



Spectra Stack Library

Installation & Quick Configuration Guide



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Part Number

90970037 Revision A

Revision History

Revision	Date	Description
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A	March 2018	Initial release.
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- Notes:**
- To make sure you have the most current version of this guide check the Spectra Logic Technical Support portal at support.spectralogic.com/documentation/user-guides/.
 - To make sure you have the release notes for the most current version of the BlueVision software, check the Spectra Logic Technical Support portal at support.spectralogic.com/documentation/release-notes/.

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ABOUT THIS GUIDE

Document Purpose

This document provides information to install and operate the Spectra Stack library. The instructions are intended for the trained system administrators and trained users who need physical and functional knowledge of the library.

The main components are:

- Control Module PN: STACK BASE
- Expansion Module PN: STACK EXP

Product Warranty Caution

Customers should only perform the service and repair actions on the tape library components using replacement instructions available on the Spectra Logic support portal. Any other actions must be performed by authorized service personnel.

The warranty for the tape library shall not apply to failures of any unit when:

- The tape library is repaired or modified by anyone other than the manufacturer's personnel or approved agent.
- The tape library is physically abused or used in a manner that is inconsistent with the operating instructions or product specification defined by the manufacturer.
- The tape library fails because of accident, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, modification, or service by anyone other than authorized service personnel.
- The tape library is repaired by anyone, including approved technicians, in a manner that is contrary to the maintenance or installation instructions supplied by the manufacturer.
- The manufacturer's serial number tag is removed.
- The tape library is damaged because of improper packaging on return.

The warranty becomes immediately void in the event of unauthorized repairs or modifications.

GENERAL WARNINGS

Document Conventions

This document uses the following conventions to highlight important information:

**WARNING**

Read text marked by the “Warning” icon for information you must know to avoid personal injury.

**Caution**

Read text marked by the “Caution” icon for information you must know to avoid damaging the library or the tape drives, or losing data.

**Important**

Read text marked by the “Important” icon for information that helps you complete a procedure or avoid extra steps.

Note: Read text marked with “Note” for additional information or suggestions about the current topic.

General Product Warnings

**WARNING**

High voltage

Risk of electric shock

- Do not remove covers (top, bottom or rear). No user-serviceable parts are inside.
 - Refer servicing to qualified service personnel.
-

**WARNING****Product Weight**

Risk of personal injury

Before lifting a module:

- Observe local health and safety requirements and guidelines for manual material handling.
- Remove all tapes to reduce the weight.
- Remove all tape drives to reduce the weight.
- Obtain adequate assistance to lift and stabilize the module during installation or removal.

Risk of damage to devices

When placing a module into or removing the module from a rack:

- Extend the rack's levelling jacks to the floor.
- Ensure that the full weight of the rack rests on the levelling jacks.
- Install stabilizing feet on the rack.
- Extend only one rack component at a time.

**Caution****Static Sensitive**

Risk of damage to devices

- A discharge of static electricity damages static-sensitive devices or micro circuitry.
- Proper packaging and grounding techniques are necessary precautions to prevent damage.

- Notes:**
- Ventilation - Place the product in a location that does not interfere with proper ventilation.
 - Heat - Place the product in a location away from heat sources.
 - Power sources - Connect the product to a power source only of the type directed in the operating instructions or as marked on the product.
 - Power cord protection - Place the AC line cord so that it is not possible to be walked on or pinched by items placed upon or against it.
 - Object and liquid entry - Insure that objects do not fall onto and that liquids are not spilled into the product's enclosure.

SPECTRA STACK LIBRARY INSTALLATION

Built with maximum flexibility at its core, the Spectra Stack tape library will meet your backup, archive, and perpetual storage requirements. Designed to be easily installed, expanded, and managed, the Spectra Stack is rated at 100% duty cycle - meaning it is one of the only stackable libraries built to perform in a 24/7 environment. Each module of the Spectra Stack holds an additional 10 to 80 tape slots, and 1 to 6 tape drives.

Scalable from 10 to 560 tape slots and 1 to 42 tape drives, users can store more than 6.7 PB (16.7 PB compressed) of data in a single 19-inch NEMA rack with a fully expanded Spectra Stack library. This extreme flexibility provides affordability and expandability without compromise.

