

StorageTek SL48 Tape Library Getting started



STORAGETEK

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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. See Step 1, Removing and storing the shipping lock.

WARNING!

The StorageTek SL48 Tape Library weighs 30.2 kg (66 lb) without media and 46 kg (101.4 lb) with media (48 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.
-

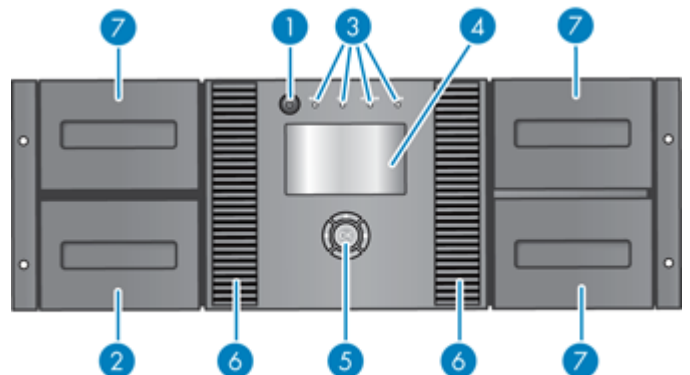
WARNING!

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.
-

Front panel overview

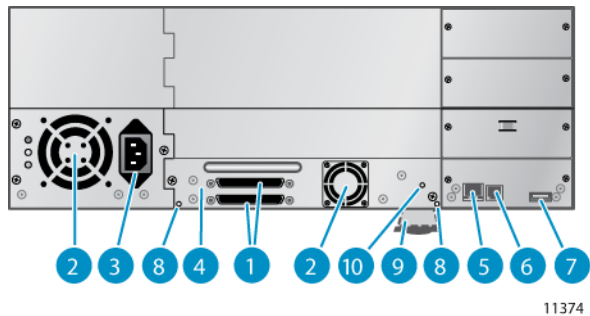
Oracle's StorageTek SL48 Tape Library is a self-contained automated tape library. Below is a figure of the front panel.



11995

- | | | |
|-----------------|--------------------------|--------------|
| 1. Power button | 2. Magazine and mailslot | 3. LEDs |
| 4. LCD screen | 5. Control keys | 6. Air vents |
| 7. Magazine | | |

Back panel overview: parallel SCSI



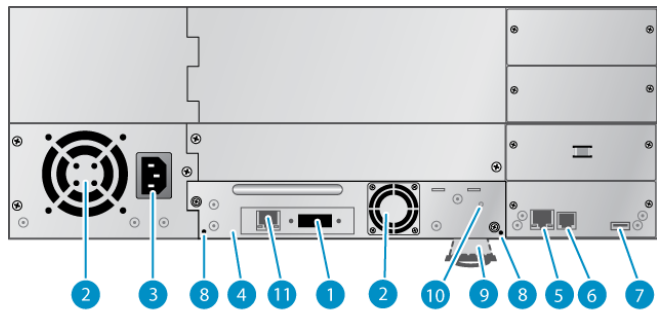
11374

- | | |
|--|-----------------------------------|
| 1. 68-pin HD parallel SCSI connectors | 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.

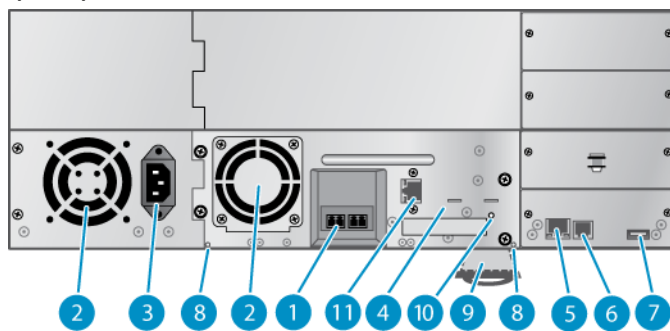
Back panel overview: SAS



11375

- | | |
|--|-----------------------------------|
| 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 |
| 11. Tape drive Ethernet port (LTO-5 only) | |

