model 20GB/A and result in data loss.

4. Insert the metal shutter end of one cartridge into the mailslot. If you do not fully insert the cartridge, the message **EMPTY** appears on the front panel. If this occurs, press **CANCEL** and insert the cartridge again. Refer to Figure 2-2 and Figure 2-3 for proper insertion orientation.

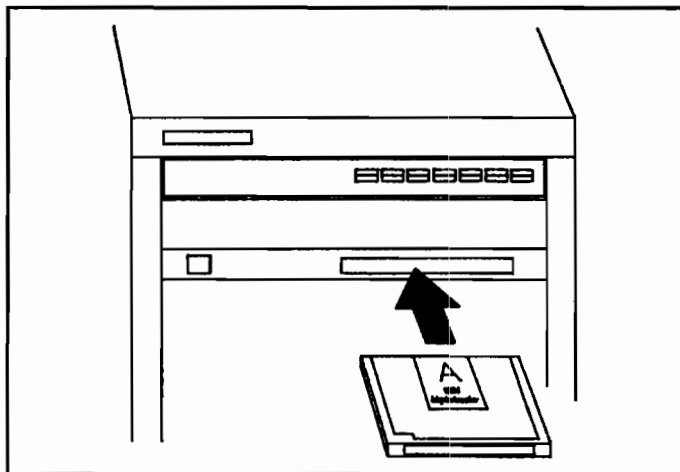


Figure 2-2.
Inserting a Cartridge in the Desk Model

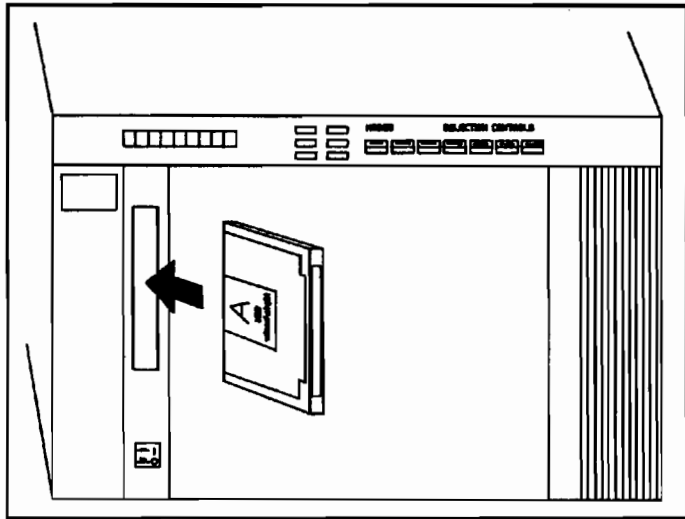


Figure 2-3.
Inserting a Cartridge in the Rackmount Model

5. Press **LOAD**. SLOT 1 appears on the front panel.
6. Press **ENTER** to accept SLOT 1. As the picker moves the cartridge from the mailslot to its slot destination, the LOAD indicator blinks and SLOT 1 continues to appear on the front panel.

After the picker moves the cartridge from the mailslot to slot 1, the front panel display returns to READY.

7. Load the second disk cartridge by first following the instructions in step 4, then proceed to step 8.
8. Press **LOAD**. SLOT 2 appears on the front panel.
9. Press **ENTER** to accept SLOT 2. As the picker moves the cartridge from the mailslot to its slot destination, the LOAD indicator blinks and SLOT 2 continues to appear on the front panel.

After the picker moves the cartridge from the mailslot to slot 2, the front panel display returns to **READY**.

10. Lock the mailslot when you have finished loading the cartridges by entering the **LOCK** command at the **MOUTIL** prompt. You can lock the mailslot used by both drives by specifying the **LDEV** of one of the drives, as shown below:

```
moutil> LOCK LDEV=n
```

Synchronizing the Media Manager Table and Checking Status

Whenever you load or unload disk cartridges, you must synchronize the Media Manager Table to inform the media manager of slot availability. After synchronizing the table, you should check the status of the magneto-optical drives and of each disk side currently loaded.

To synchronize the Media Manager Table and check the media status:

1. Lock the autochanger to prevent an additional synchronization.
2. Enter the **SYNCTABLE** command at the **MOUTIL** prompt. You synchronize both drives by specifying the **LDEV** of one of the drives, as shown below:

```
moutil> SYNCTABLE LDEV=n
```

The system responds by displaying the following message:

```
*Note: MOUTIL is synchronizing the  
*Note: Optical Disk Library System tables,  
*Note: which requires up to 45 minutes.
```

The duration of 45 minutes applies to an Optical Disk Library System in which all slots are full. Since only two slots are currently occupied, synchronization only requires two or three minutes to complete.