Use this checklist to ensure that all installation steps are completed.

Status	Overview
<input type="checkbox"/>	Review the features of the Spectra Stack library (see Product Overview on page 12).
Status	Planning for the Installation
<input type="checkbox"/>	Required Tools and Supplies on page 18.
<input type="checkbox"/>	Location Requirements on page 18.
<input type="checkbox"/>	SAS Configuration Requirements on page 19 Fibre Channel Configuration Requirements on page 19.
<input type="checkbox"/>	Plan Rack Layout for Modules on page 20.
Status	Installing the Library
<input type="checkbox"/>	Reviewed installation precautions (see Precautions on page 20).
<input type="checkbox"/>	Unpacking the Library Modules on page 21.
<input type="checkbox"/>	Inventory Library Components on page 21.
<input type="checkbox"/>	Prepare Top and Bottom Modules on page 22.
<input type="checkbox"/>	Install Rack Mounting Hardware on page 24.

<input type="checkbox"/>	Install Modules in a Rack on page 26.
<input type="checkbox"/>	Align and Connecting Modules on page 28.
<input type="checkbox"/>	Install Tape Drives on page 29.
<input type="checkbox"/>	Connect Cables on page 30.

PRODUCT OVERVIEW

All Spectra® Stack library installations begin with the 6U high Control Module, with capacity for 80 tape cartridges and up to six half-height LTO tape drives or up to three full-height LTO tape drives.

The Spectra Stack library is expandable, allowing a user to grow their tape storage capacity as their data requirements increase. As data storage needs grow, the Spectra Stack library can also grow by adding one or more 6U high Expansion Module(s). Each Expansion Module supports an additional 80 tape cartridges and an additional six half-height LTO tape drives or three full-height LTO tape drives.

Up to six Expansion Modules can be added to a Control Module, bringing the total library capacity to 560 tape cartridges.

Front Panel

This section describes the features accessible from the front panel of the library.