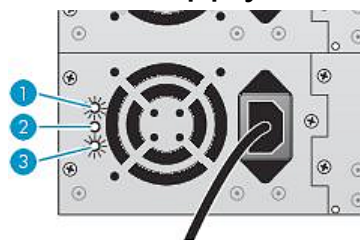
Back panel overview: Fibre Channel (FC)



11372

- | | |
|--|-----------------------------------|
| 1. Fibre Channel 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 |
| 11. Tape drive Ethernet port (LTO-5 only) | |

Power supply LEDs

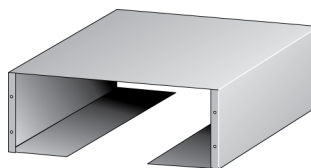


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- | | |
|-----------|---|
| 1. Blue | AC power is connected. |
| 2. Yellow | Fan failure. The fan is running too slow or is defective. |
| 3. Green | The power supply is producing good power for the Library. |

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.



11370

Using the operator control panel (OCP)

The OCP has a power button, four LEDs, five control keys, and an LCD screen. With the OCP, you can monitor, configure, and operate most Library functions from the Library front panel.



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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 five control keys: **Up**, **Down**, **Left**, **Right**, and **OK**.



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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 Autoloader 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 Autoloader 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.

It is recommended 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 and downloading firmware via a USB flash drive.

To enable the Library 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.

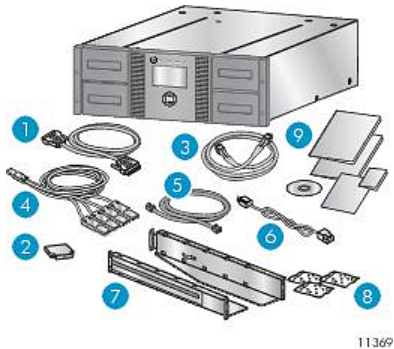


The red X **Status Error** icon indicates that user intervention is required and that the device is not capable of performing some operations.

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 from the Library. Save the packaging materials to move or ship the Library in the future.

Identifying product components



11369

Confirm that you received the following product components:

1. Parallel SCSI cable (parallel SCSI Libraries — ordered separately)
2. U320 parallel SCSI terminator (one per parallel SCSI drive)
3. Fibre Channel cable (Fibre Channel Libraries — ordered separately)
4. SAS cable to connect up to four SAS drives (SAS Libraries)
5. Ethernet cable (ordered separately)
6. Power cord (ordered separately)
7. Rack rails
8. Three packets of rack hardware
9. Documentation kit

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 cables of the length specified as qualified for your products.

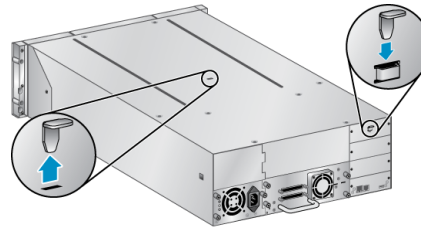
1 Removing and storing the shipping lock

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

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.

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.



11402

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



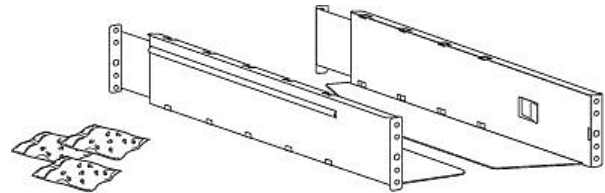
11377

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

You will need a #2 Phillips screwdriver, a small flat screwdriver, the two rack rails, and the hardware packets for your rack.



11420

Racks having vertical mounting rails with 10–32 threaded holes in the rack column (Sun StorEdge Expansion Cabinet).

- You will need the **Standard rack hardware** packet and the packet of alignment pins marked **10–32 threaded-hole rack**.

Racks having vertical mounting rails with M6 threaded holes in the rack column (Sun Rack 900 and 1000).

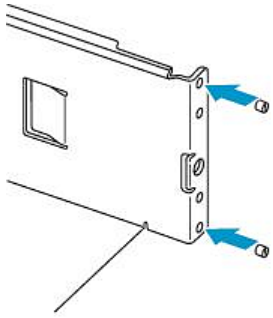
- You will need the **Standard rack hardware** packet.