3. Enter the STATUS command at the MOUTIL prompt and specify the LDEV of the drive for which you want status information, as shown in the following example:

```
moutil> STATUS LDEV=n
```

The status display identifies the volume set names and disk names of each disk side currently loaded in each storage slot. Note that the status display is invalid if you have loaded or unloaded disks without synchronizing the software table. Figure 2-4 shows an example of status information for the loaded slots 1 and 2.

```
AutoChanger LDEV = 100
MagnetoOptical Disk LDEVs = 101, 102
```

Slot	Side	Volume	Media Name	Sub Name (Optional)
----	----	-----	-----	-----
1	A	Not Formatted/Unknown	Volume	
	B	Not Formatted/Unknown	Volume	
2	A	Not Formatted/Unknown	Volume	
	B	Not Formatted/Unknown	Volume	
3	A	Slot Empty		
	B	Slot Empty		
	.			
	.			
	.			
	.			
32	A	Slot Empty		
	B	Slot Empty		

Figure 2-4. Example of Partial Status Information

Formatting and Initializing Selected Disks

You must format and initialize each side of a disk before TurboSTORE/XL II can write to the sides. Formatting prepares the sides for writing; initializing creates volume set information so that you can mount the disks on the MPE XL system as private volumes. Formatting is unnecessary if you are using preformatted disks.

To satisfy the requirements for testing, you only need to format and initialize one side of the disks currently installed in each drive. This process requires up to 50 minutes per side for unformatted disks. You can either initialize each disk separately, or you can initialize them concurrently if you use two terminals and sessions. The advantage of concurrent initialization is that it requires only half the processing time of separate initialization.

Two MOUTIL commands are available for formatting and initializing: the INITMO command formats and initializes individual disks; the USE command executes a command file that could contain several INITMO commands. The INITMO command is recommended for formatting and initializing the two disks currently loaded. Refer to Chapter 4 for reference information about using these commands and their parameters.

To format and initialize the currently loaded disks:

1. Enter the INITMO command for the first drive, as shown in the following example:

```
moutil> INITMO VOLNAME=M01A LDEV=101 MEDIA=1 SIDE=0
```

MOUTIL responds by displaying the following message if the VERIFY command is set to ON:

```
moutil> Verify: Initialize new Magneto-Optical  
volume ! on ldev ! [Y/N] ?
```

2. Reply Y to the prompt.

3. Enter the `INITMO` command for the second drive either from the same terminal and session or from another terminal and session, as shown in the following example:

```
moutil> INITMO VOLNAME=M01B LDEV=102 MEDIA=2 SIDE=0
```

MOUTIL responds by displaying the following message if the `VERIFY` command is set to `ON`:

```
moutil> Verify: Initialize new Magneto-Optical  
volume ! on ldev ! [Y/N] ?
```

4. Reply `Y` to the prompt.

Verifying Read and Write Operations

After formatting and initializing one side of both disks, you can verify that the Model 20GB/A successfully reads and writes to the sides by running the `MOTEST` job file. `MOTEST` does the following:

- Stores a large file to each disk.
- Restores both files.
- Compares the contents of the restored files to the original files.

To verify read and write operations:

1. Run `MOTEST` by entering the following command string from the MPE XL prompt to test both drives of the Model 20GB/A, substituting your actual `LDEV` numbers for those shown:

```
:MOTEST.HPC1700A.TELESUP 101,102
```

2. Enter the command again if you need to test the drives of another Model 20 GB/A.
3. Observe the message. If `MOTEST` runs successfully, the following message appears:

```
MOTEST SUCCEEDED
```

If MOTEST does not run successfully, one of the following messages appears:

STORE FAILED TO WRITE FILES - MOTEST FAILED

RESTORE FAILED TO READ FILES - MOTEST FAILED

FILES DO NOT COMPARE - MOTEST FAILED

If one of these messages appears, proceed to the next step.

4. Check that the disks are formatted and initialized if you receive a message that STORE failed to write files or that RESTORE failed to read files. If MOUTIL has not formatted and initialized the disks, STORE cannot write to the disks and RESTORE cannot read from the disks.

If you receive a message that the files do not compare, run the appropriate diagnostic tests to determine the cause of the hardware problem.