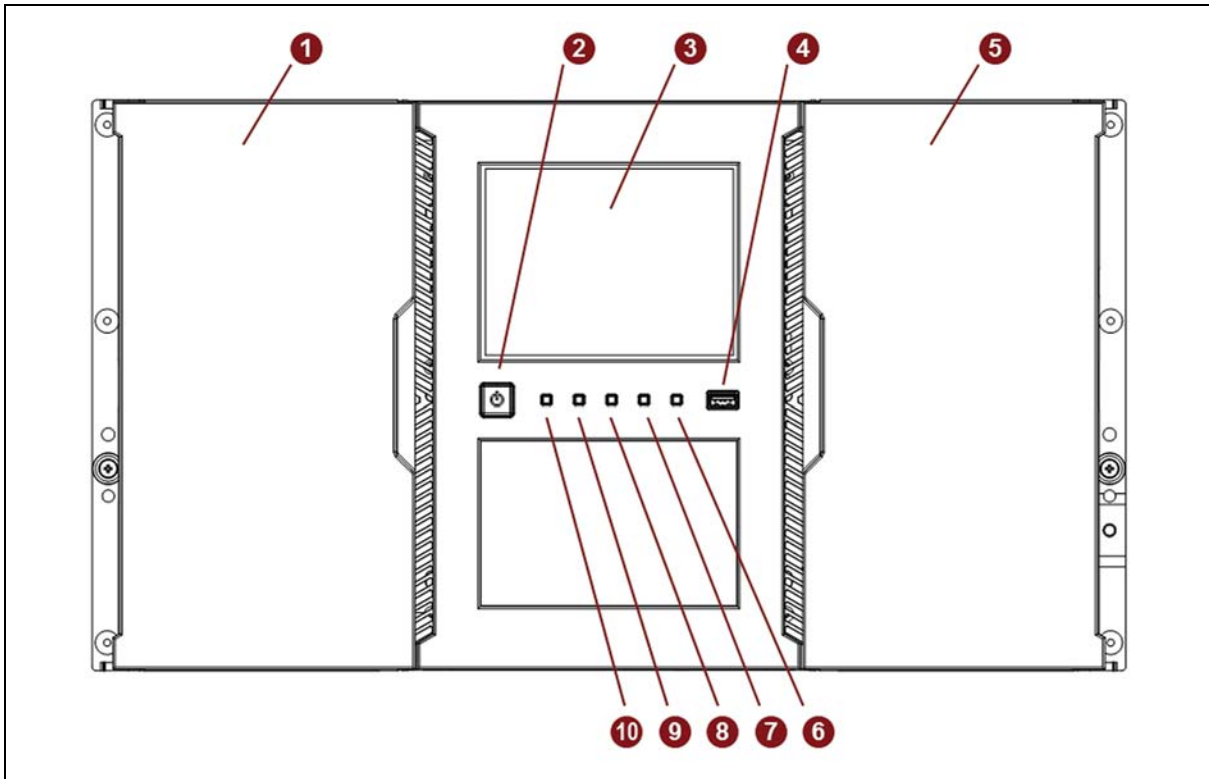


Figure 1 The front view of the Spectra Stack library.

Number	Component	Description
1	Magazine Access Door	
2	Power Button	Control Module Only
3	Operator Control Panel (OCP)	Color LCD display with touchscreen (Control Module Only).
4	USB Port	Control Module Only
5	EE Port/Magazine Access Door	
6	Error LED - Amber	Control Module Only - This LED illuminates when the library detects an unrecoverable tape drive or library error and is not capable of operation. Details of the error are displayed on the front panel screen.
7	Attention LED - Amber	Control Module Only - This LED illuminates when the library detects a condition which requires manual intervention, but which does not prevent the library from performing most operations.

Number	Component	Description
8	Clean LED - Amber	Control Module Only - This LED illuminates when a tape drive cleaning is needed.
9	Ready LED - Green	Control Module Only - This LED is steady green when the library is on, and blinks green when there is library robotic activity.
10	Unit Identification LED - Blue	Control Module Only - The unit identification LEDs on the front and back of the Control Module are controlled by a user through the library interface. These lights are helpful for locating the library in a data center.

Rear Panel

This section describes the features accessible from the rear panel of the library.

