

HP StorageWorks MSL2024 Tape Library getting started

ⓘ IMPORTANT:

The shipping lock must be removed for the robotics to work properly. A robot move error is displayed if the shipping lock is not removed. See Step 1, Removing and storing the shipping lock.

⚠ WARNING!

The Library weighs 15.6 kg (34.3 lb) without media and 20.4 kg (44.9 lb) with media (24 cartridges). When moving the Library, to reduce the risk of personal injury or damage to the device:

- Observe local health and safety requirements and guidelines for manual material handling.
- Remove all tapes to reduce the overall weight of the device and prevent cartridges from falling into the robotic path and damaging the Library.
- Obtain adequate assistance to lift and stabilize the device during installation or removal.

⚠ WARNING!

When placing the Library into a rack, to reduce the risk of personal injury or damage to equipment:

- Extend the rack leveling jacks to the floor.
- Ensure that the full weight of the rack rests on the leveling jacks.
- Install stabilizing feet on the rack.
- Extend only one rack component at a time. Racks may become unstable if more than one component is extended.

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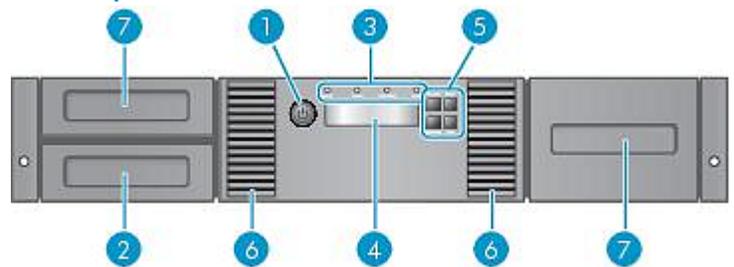
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Front panel overview



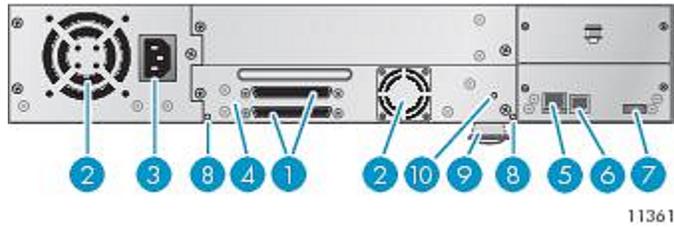
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- | | |
|-----------------|---------------|
| 1. Power button | 2. Mailslot |
| 3. LEDs | 4. LCD screen |
| 5. Control keys | 6. Air vents |
| 7. Magazines | |



* A K 3 7 8 - 9 6 0 2 8 *

Back panel overview: parallel SCSI



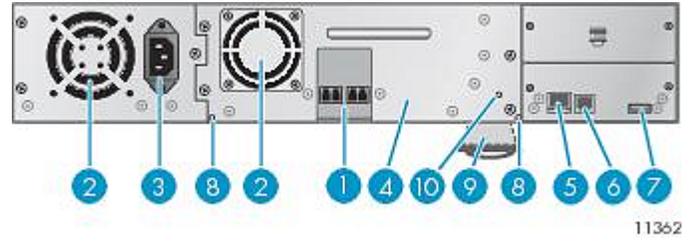
- | | |
|--|-----------------------------------|
| 1. Parallel SCSI connector | 2. Fan |
| 3. Power connector | 4. Tape drive assembly |
| 5. Ethernet port | 6. Serial port (Factory use only) |
| 7. USB port | 8. Magazine release hole |
| 9. Pull-out tab containing product information | 10. Tape drive assembly LED |



NOTE:

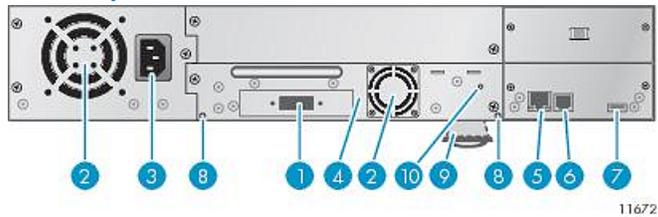
The overview of libraries with full-height SCSI drives is similar to that of libraries with half-height SCSI drives, shown above.