Unloading Disks

The customer operator or system administrator may want to load one or all of the disk cartridges after you have prepared the Model 20GB/A for operation. Therefore, it is recommended that you unload the two test disks after performing MOTEST.

To unload both disks:

1. Ensure that READY appears on the front panel, then unlock the mailslot by entering the UNLOCK command at the MOUTIL prompt. You can unlock both drives by specifying the LDEV of one of the drives, as shown below:

```
moutil> UNLOCK LDEV=n
```

Do not exit MOUTIL at this point. Exiting MOUTIL automatically locks the drives.



2. Press **EJECT**. SLOT 1 appears on the front panel.
3. Press **ENTER** to accept the displayed choice.

While the picker moves the disk from its slot or drive to the mailslot, the EJECT indicator blinks and SLOT 1 appears on the front panel.

4. Remove the disk cartridge from the mailslot when the front panel display returns to READY.
5. Repeat steps 2 through 4 to unload the second disk cartridge. Note that SLOT 2 appears on the front panel instead of SLOT 1. If the first disk cartridge is already in the mailslot when you press **EJECT**, FULL appears. Remove the cartridge from the mailslot and press **EJECT** again.

If the cartridge is partially stuck inside the mailslot when you press **EJECT**, a MISLOAD message appears. Press **CANCEL**, remove the cartridge from the mailslot, and press **EJECT** again.

6. Lock the mailslot when you have finished unloading the cartridges by entering the LOCK command at the MOUTIL prompt. You can lock both drives by specifying the LDEV of one of the drives, as shown below:

```
moutil> LOCK LDEV=n
```

7. Synchronize the Media Manager Table by entering the SYNCTABLE command. You can synchronize both drives by specifying the LDEV of one of the drives, as shown below:

```
moutil> SYNCTABLE LDEV=n
```

The system responds as it did when you initially loaded both disks by displaying the following message:

- *Note: MOUTIL is synchronizing the
- *Note: Optical Disk Library System tables,
- *Note: which requires up to 45 minutes.

Since only two slots were previously occupied, synchronization requires only two or three minutes to complete.

Transferring the Model 20GB/A to a System Administrator

After you have successfully completed the tasks documented in this chapter, you can transfer operational responsibilities of the Model 20GB/A to a system administrator. The administrator should do the following when taking over operational responsibilities:

1. Read Chapter 1 to be familiar with operating the front panel controls.
2. Read Chapter 3 for information about managing disks.
3. Format and initialize all disks as described in Chapter 3.
4. Refer to Chapter 2 to perform basic operation tasks as necessary.



Managing Disks on the Model 20GB/A

This chapter provides information from a system administrator's perspective about managing magneto-optical disks on the Model 20GB/A. Management tasks consist of the following:

- Removing the disk cartridge from the shipping container.
- Labeling disks.
- Caring for disks.
- Securing disks.
- Formatting and initializing disks.
- Scratching disks.

Removing Disks from the Shipping Container

A special shipping container protects each disk cartridge (part number HP92280A). If you order all 32 disk cartridges together from Hewlett-Packard, a clear, flexible plastic storage sleeve protects each cartridge. These storage sleeves simply slide off each cartridge.

When you order a single disk cartridge from Hewlett-Packard, a clear, rigid plastic shipping container protects the cartridge. Figure 3-1 shows how the end flips up and the lid raises to enable you to remove the disk cartridge from the shipping container.

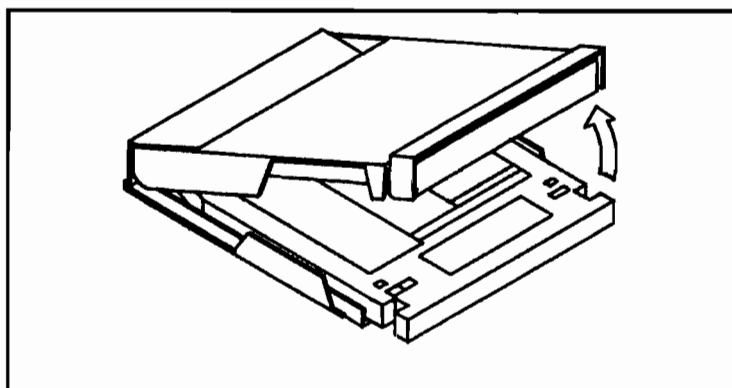


Figure 3-1. Removing the Disk Cartridge from Its Shipping Container

Labeling the Plastic Case and Disks

Label both the plastic case and the disk cartridge it contains with the adhesive labels provided with each cartridge.