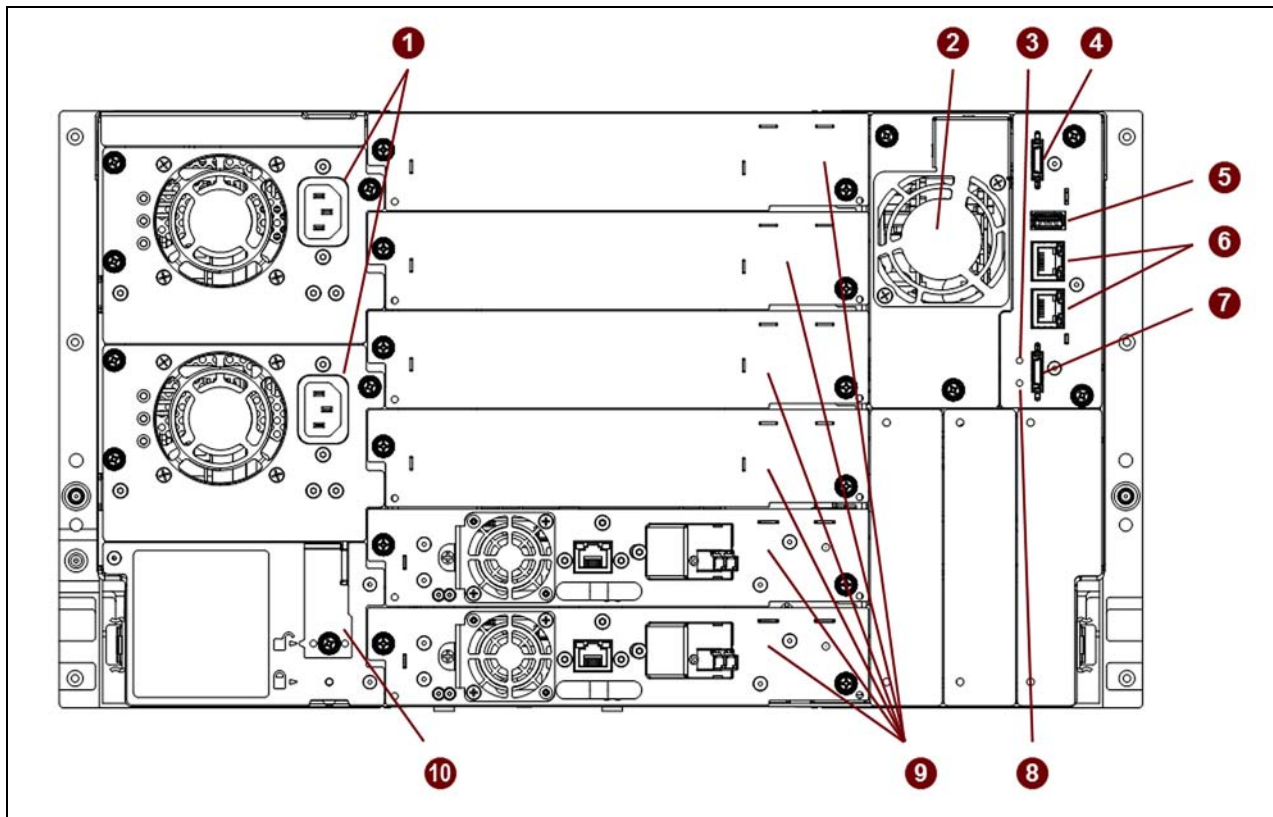


Figure 2 The rear view of the Spectra Stack library.

Number	Component	Description
1	Power Supplies	
2	Chassis Fan	
3	Controller Health Status LED - Green	

Number	Component	Description
4	Upper Expansion Module Connection Port	
5	USB Port	Control Module Only
6	Ethernet Ports	Control Module Only
7	Upper Expansion Module Connection Port	
8	Unit Identifier LED - Blue	
9	Drive Bays	Half-height drive bays shown.
10	Module Alignment Mechanism	

Tape Drive Back Panels

This section describes the elements of LTO tape drives used in the library.

Note: Only half-height drives are shown below. Full-height drives use the same connectors as half-height drives in similar locations on the back of the drive.

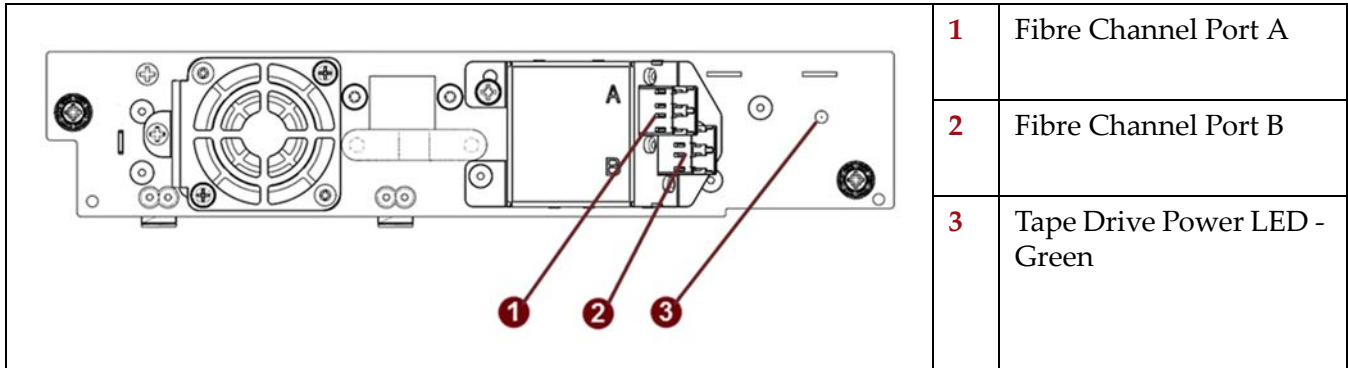
IBM LTO-5/6/7/8 Half-Height SAS Drive

	1	SAS Port A
	2	SAS Port B
	3	Tape Drive Power LED - Green

IBM LTO-5/6/7/8 Half-Height Single FC Port Drive

	1	Fibre Channel Port A
	2	Tape Drive Power LED - Green

IBM LTO-5/6/7/8 Half-Height Dual FC Port Drive



Power Supply Back Panel

This section describes the power supply LEDs.