Racks having vertical mounting rails with 9.5 mm square holes in the rack column (Sun StorageTek Rack).

- You will need the **Standard rack hardware** packet and the packet of alignment pins and clip nuts marked **9.5 mm square-hole rack**.

Customizing the rails for 10–32 threaded-hole racks

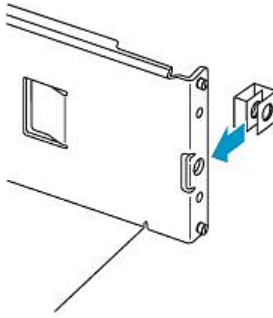
Using a flat screwdriver, replace the two alignment pins on the front and back of each rail with the pins from the **10–32 threaded-hole rack** packet.



11421

Customizing the rails for M6 threaded-hole racks

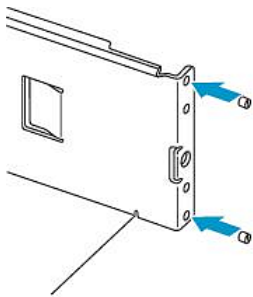
Insert a clip nut from the **Standard rack hardware** packet onto the back of the large hole on the front of each rail.



11422

Customizing the rails for 9.5 mm square-hole racks

Using a flat screwdriver, replace the two alignment pins on the front and back of each rail with the pins from the **9.5 mm square-hole rack** packet.

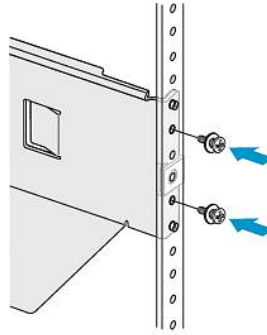


11421

Insert a clip nut from the **Standard rack hardware** packet onto the back of the large hole on the front of each rail.

3 Securing the rails to the rack

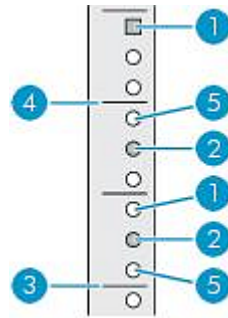
Using two screws with two flat washers from the **Standard rack hardware** packet, secure the front of one rail to the front of the rack. Extend the rail and secure the back of the rail to the rack using two screws with washers.



11423

Secure the other rail in a similar fashion.

4 Installing additional clip nuts



11425

1. Clip nut location
2. Rail screw location
3. Base of Library
4. Rack markers spaced 1U apart
5. Alignment pin location

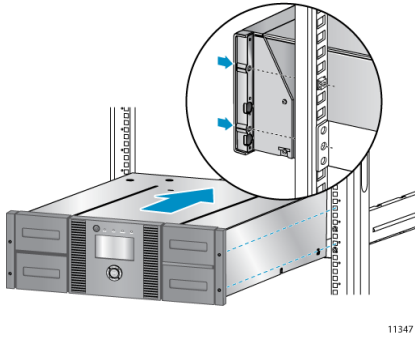
10–32 threaded-hole racks (Sun StorEdge Expansion Cabinet): No additional clip nuts are needed; skip this step.

M6 threaded-hole racks (Sun Rack 900 and 1000): On the front of the rack, install one clip nut from the **Standard rack hardware** packet on each side in the top location shown.

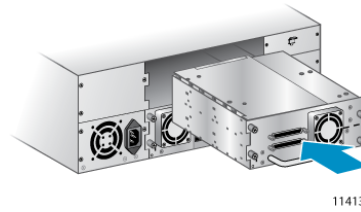
9.5 mm square-hole racks (Sun StorageTek Rack): On the front of the rack, install one clip nut from the **9.5 mm square-hole rack** packet on each side in the top location shown.

5 Installing the Library

Slide the Library onto the rails. 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.



Slide the tape drive into the bay until it is firmly seated. Tighten the blue thumbscrews with your fingers to secure the tape drive.