Some of the important items you should include on each label are:

- Disk number.
- Date of formatting and initializing.
- Disk owner.
- Storage purpose.
- The notation "For Model 20GB/A Use."

Caution

Do not affix the label to the cartridge where it can interfere with the operation of the metal shutter. If the metal shutter does not slide freely, it can jam the Model 20GB/A and result in data loss.

Caring for the Disk Cartridges

It is relatively simple to take care of the disk cartridges. For instance, the cartridges do not need periodic cleaning. However, you should be aware of the following precautions:

- Do not expose a disk to extreme magnetic fields.
- Do not expose a disk to dust particles.
- Do not open the shutter and touch a disk surface.
- Do not disassemble a disk cartridge.
- Do not drop a disk.
- Avoid extreme temperatures or extreme humidity.
- Store a disk in its plastic case when it is not in use.
- Remove the old label before affixing a new one.

Securing the Disk Cartridges

For security purposes, TurboSTORE/XL II does not write to a disk unless you have “scratched” it using the SCRATCH command of MOUTIL. Refer to “Scratching Media” for procedures on scratching disks.

Each cartridge has a write-protect tab that you should not set. If you set this tab, both TurboSTORE/XL II and MOUTIL cannot use a disk for store or restore operations. Refer to item 1 in Figure 3-2 for the write-protect tab location.

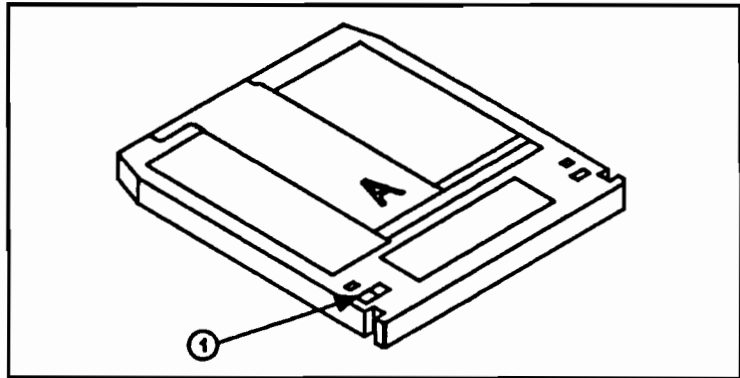


Figure 3-2. Magneto-Optical Disk

Formatting and Initializing All Disks

To format and initialize all sides of the disks together, the **USE** command in **MOUTIL** enables you to specify a customized file that contains all sides to be formatted and initialized. You can create a file or can edit the default file **MOINIT** on the subsystem tape. **MOINIT** is located in the **HPC1700A.TELESUP** account and contains **INITMO** commands for all 64 disk sides.

To use the unaltered or edited default **MOINIT** file:

1. Enter the following command at the **MOUTIL** prompt:

```
moutil> USE MOINIT
```

To use a customized file that you have named **INITALL**:

1. Enter the following command at the **MOUTIL** prompt:

```
moutil> USE INITALL
```

Figure 3-3 shows an example of an edited **MOINIT** file. Note that the **VERIFY** command appears twice in the file. **VERIFY OFF** enables **MOUTIL** to scratch each disk

in sequential order without prompting for permission to do so. **VERIFY ON** restores prompting. If **VERIFY OFF** does not appear before the **INITMO** statements, **MOUTIL** prompts for permission to reinitialize each disk.

```
VERIFY OFF
INITMO volname=backup1a LDEV=101 media=28 side=0
INITMO volname=backup1b LDEV=101 media=29 side=1
INITMO volname=backup2a LDEV=101 media=29 side=0
INITMO volname=backup2b LDEV=101 media=30 side=1
INITMO volname=backup3a LDEV=101 media=30 side=0
INITMO volname=backup3b LDEV=101 media=31 side=1
INITMO volname=backup4a LDEV=101 media=31 side=0
INITMO volname=backup4b LDEV=101 media=32 side=1
INITMO volname=backup5a LDEV=101 media=32 side=0
VERIFY ON
```

Figure 3-3. MOINIT File

Note

Formatting and initializing all disk sides of a full device could require up to 53 hours. However, you can eliminate half of the processing time if you format and initialize using two terminals and sessions.