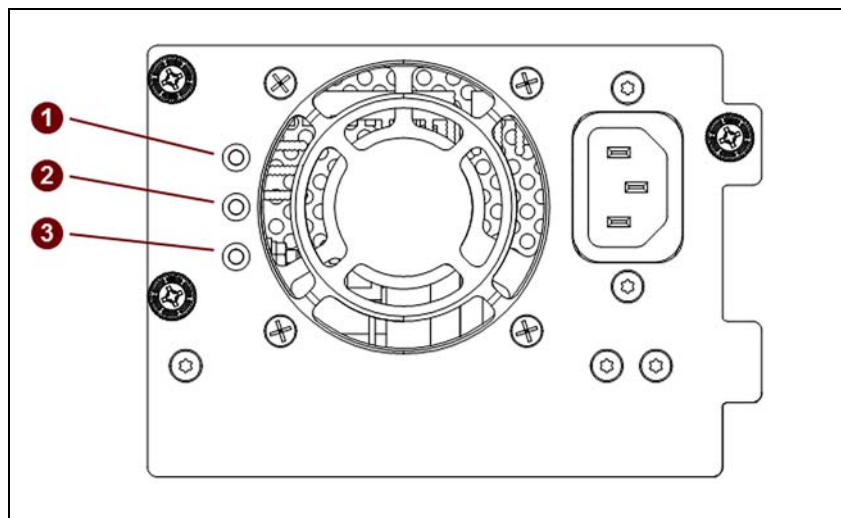


Figure 3 The library power supply LEDs.

Number	LED Color	Description
1	White	AC power is connected, but the library is powered off.
2	Amber	Power supply fault condition. This can occur if the power supply fan fails, or if the temperature or electrical power output is outside of specification.
3	Green	Module powered on.

Element Numbering

The library generally displays the logical numbering of modules, storage slots, and drives, from the bottom of the library to the top.