Back panel overview: Fibre Channel (FC)



- | | |
|--|-----------------------------------|
| 1. FC ports | 2. Fan |
| 3. Power connector | 4. Tape drive assembly |
| 5. Ethernet port | 6. Serial port (Factory use only) |
| 7. USB port | 8. Magazine release hole |
| 9. Pull-out tab containing product information | 10. Tape drive assembly LED |

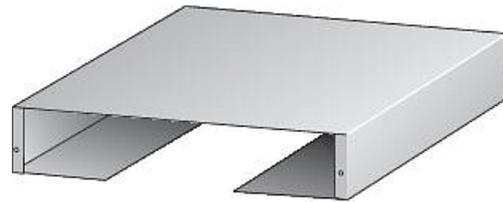
Back panel overview: SAS



- | | |
|--|-----------------------------------|
| 1. SAS port | 2. Fan |
| 3. Power connector | 4. Tape drive assembly |
| 5. Ethernet port | 6. Serial port (Factory use only) |
| 7. USB port | 8. Magazine release hole |
| 9. Pull-out tab containing product information | 10. Tape drive assembly LED |

Optional: Tabletop conversion cover

The Library should only be either installed into a rack with the enclosed rails or installed into the optional tabletop conversion cover and set on a flat surface.



Using the operator control panel (OCP)

The OCP has a power button, four LEDs, four control keys, and a 2-line by 16-character LCD screen. With the OCP, you can monitor, configure, and operate most Library functions from the Library front panel.

See “OCP menu” on page 12 for more information.

Control keys

The OCP displays a menu that lets you access information and execute commands using the four control keys.



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Cancel — Cancels the current menu option, returns to the previous menu level, or returns to the Home screen.

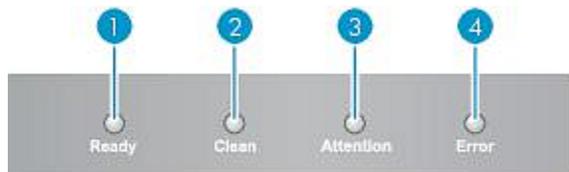
Enter — Executes the current menu or selects the current option displayed on the LCD screen.

Previous — Selects the previous item or value in the currently displayed menu.

Next — Selects the next item or value in the currently displayed menu.

LED indicators

The OCP has four LEDs that provide information.



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Ready — Green, steady when power is on, blinking with tape drive or Library robotics activity.

Clean — Amber when a tape drive cleaning operation is recommended.

Attention — Amber if the Library has detected a condition that user attention is necessary, but that the device can still perform most operations.

Error — Amber if an unrecoverable tape drive or Library error occurs. A corresponding error message displays on the LCD screen. User intervention is required; the device is not capable of performing some operations.

Using the remote management interface (RMI)

With the RMI, you can monitor, configure, and operate most Library functions from a web browser.

HP recommends that, when possible, the RMI be used as the primary Library interface because the web interface provides access to additional features, includes online help, and is easier to use. However, the RMI is not required to use the product, except to configure SNMP, IPv6, and logical libraries. The only tasks you cannot do from the RMI are:

- Opening the mailslots.
- Initiating the Wellness test.
- Saving and restoring configuration files, saving support tickets, and downloading firmware via a USB flash drive.

To enable the RMI, follow the instructions in this document to:

- Connect the Library to your local area network with an Ethernet cable.
- Configure the network settings of the Library.
- If you intend to use the administrative functions of the RMI, set the Administrator password using the OCP.

NOTE:

The Library is shipped without an administrator password. You must set the administrator password with the OCP before you can use the RMI administrator functions. Once the administrator password is set, you can access the RMI by providing the administrator password on the login screen.

Logging in

Using the OCP, find the Library IP address from the **Info > Network** screen. Open any HTML web browser and enter the Library IP address. Select the account type. For the administrator account, you must also enter the administrator password. Click **Sign In**.



Once signed in, click **Help** in the upper right-hand corner for more information about the fields and information in the RMI.

Status icons



The green **Status OK** icon indicates that the Library is fully operational and that no user interaction is required.



The blue exclamation point **Status Warning** icon indicates that user attention is necessary, but that the device can still perform most operations.

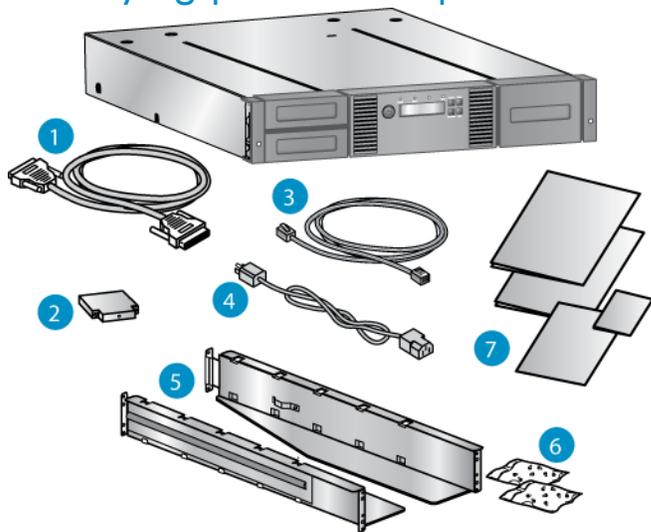


The red X **Status Error** icon indicates that user intervention is required and that the device is not capable of performing some operations.