Scratching Disks

The process of formatting and initializing disk cartridges automatically “scratches” them and makes them available for TurboSTORE/XL II. After TurboSTORE/XL II writes to a disk, you must scratch the disk using the SCRATCH command before you can overwrite it. Refer to Chapter 4 for reference information about using this command and its parameters.

To scratch a disk:

1. Enter the STATUS command at the MOUTIL prompt to determine the name of the disk set and disk subset that you want to scratch.
2. Enter the SCRATCH command at the MOUTIL prompt, as in the following example:

```
moutil> SCRATCH MEDIA=MONTHLY10 LDEV=101
```

MOUTIL responds by displaying the following prompt:

```
moutil> Verify: Delete data from Backup ! [Y/N] ?
```

3. Reply Y to the prompt.
4. Remove or replace labels on the disk and container.

Magneto-Optical Utility (MOUTIL)

This chapter provides reference information for each magneto-optical utility (MOUTIL) command. MOUTIL provides maintenance and inquiry programs to manage magneto-optical disks within the Model 20GB/A.

MOUTIL enables you to execute the following commands:

- DO
- EXIT
- HELP
- INITMO
- LISTREDO
- LOCK
- LOG
- REDO
- SCRATCH
- STATUS
- SYNCTABLE
- UNLOCK
- USE
- VERIFY

Some of the more important tasks these commands enable you to perform are as follows:

- Format, initialize, and scratch disks for backup use.
- Synchronize the media management table.
- Display volume and backup information for all disks in the Model 20GB/A.

DO

Syntax	DO [[COMMAND=] <i>command id</i>]
Parameters	COMMAND Identifies a particular command in the command history stack. This parameter is optional.
Description	The DO command executes a previously entered command.
Example	moutil> <u>DO 2</u>

EXIT

Syntax EXIT

Parameters None.

Description The EXIT command terminates the MOUTIL program. If you executed the UNLOCK command and did not subsequently execute the LOCK and SYNCTABLE commands during MOUTIL processing, the EXIT command automatically invokes the LOCK and SYNCTABLE commands for each optical disk library system. In this case, the following message appears:

*Note: Before exiting, MOUTIL is synchronizing
*Note: the Optical Disk Library System tables,
*Note: which requires up to 45 minutes.

Example moutil> EXIT



HELP

Syntax	HELP [[COMMAND=] <i>command name</i>]
Parameters	COMMAND Specifies the name of a particular magneto-optical utility command for which help is needed.
Description	The HELP command provides online help pertaining to the magneto-optical utility.
Example	moutil> <u>HELP STATUS</u>

INITMO

Syntax `INITMO { [VOLNAME=] volume name }
 { [LDEV=] moldev } { [MEDIA=] media stg slot }
 { [SIDE=] side } [[REFORMAT=] format choice]`

Parameters	VOLNAME	Specifies the unique volume set name to be assigned to a disk side.
	LDEV	Specifies the logical device number of the Optical Disk Library System where the format and initialization should occur. The number assigned as the LDEV can range from 2 to 32767.
	MEDIA	Used to specify a number between 1 and 1000 for the disk to be mounted in the specified <i>moldev</i> .
	SIDE	Specifies the side of a disk to be used. The number 0 specifies the "A" side of the disk. The number 1 specifies the "B", or inverted side, of the disk.
	REFORMAT	Specifies whether or not to reformat a currently formatted or preformatted disk. No , the default, suppresses reformatting of the disk. Yes instructs MOUTIL to override the default and reformat the disk. You typically would not specify Yes for a preformatted disk, unless you want to reformat the disk for some reason. If you are not formatting a preformatted disk, you do not have to specify this parameter at all. INITMO automatically formats a disk if it

INITMO

detects that the disk is not currently formatted.

Description The **INITMO** command formats a magneto-optical side to prepare it for writing. Subsequently, the side is initialized with the volume set information and the backup area. If you are using a preformatted disk, **MOUTIL** skips the formatting step and proceeds to the initializing step. Each magneto-optical side is its own master volume.

You can use the **INITMO** command to perform the following functions:

- Hard-allocate the magneto-optical LDEV.
- Swap in the specified disk side to the magneto-optical disk drive.
- Format the volume if requested or if necessary.
- Initialize the volume set.
- Create a file where backup data will be written.
- Mark the volume as available for use (scratched).