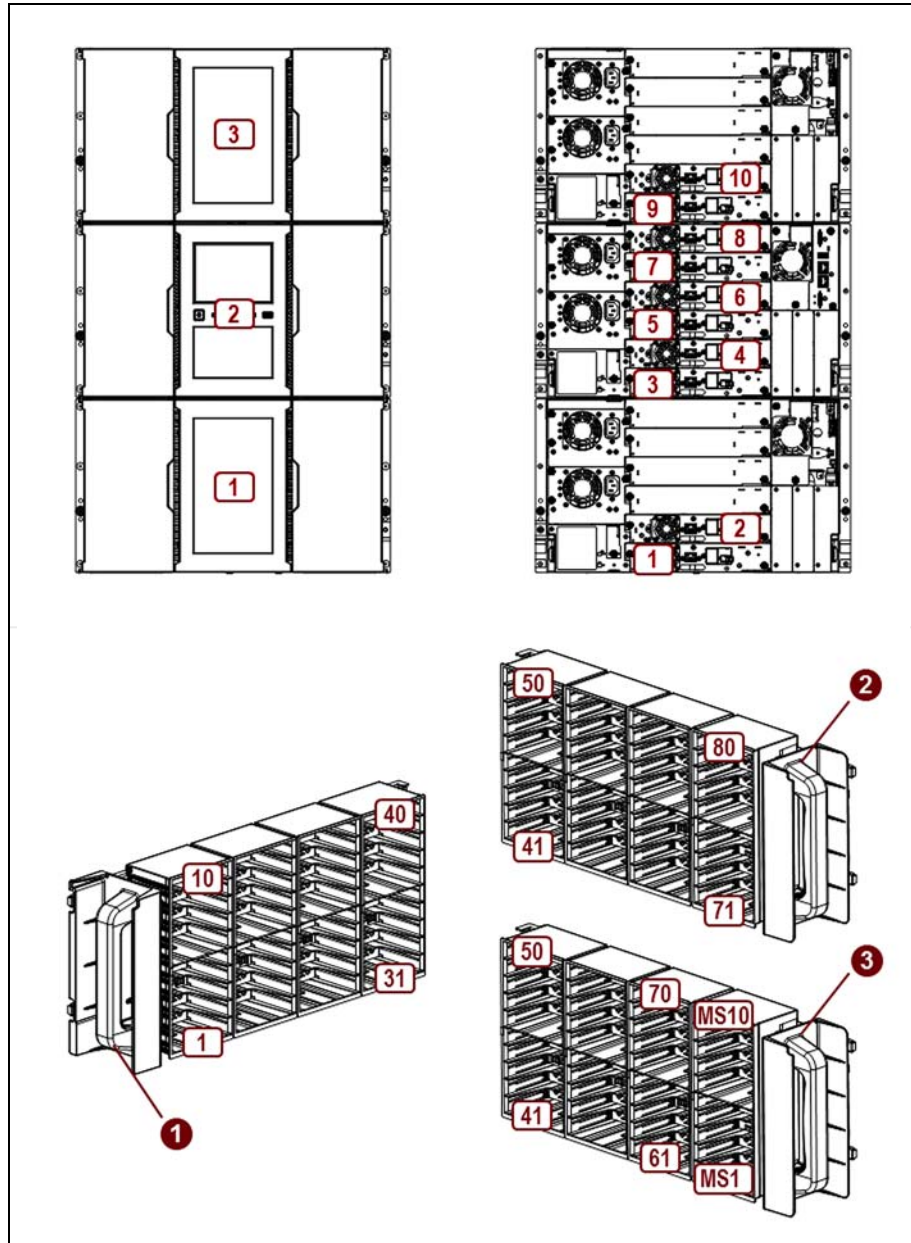


Figure 4 Example of library element numbering.

Number	Description
1	Left magazine
2	Right magazine with EE port disabled
3	Right magazine with EE port enabled

PLANNING THE LIBRARY INSTALLATION

Before installing the library, it is important to prepare the installation site with the procedures in the following sections:

- Chose a location for the library (see [Location Requirements on page 18](#))
- Plan the necessary SAS and/or Fibre Channel cabling:
 - see [SAS Configuration Requirements on page 19](#))
 - see [Fibre Channel Configuration Requirements on page 19](#)
- Plan the rack layout (see [Plan Rack Layout for Modules on page 20](#))

Required Tools and Supplies

Gather the required materials and supplies:

- #1 Phillips screwdriver
- Sturdy work surface

Location Requirements

Confirm that the desired installation location conforms to the requirements below.



Caution

The Spectra Stack library must be installed in a rack using the provided rack rails. Installation on a table or similar surface may result in library operation errors.

Requirement	Description
Rack	Standard 19-inch rack with 6U of open rack space per module. Note: If you plan to install the Spectra Stack library camera, an extra 1U of space at the top of the combined modules is required.
Power	Input Voltage: 100-240 VAC Input Frequency: 50-60 Hz Note: The AC power cord is the library’s main power disconnect device and must be easily accessible at all times.
Environment	Room Temperature: 50° F to 95° F (10° C to 35° C) Humidity: 20% to 80% (non-condensing) Note: The operation location should be as free of airborne particulates as possible. To eliminate obvious sources of particulates, do not permit anyone to smoke, eat, or drink near the library.

SAS Configuration Requirements

SAS drives installed in the library are connected directly from the drive to the HBA in the host computer.

The HBA in the host computer must support multiple Logical Unit Numbers (LUNs).

LTO SAS tape drives support the following SAS connection speeds:

LTO Generation	Supported Speeds
LTO-5	6 Gb/second, 3 Gb/second
LTO-6	6 Gb/second, 3 Gb/second, 1.5 Gb/second
LTO-7	6 Gb/second, 3 Gb/second, 1.5 Gb/second
LTO-8	6 Gb/second, 3 Gb/second, 1.5 Gb/second



Important

High quality SAS cables rated at the transfer rate of the installed SAS drives are required. SAS cables described as “equalized” may not support 6 Gb/s data rates and should not be used with LTO-5 or later generation tape drives unless these cables are verified for 6 Gb/s data rates.