Unpacking the Library

Remove the packaging, accessories, and Library from the box one layer at a time. Place the Library on a level work surface. Carefully remove the foam padding and then the bag from the Library. Save the packaging materials to move or ship the Library in the future.

Identifying product components



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Confirm that you received the following product components:

1. Parallel SCSI cable (parallel SCSI Libraries)
2. U320 parallel SCSI terminator (parallel SCSI Libraries)
3. Ethernet cable
4. Power cord
5. Two rack rails
6. Two packets of rack hardware
7. Product documentation

For a Fibre Channel Library, you will need an FC cable.

For a SAS Library you will need a SAS cable with the correct connector for your host bus adapter (HBA). For a list of supported cables, see the MSL QuickSpecs at <http://www.hp.com/go/tape>.

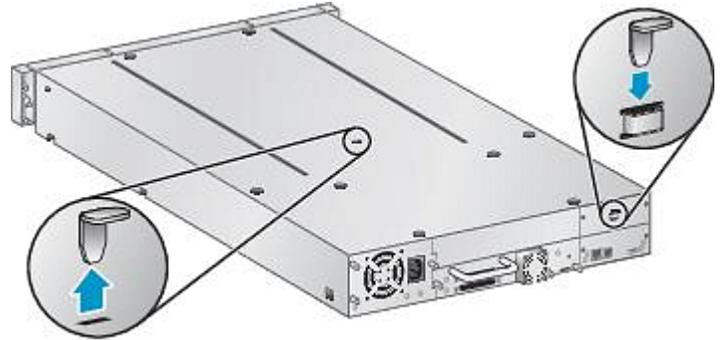
⚠ CAUTION:

High quality SAS cables rated at the transfer rate of the SAS components are required. Always verify that the SAS cable you are using is rated for the data transfer speed of the interface of your components. SAS cables described as "equalized" may not support 6 Gb/s data rates and should not be used with LTO-5 tape drives unless these cables are verified for 6 Gb/s data rates. For optimum performance, only use HP cables of the length specified as qualified for your products.

1 Removing and storing the shipping lock

The shipping lock protects the robotic transport mechanism from moving during shipment and must be removed and stored before powering on the Library.

Locate the adhesive tape holding the storage lock at the top of the Library. Remove the adhesive tape, then remove the storage lock and store it as shown.



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⚠ IMPORTANT:

The shipping lock must be removed for the robotics to work properly. A robot move error is displayed if the shipping lock is not removed.

Optional: Installing the tabletop conversion cover

Skip this step if you are mounting the Library in a rack.

Place the cover on the work surface behind the Library. Slide the Library into the cover until the front panel of the Library is aligned with the cover.

Tighten the two captive screws on the front bezel to secure the Library in the cover.



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⚠ CAUTION:

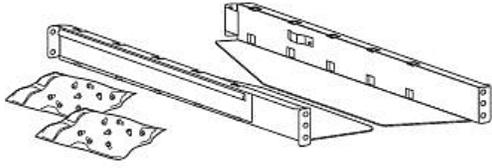
Operating the Library on a flat surface without the tabletop conversion cover may cause errors or damage to the Library.

2 Determining your rack type

If you mounted the Library in the tabletop conversion cover, continue with Step 5.

You will need a #2 and #3 Phillips screwdriver, the two rack rails, and the packet of eight M6 screws appropriate for your rack.

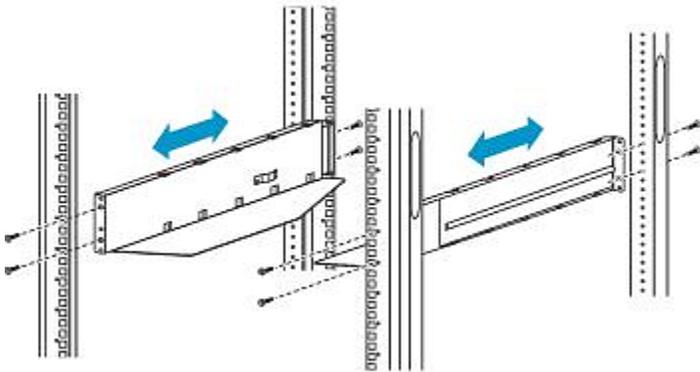
- The HP System/E rack has 7.1 mm round holes in the rack column. Choose the bag labeled **HP Rack System/E**.
- The HP 5000 and 10000 racks have 9.5 mm square holes in the rack column. Choose the bag labeled **HP Rack 5000, 10000**.