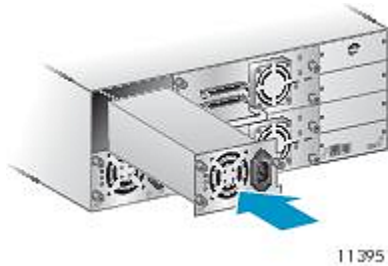
NOTE:

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

Optional: Adding a power supply

With the redundant power supply upgrade kit, the Library will continue to operate without interruption if either power supply fails.

To install the redundant power supply, remove the cover plate for the redundant power supply with a #2 Phillips screwdriver. Slide the power supply into the bay until it is firmly seated. Tighten the three blue thumbscrews with your fingers to secure the power supply.



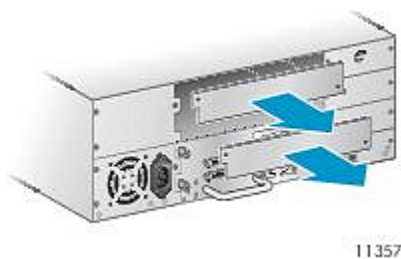
Optional: Adding a tape drive

With a tape drive upgrade kit, the Library can hold up to four half-height LTO tape drives or two full-height tape drives.

Add the new tape drive directly above the currently installed tape drive. Remove one drive bay cover for a half-height tape drive or two drive bay covers for a full-height tape drive.

NOTE:

The Library will not operate with a full-height tape drive installed in the second and third half-height drive bays. Install a full-height tape drive either in the bottom two drive bays or the top two drive bays.



6a Planning the FC configuration

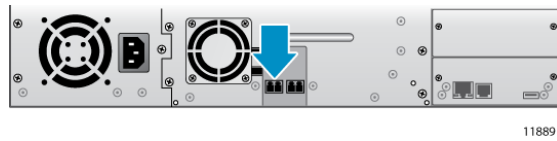
The FC tape drive has two FC ports. Only one port may be used at a time, but both ports can be connected for path failover if your application supports path failover.

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. A 2 Gb switch in the path may result in performance degradation when backing up highly compressible data to a 4 Gb tape drive. A 4 Gb switch in the path may result in performance degradation when backing up highly compressible data to an 8 Gb tape drive.



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

NOTE:

See 14 Configuring the FC ports for additional FC configuration information. See the *StorageTek SL24 Tape Autoloader and SL48 Tape Library User and service guide* on the documentation CD for instructions on changing the FC configuration.

6b Planning the SAS configuration

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

NOTE:

Most SAS RAID controllers do not support Tape Libraries.



11887

WARNING!

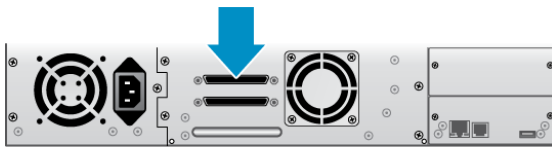
Do not connect the Library to a SAS RAID controller unless the controller is qualified with the Library. The server might not be able to boot when the Library is connected to a non-supported SAS RAID controller.

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.

6c Planning the parallel SCSI configuration

If you are unfamiliar with configuring parallel SCSI devices, read the parallel SCSI configuration information in the *StorageTek SL24 Tape Autoloader and SL48 Tape Library User and service guide* on the documentation CD.

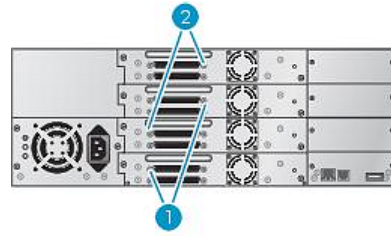


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Follow these general guidelines when planning the parallel SCSI configuration:

- LTO-3 and LTO-4 tape drives are Ultra320 parallel SCSI devices; LTO-2 tape drives are Ultra160. Only attach one LTO-3 or LTO-4 tape drive per Ultra320 bus. Attaching a 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.
- Avoid attaching the Library to the same SCSI bus as a disk drive or SE device.

- The default SCSI ID of both full-height tape drives is 4. The default SCSI ID of half-height tape drives is 4 or 5, depending on the location of the tape drive in the Library as shown below.