Fibre Channel Configuration Requirements

Fibre Channel drives installed in the library are connected directly from the drive to the HBA in the host computer, or through a Storage Area Network (SAN). Fibre Channel tape drives use an LC-style connector. Some drives have two Fibre Channel ports, but only one cable connection is needed per drive. The cable can be connected to either port.

Fibre Channel tape drives support the following connection speeds:

LTO Generation	Supported Speeds
LTO-5	8 Gb/second, 4 Gb/second, 2 Gb/second, 1 Gb/second
LTO-6	8 Gb/second, 4 Gb/second, 2 Gb/second, 1 Gb/second
LTO-7	8 Gb/second, 4 Gb/second, 2 Gb/second
LTO-8	8 Gb/second, 4 Gb/second, 2 Gb/second



Important

Use an HBA appropriate for the installed drive type as required for performance. In a SAN installation, all switches between the host and the drive must be of the appropriate type. Lower Gbps switches or HBAs may result in performance degradation.

Plan Rack Layout for Modules

The Spectra Stack library includes the Control Module, and up to six Expansion Modules. The library supports rack configurations with a maximum of three Expansion Modules above the Control Module, and three below the Control Module.

The Control Module can be installed in any open 6U space in the rack. If you plan to install expansion nodes in the future, it is helpful to install the Control Module in the middle of the rack to allow space for the permitted configuration of three Expansion Modules above, and below, the Control Module.

Note: For more information on supported rack configurations, see the *Spectra Stack Library User Guide*.

INSTALLING THE LIBRARY

Use the information in the following sections to install the Spectra Stack library.

Precautions

It is important to understand the following precautions before installing the library.

Each Spectra Stack library module weighs approximately 88 lb (40 kg) without drives or tape cartridges installed, and approximately 144 lb (70 kg) with six tape drives and 80 tape cartridges installed.



Before moving or installing the library, observe local health and safety requirements and obtain adequate assistance to lift and stabilize the library during installation or removal.

When installing or removing a library module from a rack:

- 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.
-

Unpacking the Library Modules

Use the instructions in this section to unpack the library.



Caution

When a module is moved from a cold storage environment to a warm operating environment, it must acclimate for at least 24 hours before opening its packaging to prevent serious condensation damage from occurring.

1. Clear a work surface near the targeted rack where you plan to install the library.
2. Inspect the shipping container for damage. If you notice any damage, contact Spectra Logic Technical Support (see [Contacting Spectra Logic on page 7](#)).
3. Cut and remove the bands on the outside of the container.



WARNING

Take care when cutting the straps securing the shipping box. The straps around the packaging are secured very tightly; the tension may cause them to whip outward when cut, which could lead to personal injury.

4. Lift up the outer cardboard box. It is not secured to the pallet and lifts off easily.
5. Remove the inner cardboard sleeve surrounding the module.
6. Remove the rack rails and accessory kit.
7. Remove the foam pieces off of the top of the module.
8. With assistance, lift the module out of the bottom foam nest.
9. Remove the wrapping from the module and then place the module on a sturdy work surface.



Caution

To avoid damaging the library, do not place a module on its front or back ends, or either side.

10. Save the packaging materials for future use.

Inventory Library Components

Before proceeding, inspect the library components to ensure you have all the components required for installation.

If you unpacked a **Control Module**, confirm you received the following components in addition to the module:

- Two rack rails
- Accessory kit containing rack-mounting hardware, two US power cords, and two European power cords.

If you unpacked an **Expansion Module**, confirm you received the following components in addition to the module:

- Two rack rails
- Expansion Module interconnect cable
- Accessory kit containing rack-mounting hardware, two US power cords, and two European power cords.

- Notes:**
- Tape drives and tape media ship separately.
 - SAS cables and Fibre Channel cables must be provided by the customer.

Prepare Top and Bottom Modules

The Control Module has a removable cover at the top and bottom of the library chassis. If your library configuration includes one or more Expansion Modules, you must transfer one or both covers from the Control Module to the Expansion Module.