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3 Securing the rails to the rack

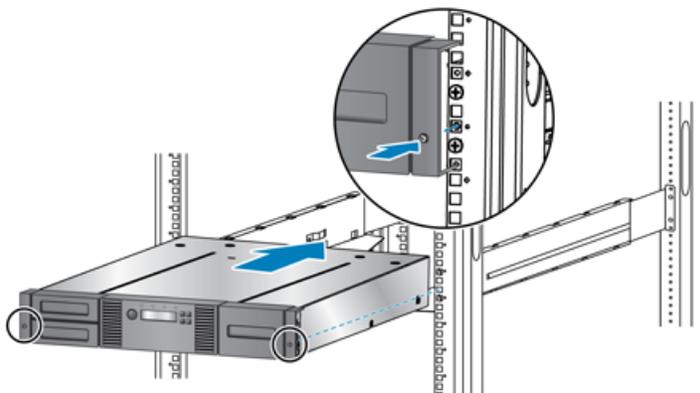
Using the screws for your rack type and a #3 Phillips screwdriver, secure the front of one rail to the rack. Extend the rail and secure the back of the rail to the rack. Secure the other rail to the rack. The front of the rails is straight and the back is angled, as shown.



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4 Installing the Library

Slide the Library onto the rails in the rack. Secure the front bezel to the rack using a #2 Phillips screwdriver placed through the small holes in the mounting bracket to tighten the captive screws on each side of the Library.



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Optional: Adding a tape drive

With a tape drive upgrade kit, the Library can hold up to two half-height Ultrium tape drives.

Remove the drive bay cover. Position the tape drive on the alignment rails, then slowly slide it into the bay until it is firmly seated. Tighten the blue thumbscrews with your fingers until the tape drive is secure.



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NOTE:

The tape drives are numbered from the bottom up. If your Tape Library did not come with a tape drive, install the first tape drive in the bottom drive bay.

5a Planning the FC configuration

The FC tape drive has two FC ports. Only one port may be used at a time, but both ports can be connected for path failover if your application supports path failover.

Direct connection

You will need a 2 Gb, 4 Gb, or 8 Gb FC HBA. A 4 Gb HBA is recommended for LTO-4 tape drives for optimum performance. An 8 Gb HBA is recommended for LTO-5 tape drives for optimum performance.

SAN connection

All switches between the host and the Library must be of the appropriate type. For example, a 2 Gb switch in the path may result in performance degradation when backing up highly compressible data to a 4 Gb tape drive.



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Configure zoning on the Fibre switch so only the backup servers can access the Library.

NOTE:

See Step 13 for additional FC configuration information. See the user and service guide for instructions on changing the FC configuration.

5b Planning the parallel SCSI configuration

If you are unfamiliar with configuring parallel SCSI devices, read the parallel SCSI configuration information in the user and service guide.

Follow these general guidelines when planning the parallel SCSI configuration:

- The LTO-3 and LTO-4 tape drives are Ultra320 parallel SCSI devices. Only attach one LTO-3 or LTO-4 tape drive per Ultra320 bus. Attaching an LTO-3 or LTO-4 tape drive on a lower performance bus may degrade its performance. Do not connect an LTO tape drive to an SE SCSI bus because it will seriously degrade performance.
- The LTO-2 tape drive is an Ultra160 parallel SCSI device. Up to two LTO-2 tape drives can share an Ultra320 bus or each tape drive can be on its own Ultra160 bus.
- Avoid attaching the Library to the same SCSI bus as a disk drive or SE device.
- The default SCSI ID of the bottom half-height or full-height tape drive is 4. The default SCSI ID of the top half-height tape drive is 5.



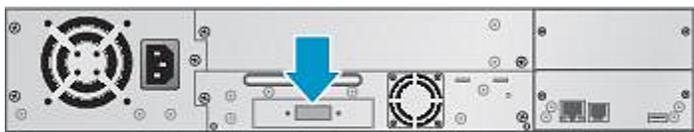
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5c Planning the SAS configuration

The server must have a SAS HBA with an external connector.

NOTE:

Most HP SAS RAID controllers support Tape Libraries; many non-HP SAS RAID controllers do not support Tape Libraries.



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WARNING!

Do not connect the Library to a SAS RAID controller unless the EBS compatibility matrix shows that the controller is qualified with the Library. The server might not be able to boot when the Library is connected to a non-supported SAS RAID controller. See the EBS compatibility matrix at <http://www.hp.com/go/ebs>.

6 Changing the SCSI ID

On a parallel SCSI Library, if you need to change the SCSI ID for one or both of the tape drives, do so before connecting the Library to the host computer.

1. Attach the power cord to the Library.
2. Power on the Library by pressing the power button on the front panel.
3. On the front panel, press **Enter**.
4. Press **Next** until the display shows Configuration. Press **Enter**.
5. Press **Next** until the display shows Change Drive 1 or Change Drive 2. Press **Enter** to select the tape drive that needs a new SCSI ID.
6. Press **Next** until the display shows the new SCSI ID. Press **Enter**.
7. Change the SCSI ID of the other tape drive if necessary.