11435

1. Half-height tape drives with SCSI ID 4
2. Half-height tape drives with SCSI ID 5

7 Changing the SCSI ID

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

1. Attach the power cord to the Library.
2. Power on the Library by pressing the power button on the front panel.
3. Use the control keys below the LCD screen to highlight **Configuration > Drives > Drive #**, where # is the number of the tape drive whose SCSI ID you need to change. Press the **OK** key.
4. Press **OK** to select the highlighted block. Use the **Up** and **Down** control keys to change the SCSI ID. Press **OK** to select the value.
5. Highlight **Save** and press **OK** to save the SCSI ID.
6. Change the SCSI ID of the other tape drive if necessary.

8 Preparing the host

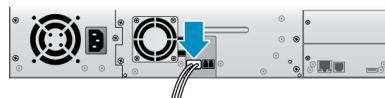
If necessary, install software, a host bus adapter (HBA), and compatible drivers in the host computer.

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.

It is recommended that the host server be powered off before attaching new devices.

9a Connecting the Library: FC

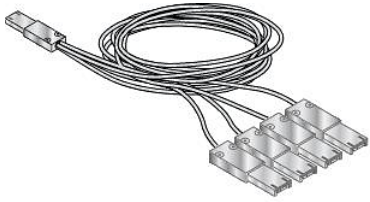
Remove the FC port dust cap from Port A. Attach one end of the FC cable to Port A on the tape drive. Attach the other end of the FC cable to a switch or HBA.



11890

9b Connecting the Library: SAS

The SAS cable recommended for use with the Library has a mini-SAS connector on the HBA end and four mini-SAS connectors on the tape drive end. 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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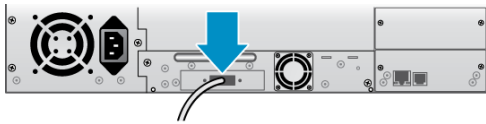
CAUTION:

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. For reliable operation, use 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.



11888

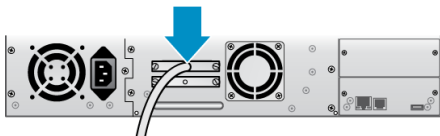
The unused ends of a fanout cable are single channel and not suitable for use with most disk arrays. Use the other ends to connect tape drives, or coil and secure them to the rack to minimize stress on the connectors.

NOTE:

Each of the tape drives uses one channel and the cable supplied 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.

9c Connecting the Library: parallel SCSI

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.



11885

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.

Connect the other tape drives, if applicable.

NOTE:

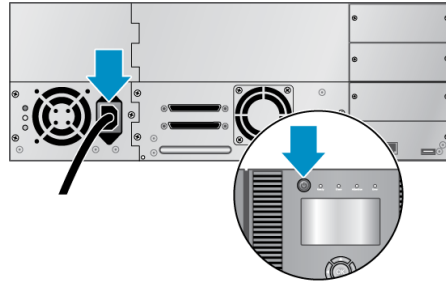
For optimal performance, a parallel SCSI tape drive should be the only device on the bus.

10 Powering on the Library

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. Repeat for the redundant power supply, if installed.

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.



11352

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

See page 12 for the OCP menu.

11 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 an IPv4 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 initially using the OCP before you can use the RMI administrator functions. Once the administrator password is set, you can access the RMI administrator functions by providing the administrator password on the login screen.

The IPv4 address obtained from a DHCP server is displayed in the OCP home screen and the **Info > Network** option.

If your organization requires a static IPv4 address or uses IPv6, you can configure those features from within the **Info > Network** option.

If you enabled IPv6, you must continue configuring IPv6 from the RMI after setting the administrator password in Step 12. See the *StorageTek SL24 Tape Autoloader and SL48 Tape Library User and service guide* included in the product documentation for additional information on configuring IPv6.

12 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.

To set the date and time from the OCP:

1. On the front panel, highlight **Configuration > Set Date and Time**. Press **OK**.
2. Press **OK** to select the first block that can be edited. Use the **Left** and **Right** control keys to move between digits in the Date and Time fields. Use the **Up** and **Down** control keys to change the value of the highlighted digit. When the screen shows the desired value, press **OK**.

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.

13 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.