Example In the following example, side A of disk number 32 in LDEV 101 is to be formatted and initialized. The unique volume set name assigned is **BACKUP1A**. The user responds to the prompt in order to format and initialize the side.

```
moutil> INITMO VOLNAME=BACKUP1A LDEV=101 MEDIA=32 SIDE=0
moutil> Verify:Initialize new Magneto-Optical
        volume ! on ldev ! [Y/N]? Y
```

LISTREDO

Syntax LISTREDO [START=*beg range*] [;END=*end range*]

Parameters

START	Specifies the beginning range of the commands to be displayed. This parameter is optional.
END	Specifies the end of the range to be displayed.

Description The LISTREDO command lists the command history stack.

Example `moutil> LISTREDO START=1;END=10`

LOCK

Syntax	LOCK { [LDEV=] <i>moldev</i> }	
Parameters	LDEV	Specifies the LDEV number of the mailslot to be locked. The number assigned as the LDEV can range from 2 to 32767.
Description	The LOCK command locks the mailslot associated with a specified LDEV.	
Example	moutil> <u>LOCK LDEV=101</u>	

LOG

Syntax	LOG { [FILENAME=] <i>filename</i> }
Parameters	FILENAME Specifies the name of a file to be used as a log file.
Description	The LOG command records the <code>\$stdlist</code> dialog text to the log file. The log file contains an exact record of the MOUTIL session.
Example	moutil> <u>LOG LOGFILE</u>

REDO

Syntax	REDO [[COMMAND=] <i>command id</i>]
Parameters	COMMAND Identifies a particular command in the command history stack. The default is the last command entered.
Description	The REDO command functions identically to the MPE XL REDO command. It modifies and reexecutes a previously entered command.
Example	moutil> <u>REDO 2</u>

SCRATCH

Syntax SCRATCH { [MEDIA=] *media name* }
 [[MEDIASUB=] *media subname*] { [LDEV=] *moldev* }

Parameters	MEDIA	Specifies the name of the media set to be made available for reuse. The media name is the name assigned during the STORE operation.
	MEDIASUB	Specifies the name of the side within the media set to scratch. The media subname is the subname assigned during the STORE operation.
	LDEV	Specifies the LDEV number of the disk to be scratched. The number assigned as the LDEV can range from 2 to 32767.

Description The SCRATCH command makes disks available for TurboSTORE/XL II to use for backups. When you enter the command, MOUTIL prompts for verification to scratch a disk.

Example

```
moutil> SCRATCH MEDIA=DAILY.09101990.KING LDEV=101
moutil> Verify: Delete data from Backup ! [Y/N] ? Y
```

STATUS

Syntax `STATUS { [LDEV=] moldev }`

Parameters `LDEV` Specifies the LDEV number of the magneto-optical device for which you want information to be displayed. The number assigned as the LDEV can range from 2 to 32767. Specifying the LDEV of either drive produces the same display.

Description The `STATUS` command produces a display that shows the volume set names and disk names of each disk side currently loaded in each storage slot. Note that the display is inaccurate if you have not executed the `SYNTABLE` command after loading or unloading disks. Figure 4-1 shows an example of the status information format.

Example `moutil> STATUS LDEV=100`

AutoChanger LDEV = 100

MagnetoOptical Disk LDEVs = 101, 102

Slot	Side	Volume	Media Name	Sub Name (Optional)
----	----	-----	-----	-----
1	A	Vol Name	Media Name	Sub Name
	B	Vol Name	Media Name	Sub Name
2	A	Vol Name	Media Name	Sub Name
	B	Vol Name	Media Name	Sub Name
3	A	Not Formatted/Unknown Volume		
	B	Vol Name	\$SCRATCH	
	.			
	.			
	.			
	.			
32	A	Vol Name	Media Name	
	B	Vol Name	Media Name	

Figure 4-1. STATUS Information Format

SYNCTABLE

Syntax SYNCTABLE { [LDEV=] *moldev* }

Parameters LDEV Specifies the LDEV number of a disk to be synchronized with the MPE XL system. The number assigned as the LDEV can range from 2 to 32767.

Description The SYNCTABLE command loads each disk side and reads its volume set name and other pertinent media information. The media manager can then determine the characteristics of a disk, such as whether it has been scratched or whether it has a valid disk name.

If you have unlocked the autochanger, make sure to lock it before entering the SYNCTABLE command. Otherwise, when you exit MOUTIL, it automatically resynchronizes the tables, which doubles the processing time.