TIP:

The SCSI ID can also be changed from the RMI **Configure: Drive** screen once the RMI is configured.

7 Preparing the host

If necessary, install software, an HBA, and compatible drivers in the host computer.

For parallel SCSI and SAS Libraries, ensure that your HBA supports multiple LUNs. For parallel SCSI devices, verify that multiple LUN support is enabled for the HBA and operating system.

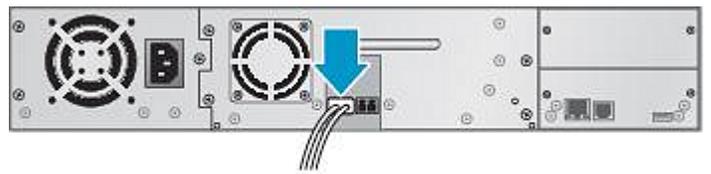
Check the EBS matrix at <http://www.hp.com/go/ebs> to verify that your HBA is supported on your host computer and qualified with the Library.

Install the HP Library & Tape Tools diagnostic utility available from <http://www.hp.com/support/TapeTools> to see what devices are connected to the host, verify the installation, upgrade firmware, and to aid in troubleshooting.

HP recommends that the host server be powered off before attaching new devices.

8a Connecting the Library: FC

Remove the FC port dust cap from Port A. Attach one end of the FC cable to Port A on the tape drive. Attach the other end of the FC cable to a switch or HBA.



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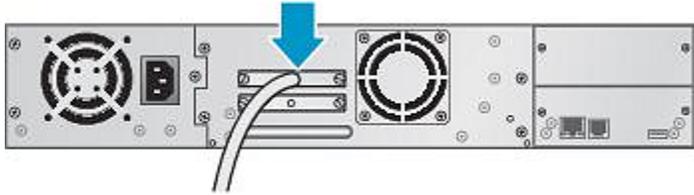
8b Connecting the Library: parallel SCSI

NOTE:

For optimal performance, a parallel SCSI LTO-3 or LTO-4 tape drive should be the only device on the bus. A maximum of two LTO-2 tape drives can be on a single Ultra320 bus.

Attach one end of the parallel SCSI cable to one of the connectors on the tape drive. Attach the other end of the cable to the HBA or to the connector on the previous device on the SCSI bus.

If the tape drive is the last or only device on the SCSI bus, attach a terminator to the remaining SCSI connector on the tape drive. Otherwise, attach a SCSI cable to the next device on the SCSI bus. Make sure that the last device on the SCSI bus is properly terminated.



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Connect the second tape drive, if applicable.

8c Connecting the Library: SAS

The SAS cable recommended for use with the Library has four mini-SAS connectors on the tape drive end with a SAS 4x (IB) or mini-SAS connector on the HBA end, depending on the connector on your HBA. This cable can be used to connect up to four tape drives to a SAS HBA. Any of the four connectors can be used for any tape drive.



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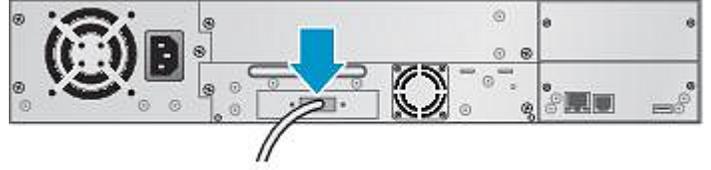
CAUTION:

Mini-SAS connectors are keyed. Do not force a SAS cable's mini-SAS connector into the tape drive mini-SAS connector because it might be keyed differently.

CAUTION:

SAS signal rates require clean connections with a minimum number of connections between the HBA and the Library. Do not use adapters or converters between the HBA and the Library. HP recommends a maximum SAS cable length of six meters.

Attach the HBA end of the cable to the SAS HBA. Attach a connector to each tape drive.



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The unused ends of a fanout cable are single channel and not suitable for use with most disk arrays. Use the other ends to connect tape drives, or coil and secure them to the rack to minimize stress on the connectors.

NOTE:

Each of the tape drives uses one channel and the cable recommended for use with the Library maps each of the four channels from the HBA to one channel on the drive end. You can plug any of the four drive connectors into any tape drive.

9 Powering on the Library

To use the web-based management interface, plug one end of the Ethernet cable into the Ethernet port on the back of the Library. Plug the other end of the cable into an Ethernet LAN port.

Plug the power cable into the Library from an AC power outlet.

Power on the Library using the power button located on the front panel. Check the LCD screen to make sure the Library is receiving power.



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Power on the host server and all devices you powered off earlier.

See page 12 for the OCP menu.

10 Configuring the Library network

Configuring the network enables you to monitor, configure, and control most Library functions from the remote management interface (RMI). By default, the Library will request an IP address from a DHCP server. Optionally, you can configure the Library to use a static IP address. Once logged into the RMI, you can administer further network changes through the RMI.