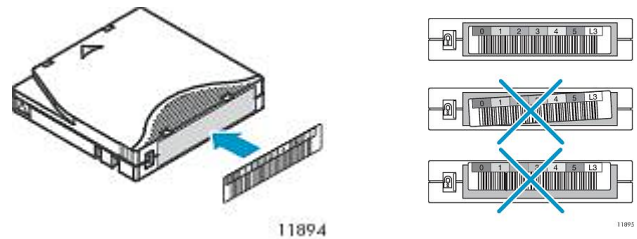
To set the administrator password:

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.

14 Configuring the FC ports

For most situations, leave 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 *StorageTek SL24 Tape Autoloader and StorageTek SL48 Tape Library User and service guide* on the documentation CD for instructions on changing the FC configuration.

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.

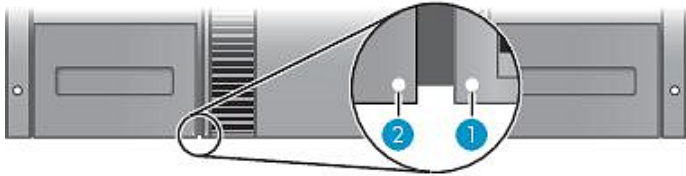
IMPORTANT:

The misuse and misunderstanding of bar code technology can result in backup and restore failures. To ensure that your bar codes meet quality standards, always purchase them from an approved supplier and never print bar code labels yourself.

LTO 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 tape cartridges

You can use the mailslot to import and export tape cartridges. To load or unload more tape cartridges at a time, you can remove the magazines and load the cartridges into them. Use the front panel **Operations > Unlock Left Magazines** option to release the left magazines. If requested, provide the administrator password to access the magazines. Pull both magazines straight out of the front of the Library.



10848

The lower left magazine, which is designated by a white dot on the lower right corner, has a three-slot mailslot in the front of the magazine. Leave the three slots in the front of the magazine empty if you plan to enable the mailslot.

Insert the tape cartridges into the magazines.

Replace the magazines in the Library.

Repeat for the right magazines.

17 Verifying the installation

Verify that the Library has the most up-to-date firmware revision and upgrade the firmware if necessary. You can upgrade firmware from the OCP using a USB flash drive or through the RMI.

To see the firmware revision of the Library on the front panel:

1. Use the control keys to navigate to **Info > Identity > Library**.
2. The **Library Controller FW Revision** field shows the Library firmware revision.

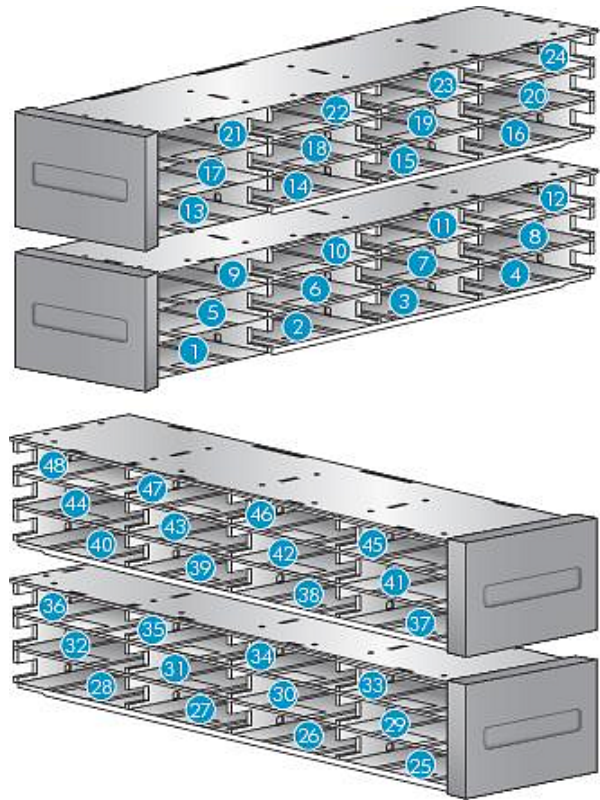
To find the current firmware revision, visit the <http://sunsolve.sun.com> website.