You do not have to enter the SYNCTABLE command if you are removing or inserting disks when using TurboSTORE/XL II. If TurboSTORE/XL II runs out of disks to process in the Model 20GB/A, it prompts you to insert disks through the mail slot. In this case, you do not have to unlock the device nor enter the SYNCTABLE command.

When you execute SYNCTABLE, the command displays the following message:

```
*Note: MOUTIL is synchronizing the
*Note: Optical Disk Library System tables,
*Note: which requires up to 45 minutes.
```

Example moutil> SYNCTABLE LDEV=101

UNLOCK

Syntax UNLOCK { [LDEV=] *moldev* }

Parameters LDEV Specifies the LDEV number of the drive to be unlocked. The number assigned as the LDEV can range from 2 to 32767.

Description The UNLOCK command unlocks the mailslot enabling you to remove or insert disk cartridges. When you execute UNLOCK, the command does the following:

1. Unlocks the mailslot associated with the specified LDEV.
2. Waits for a response from the media manager.
3. Locks the mailslot and synchronizes the media management table before MOUTIL terminates.

Example `moutil> UNLOCK LDEV=101`

USE

Syntax `USE { [FILENAME=] filename }`

Parameters `FILENAME` Specifies the unique file name containing a series of MOUTIL commands.

Description The USE command executes an ASCII file containing a series of MOUTIL commands. The file can either be the default MOINIT file or an edited version that you can rename.

Example `moutil> USE MOINIT`

Refer to Chapter 3 for information about the default MOINIT file.



Index

- A**
 - adding disk drives, 2-9
 - autochanger
 - adding, 2-9
 - controller address, verifying, 2-3
 - function, 1-1

- C**
 - caring for disks, 3-3
 - cartridges
 - loading, 2-13
 - COMMAND parameter
 - DO command, 4-2
 - HELP command, 4-4
 - REDO command, 4-10
 - commands
 - DO, 4-2
 - EXIT, 4-3
 - HELP, 4-4
 - INITMO, 2-17, 4-5
 - LISTREDO, 4-7
 - LOCK, 2-15, 2-20, 4-8
 - LOG, 4-9
 - REDO, 4-10
 - SCRATCH, 3-6, 4-11
 - STATUS, 2-15, 4-12
 - SYNCTABLE, 2-15, 2-20, 4-14
 - UNLOCK, 2-12, 2-19, 4-15
 - USE, 3-4, 4-16
 - VERIFY, 4-17
 - components
 - hardware, 1-1
 - operation, 1-3

- software, 1-2
- configuration, 2-9
- configuring
 - enabling the new configuration, 2-11
 - invoking SYSGEN, 2-8
 - IO configurator, 2-8
 - saving the configuration, 2-10
 - the Model 20GB/A, 2-8
 - the SCSI host adapter card, 2-8
- connecting the SCSI cable, 2-6
- creating a system load tape (SLT), 2-10

D

- DASS, 1-1
- deskside model, description, 1-2
- device addresses, verifying, 2-3
- diagnostic tests, 2-7
- Direct Access Secondary Storage device, 1-1
- disk cartridges
 - caring for, 3-3
 - loading, 2-12
 - removing, 2-20
- disk drive addresses, verifying, 2-4
- disk drives, adding, 2-9
- disks
 - caring for, 3-3
 - formatting, 2-17
 - formatting all, 3-4
 - initializing, 2-17
 - initializing all, 3-4
 - labeling, 3-2
 - loading, 2-12
 - managing, 3-1
 - MOUTIL, 4-1
 - removing from shipping container, 3-1
 - scratching, 3-6
 - securing, 3-3
 - storing, 3-3
 - unloading, 2-19
 - write-protect tab, 3-3
- DO command, 4-2
- documentation

optional, 2-2
required, 2-2

- E**
 - enabling the new configuration, 2-11
 - END parameter, LISTREDO command, 4-7
 - ensuring device operability, 2-7
 - examples
 - edited MOINIT file, 3-5
 - removing a cartridge from its container, 3-1
 - status display, 2-16
 - status information format, 4-12
 - EXIT command, 4-3
 - exiting
 - SYSGEN, 2-11
 - the IO configurator, 2-10
 - expanding storage capacity, 1-1

- F**
 - features and controls
 - front panel, 1-3
 - FILENAME parameter, USE command, 4-16
 - formatting disks, 2-17, 3-4
 - front panel features and controls, 1-3

- H**
 - hardware
 - components, 1-1
 - required components, 2-2
 - HELP command, 4-4
 - host adapter card, 2-9