NOTE:

Most IPv4 network configurations are also available through the OCP.

The Library supports IPv4 and IPv6 Internet Protocols. By default, the Library is configured to use IPv4, the most common current version. You can enable IPv6 or both Internet Protocols from the OCP or RMI, and then continue configuring IPv6 settings from the RMI.

NOTE:

The Library is shipped without an administrator password. You must set the administrator password with the OCP before you can use the RMI administrator functions. Once the administrator password is set, you can access the RMI by providing the administrator password on the login screen.

To find the IPv4 IP address obtained via DHCP:

1. From the Home screen, press **Next** until the display shows *Status/Information*. Press **Enter**.
2. Press **Next** until the display shows *Network Information*. Press **Enter**.
3. The display shows *IPv4 Network Enabled*. Press **Enter**.
4. Press **Next** until the display shows the IP address.
5. Press **Cancel** until the display shows the home screen.

To set the IPv4 IP address or enable IPv6:

1. From the Home screen, press **Next** until the display shows *Configuration*. Press **Enter**.
2. Press **Next** until the display shows *Configure Network Settings*. Press **Enter**.
3. The display shows *IPv4 Network Enabled*. To change the setting, press **Enter**. Press **Next** until the display shows the desired setting. Press **Enter** to accept the new setting.
4. Press **Next** until the display shows *IPv6 Networking*. To enable IPv6 networking, press **Enter**. The display shows *IPv6 Network Disabled*. To change the setting, press **Enter**. Press **Next** until the display shows the desired setting. Press **Enter** to accept the new setting.

If IPv4 networking is enabled, you can continue configuring the IPv4 network settings from the OCP:

1. From the Home screen, press **Next** until the display shows *Configuration*. Press **Enter**.

2. Press **Next** until the display shows *Configure Network Settings*. Press **Enter**.
3. Press **Next** until the display shows *IPv4 Networking*. Press **Enter**.
4. Press **Next** until the display shows *DHCP (IPv4) Enabled*. To change the setting, press **Enter**. Press **Next** until the screen displays the desired setting. Press **Enter** to accept the new setting.
5. If DHCPv4 is disabled, press **Next** to display the IP address. To change the IP address, press **Enter**. Set the new IP address with the **Next** and **Enter** keys.
6. Press **Next** to display the subnet mask. To change the subnet mask, press **Enter**. Set the new subnet mask with the **Next** and **Enter** keys.
7. Press **Next** to display the gateway address. To change the gateway address, press **Enter**. Set the new subnet address with the **Next** and **Enter** keys.

If you enabled IPv6, you must continue configuring IPv6 from the RMI after setting the administrator password in Step 12. You can find the IPv6 IP address obtained by the Library from the OCP *Information/Status > Network Information* menu item. See the *HP StorageWorks MSL2024, MSL4048, MSL8048, and MSL8096 User and service guide* included in the product documentation for additional information on configuring IPv6.

11 Setting the date and time

This option sets the date and time used by the Library to record events and should be set during the initial installation process. You can also set the date and time from the RMI **Configure: System** screen.

Access to this feature requires the administrator password, if set.

To set the date and time from the OCP:

1. From the Home screen, press **Next** until the display shows *Library Date/Time*. Press **Enter**.
2. Enter the administrator password, if requested.
3. A number in the year will flash. Click **Next** until the correct number is displayed. Click **Enter** to accept the number. Repeat for each number in the date and time.
4. Press **Cancel** until the display shows the home screen.

NOTE:

When setting the hours, the time is based on a 24-hour clock. There is no a.m. or p.m. designation. For example, 1:00 p.m. is 13:00.

NOTE:

The Library time does not automatically adjust for daylight saving time; you must adjust the time manually through the OCP or RMI.

12 Setting the administrator password

Setting an administrator password provides access to the administrator functions with the RMI and OCP, and restricts access to administrator functions to only those who know the administrator password. The Library comes with a null administrator password, which until set allows unrestricted access to all administrative functions through the OCP but not the RMI. Once the administrator password has been set from the OCP, it can be changed from either the OCP or the RMI. The administrator password must be exactly eight digits consisting of the numbers 0 through 9.

To set the administrator password:

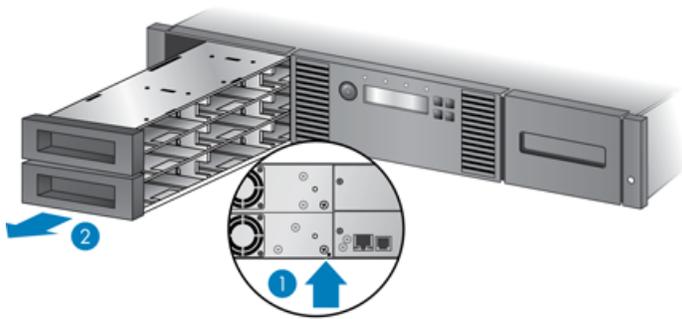
1. On the OCP, press **Enter**.
2. Press **Next** until the display shows *Configuration*. Press **Enter**.
3. Press **Enter** to change the administrator password.
4. The first number will flash. Press **Next** until the first number for the new password is displayed. Press **Enter** to accept the number. The next number flashes. Repeat for each number in the password.
5. Press **Cancel** twice to move to the top of the menu.