18 Configuring additional features

The Library has many features to customize for your organization. See the *StorageTek SL24 Tape Autoloader and SL48 Tape Library User and service guide* on the documentation CD for more information about these features and instructions for their configuration.

- Partitioning a Library into logical libraries.
- Configuring IPv6 networking.
- Enabling and configuring SNMP network management.
- Naming the Library.

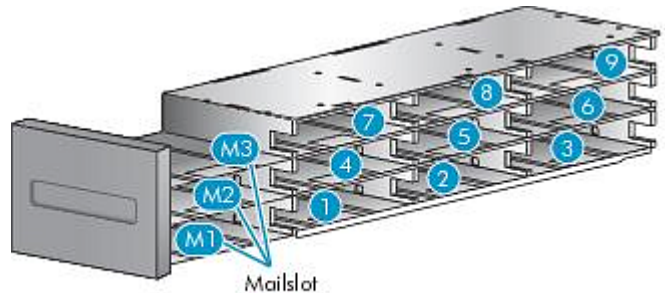
Slot numbering



11407

NOTE:

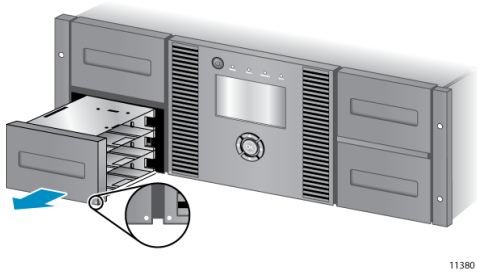
When the mailslot is enabled, the slots in the lower-left magazine are numbered as below. All other slots are renumbered.



11292

Mailslot

Enabling the mailslot in the left magazine allows you to insert and remove tapes without removing the magazine and without the need for the administrative password. You can open the mailslot from the front panel or with host software that supports this function. The mailslot cannot be opened with the RMI.



When the mailslot is enabled, the mailslot uses the front three slots of the lower left magazine and the storage slots are renumbered.

TIP:

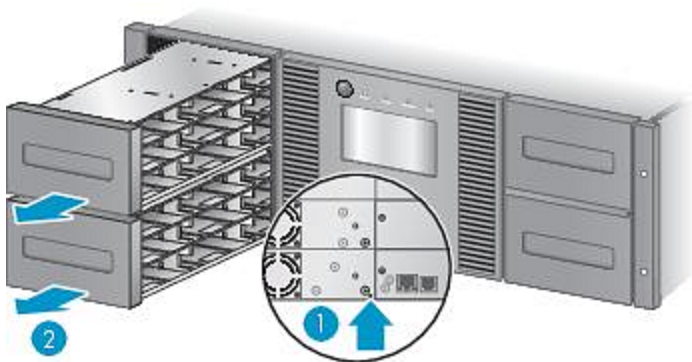
To see the slot numbering for your Library in its current configuration, see the RMI **Status > Inventory** screen.

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 paperclip or small pin about 1.5 cm (0.6 inch) into the magazine release hole on the back panel, while 2) another person removes the magazines from that side.

IMPORTANT:

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



Ordering media

Use the Ultrium data and cleaning tape cartridges designed for your model of Library. To order data and cleaning cartridges please use the contact information below to locate the nearest tape media reseller:

- In the US contact 1 877 STK Tape
- Outside US contact tapemediorders_ww@oracle.com



Related documentation

The *StorageTek SL24 Tape Autoloader and SL48 Tape Library User and service guide* on the documentation CD includes additional information about installing, configuring, upgrading, and operating the Library. English, Japanese, French, German, Spanish, Simplified Chinese, Korean, and Italian versions of the guide can be found on the documentation website at: <http://docs.sun.com>.

Technical support

Call your local Support Center for warranty or contractual support. Contact numbers are at: <http://www.sun.com/contact/support.jsp>. Or, get self help at <http://sunsolve.sun.com>.

Helpful websites

For other product information, see the following websites:

<http://www.oracle.com/us/sun/index.html>

<http://sunsolve.sun.com>

<http://docs.sun.com>

<http://www.oracle.com/us/products/servers-storage/storage/tape-storage/index.html>

<http://www.sun.com/bigadmin/home/index.html>

OCP menu