- I**
 - initializing disks, 2-17, 3-4
 - INITMO command, 2-17, 4-5
 - executing multiple commands, 3-4
 - installation
 - prerequisites, 2-2
 - SCSI host adapter card, 2-6
 - tasks, list of, 2-1
 - IO configurator
 - exiting, 2-10
 - invoking, 2-8
 - I/O path, adding, 2-9

- L**
 - labeling the disks, 3-2
 - LDEV parameter
 - INITMO command, 4-5
 - LOCK command, 4-8
 - SCRATCH command, 4-11
 - STATUS command, 4-12
 - SYNCTABLE command, 4-14
 - UNLOCK command, 4-15
 - LISTREDO command, 4-7
 - loading disks, 2-12
 - LOCK command, 2-15, 2-20, 4-8
 - locking the mailslot, 2-15
 - LOG command, 4-9

- M**
 - magneto-optical disks
 - managing, 3-1
 - mailslot
 - definition, 1-1
 - locking, 2-15
 - unlocking, 2-12
 - media manager table, synchronizing, 2-15
 - MEDIA parameter
 - INITMO command, 4-5
 - SCRATCH command, 4-11
 - media status, checking, 2-15
 - MEDIASUB parameter, SCRATCH command, 4-11
 - MOINIT default file, 3-4
 - MOTEST, 2-11, 2-18
 - MOUTIL, 2-11
 - commands, 4-1
 - purpose, 1-2

- O**
 - operability, ensuring, 2-7
 - operation components, 1-3
 - operation of the Model 20GB/A, preparing for, 2-11
 - optical disk library system, 1-1
 - optical disks
 - managing, 3-1
 - optional documentation, 2-2

P parameters
COMMAND, DO command, 4-2
COMMAND, HELP command, 4-4
COMMAND, REDO command, 4-10
END, LISTREDO command, 4-7
FILENAME, USE command, 4-16
LDEV, INITMO command, 4-5
LDEV, LOCK command, 4-8
LDEV, SCRATCH command, 4-11
LDEV, STATUS command, 4-12
LDEV, SYNCTABLE command, 4-14
LDEV, UNLOCK command, 4-15
MEDIA, INITMO command, 4-5
MEDIA, SCRATCH command, 4-11
MEDIASUB, SCRATCH command, 4-11
REFORMAT, INITMO command, 4-5
SIDE, INITMO command, 4-5
START, LISTREDO command, 4-7
VOLNAME, INITMO command, 4-5
powering on procedure, 2-6
preparing the Model 20GB/A for operation, 2-11
prerequisites, installation, 2-2

R rackmount model, description, 1-2
read and write operations, verifying, 2-18
read verification, 2-18
REDO command, 4-10
REFORMAT parameter
INITMO command, 4-5
removing disks from a shipping container, 3-1
required documentation, 2-2
required switch settings, 2-4
running diagnostic tests, 2-7

- S**
 - saving the configuration, 2-10
 - SCRATCH command, 3-6, 4-11
 - scratching disks, 3-6
 - SCSI, 2-9
 - cable, connecting to host, 2-6
 - host adapter card, 2-9
 - host adapter card, installing, 2-6
 - securing disks, 3-3
 - SIDE parameter, INITMO command, 4-5
 - software
 - components, 1-2
 - required components, 2-2
 - START parameter, LISTREDO command, 4-7
 - status, checking, 2-15
 - STATUS command, 2-15, 4-12
 - status display, example of, 2-16
 - storage capacity, expansion, 1-1
 - storage slot, definition, 1-1
 - switch settings, required, 2-4
 - synchronizing
 - the media manager table, 2-15
 - the software table, 1-2
 - SYNCTABLE command, 2-15, 2-20, 4-14
 - SYSGEN
 - exiting, 2-11
 - invoking, 2-8
 - system load tape (SLT), creating, 2-10

- T**
 - TurboSTORE/XL II, 2-2

- U**
 - unloading disks, 2-19
 - UNLOCK command, 2-12, 2-19, 4-15
 - unlocking the mailslot, 2-12
 - USE command, 3-4, 4-16
 - utility, MOUTIL, 1-2

- V** VERIFY command, 4-17
 - verifying
 - addresses of both disk drives, 2-4
 - autochanger controller address, 2-3
 - device addresses, 2-3
 - read and write operations, 2-18
 - VOLNAME parameter, INITMO command, 4-5

- W** write-protect tab; 3-3
 - write verification, 2-18



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