13 Configuring the FC ports

HP recommends leaving the FC ports at the default settings of **Port Speed: Automatic** and **Port Type: Auto Detect**. With these settings, the tape drive will choose the appropriate configuration. See the user and service guide for instructions on changing the FC configuration.

14 Magazine release

When possible, release the magazines from the OCP or RMI. If you must remove the magazines when the Library is not powered on: 1) insert a straightened paper clip or small pin about 1.5 cm (0.6 inch) into the magazine release hole, while 2) another person pulls out the magazine from that side.

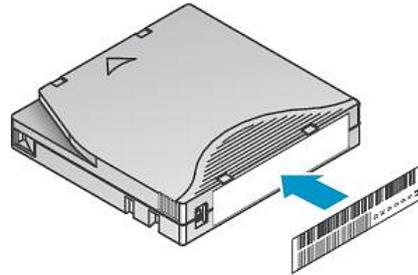


! IMPORTANT:

Do not force the pin once you encounter resistance. Doing so can damage the Library.

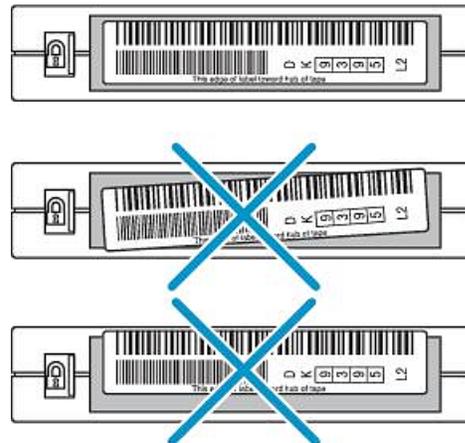
15 Labeling tape cartridges

Attaching a bar code label to each tape cartridge enables the Library and application software to identify the cartridge quickly, thereby speeding up inventory time. Make it a practice to use bar code labels on your tape cartridges.



! IMPORTANT:

The misuse and misunderstanding of bar code technology can result in backup and restore failures. To ensure that your bar codes meet HP quality standards, always purchase them from an approved supplier and never print bar code labels yourself. For more information, refer to the Bar Code Label Requirements, Compatibility, and Usage white paper available from [nl http://www.hp.com/support](http://www.hp.com/support).



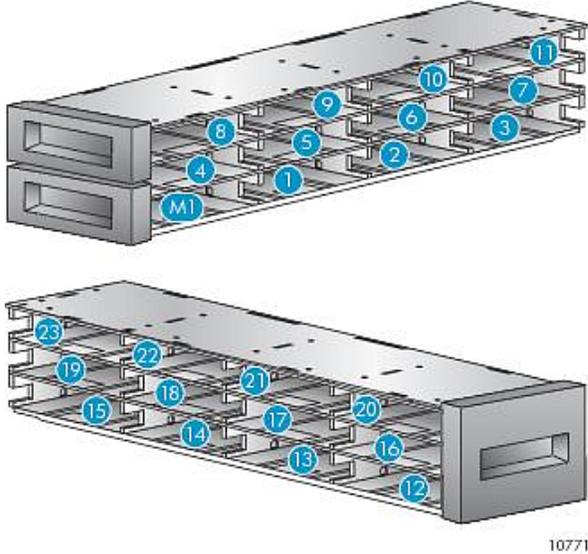
Ultrium tape cartridges have a recessed area located on the face of the cartridge next to the write-protect switch. Use only this recessed area for attaching the adhesive-backed bar code label. Only apply labels as designated.

16 Loading cartridges

Use the front panel **Operations > Unlock Left Magazine** option to release the left magazine. Pull the magazine straight out of the front of the Library. If requested, provide the administrator password to access the left magazines.

Insert the tape cartridges into the slots. By default, the slots are numbered 1 to 24, starting with the bottom front left slot.

To use the mailslot feature, leave the bottom slot in the front of the left magazine empty. The rest of the slot numbers are adjusted as shown.



NOTE:

When the mailslot is disabled, the mailslot becomes slot 1 and all other slots are renumbered.

Replace the magazines in the Library.

Repeat for the right magazines. The right magazines do not have a mailslot.

17 Verifying the installation

Verify that the Library has the current firmware revision, and update to the latest firmware if necessary.

To find the version of firmware installed on the Library, see the RMI **Support: Firmware** screen, or from the OCP:

1. From the Home screen, press **Next** until the display shows *Status/Information*. Press **Enter**.
2. Press **Next** until the display shows *Library Information*. Press **Enter**.
3. Press **Next** until the display shows the *Firmware Rev.*
4. Press **Cancel** until the display shows the home screen.

To find the current firmware revision, visit the <http://www.hp.com/support> website and download the firmware files.

If necessary, update the firmware from the RMI **Support: Firmware** screen or HP StorageWorks Library & Tape Tools (L&TT).

You can use L&TT to verify the installation. L&TT is especially useful for checking the drives and HBA settings on your server, viewing connectivity to your host, downloading firmware, and running diagnostics on the Library and tape drives.

You can download the latest L&TT from <http://www.hp.com/support/tapetools>.

After configuring the Library, you can save the configuration database to a USB flash drive from the OCP or to a file from the RMI **Configuration > Save/Restore** screen. Having a backup of the Library configuration is helpful when recovering from a configuration error, setting up multiple Libraries with similar configurations, or if the Library needs service.

18 Configuring additional features

The Library has many features to customize for your organization. See the *HP StorageWorks MSL2024, MSL4048, MSL8048, and MSL8096 User and service guide* for more information about these features and instructions for their configuration.

- Partitioning a Library with two tape drives into two logical libraries.
- Configuring IPv6 networking.
- Enabling and configuring SNMP network management.
- Configuring the CommandView TL management station for TapeAssure.
- Setting up email event notification.
- Naming the Library.

The HP StorageWorks Encryption Kit provides secure, redundant storage of encryption keys for LTO-4 and later generation tape drives. If you are using the Encryption Kit on this Library follow the instructions in the kit to install and configure the Encryption Kit. The Encryption Kit is ordered separately. For information about the kit, see <http://www.hp.com/go/tape>.

Ordering media

Use HP storage media to prolong the life of the Library and tape drives. To learn more about, or to purchase HP media, visit <http://www.hp.com/go/storagemedia>.



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LTO-2 Ultrium 448 tape drive

Cartridge type	Part number
HP LTO2 Ultrium 400 GB Data Cartridge, red	C7972A
HP Ultrium universal cleaning cartridge, (50 cleans), orange	C7978A

LTO-3 Ultrium 920 and 960 tape drives

Cartridge type	Part number
HP LTO3 Ultrium 800 GB RW Data Cartridge, yellow	C7973A
HP LTO3 Ultrium 800 GB WORM Data Cartridge, two-tone (yellow and white)	C7973W
HP Ultrium universal cleaning cartridge, (50 cleans), orange	C7978A

LTO-4 Ultrium 1760 and 1840 tape drives

Cartridge type	Part number
HP LTO4 Ultrium 1.6 TB RW Data Cartridge, green	C7974A
HP LTO4 Ultrium 1.6 TB WORM Data Cartridge, two-tone (green and gray)	C7974W
HP Ultrium universal cleaning cartridge, (50 cleans), orange	C7978A

LTO-5 Ultrium 3000 and 3280 tape drives

Cartridge type	Part number
HP LTO5 Ultrium 3 TB RW Data Cartridge, blue	C7975A
HP LTO5 Ultrium 3 TB WORM Data Cartridge, two-tone (blue and gray)	C7975W
HP Ultrium universal cleaning cartridge, (50 cleans), orange	C7978A

Helpful websites

For other product information, see the following websites:

<http://www.hp.com/go/ebs>

<http://www.hp.com/go/tape>

<http://www.hp.com/go/storage>

www.hp.com/support/cvtl

<http://www.hp.com/support>

<http://www.hp.com/support/mslg3tstree>

<http://www.hp.com/support/TapeTools>

<http://www.hp.com>

HP technical support

Telephone numbers for worldwide technical support are listed on the HP support website: <http://www.hp.com/support>.

Collect the following information before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions

For continuous quality improvement, calls may be recorded or monitored.

HP strongly recommends that customers sign up online using the Subscriber's choice website: <http://www.hp.com/go/e-updates>.

Subscribing to this service provides you with e-mail updates on the latest product enhancements, newest versions of drivers, and firmware documentation updates as well as instant access to numerous other product resources.

After signing up, you can quickly locate your products by selecting **Business support** and then **Storage** under **Product Category**.

Registering your Library

Register your Tape Library online at www.register.hp.com. HP customers who register join a select group to receive technical support updates and special HP offers.

Related documentation

For complete product documentation, including the *HP StorageWorks MSL2024, MSL4048, MSL8048, and MSL8096 user and service guide* in English, French, German, Italian, Japanese, and Spanish, see the HP support website at: <http://www.hp.com/support/manuals>.

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