If your library configuration does not include an Expansion Module, skip to [Install Rack Mounting Hardware on page 24](#).

Use the instructions in this section to move a cover from the Control Module to an Expansion Module. The covers are identical and the procedure to move them is the same for both the top and bottom cover.



Caution

To avoid damaging the library when preparing the top and bottom covers, do not place a module on its front or back ends, or either side.

- If you are installing Expansion Modules below the Control Module, move the bottom cover from the Control Module to the Expansion Module that you plan to install as the bottom module of the library.
 - If you are installing Expansion Modules above the Control Module, move the top cover from the Control Module to the Expansion Module that you plan to install as the top module of the library.
1. Remove a cover from the Control Module.
 - a. If necessary, place the Control Module on a sturdy work surface. If you are removing the bottom cover, gently turn the Control Module over so you can access the bottom of the module.

- b.** Insert a small screwdriver into the hole (1) to retract the spring lock.

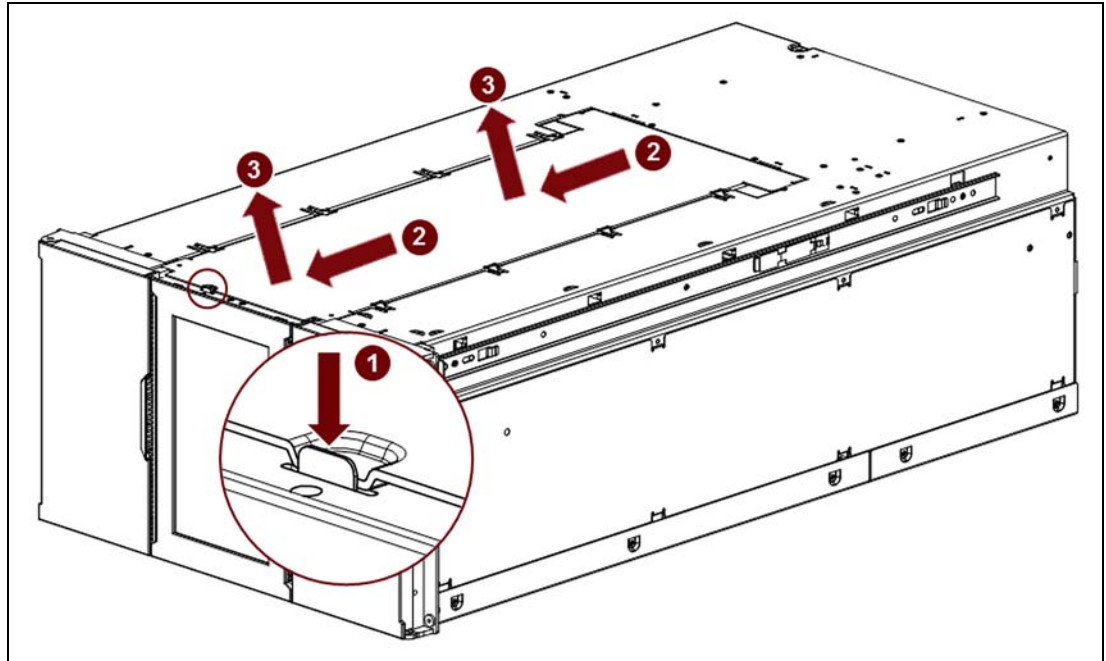


Figure 5 Remove a Control Module cover.

- c.** Slide the cover toward the front of the Control Module (2) until it contacts the screwdriver. Remove the screwdriver and continue sliding the cover until all the tabs are released.
 - d.** Lift the cover off the module (3).
 - e.** If the Control Module is upside down, gently return it to its normal position.
 - f.** If necessary, repeat [Step b](#) through [Step d](#) to remove the other cover.
- 2.** Install a cover on an Expansion Module.
- g.** If necessary, place the Expansion Module on a sturdy work surface. If you are installing the bottom cover, gently turn the Expansion Module over so you can access the bottom of the module.

- h. Align all tabs on the cover with the slots on the module, gently push it down, and then slide the cover towards the back of the module until the spring lock engages.

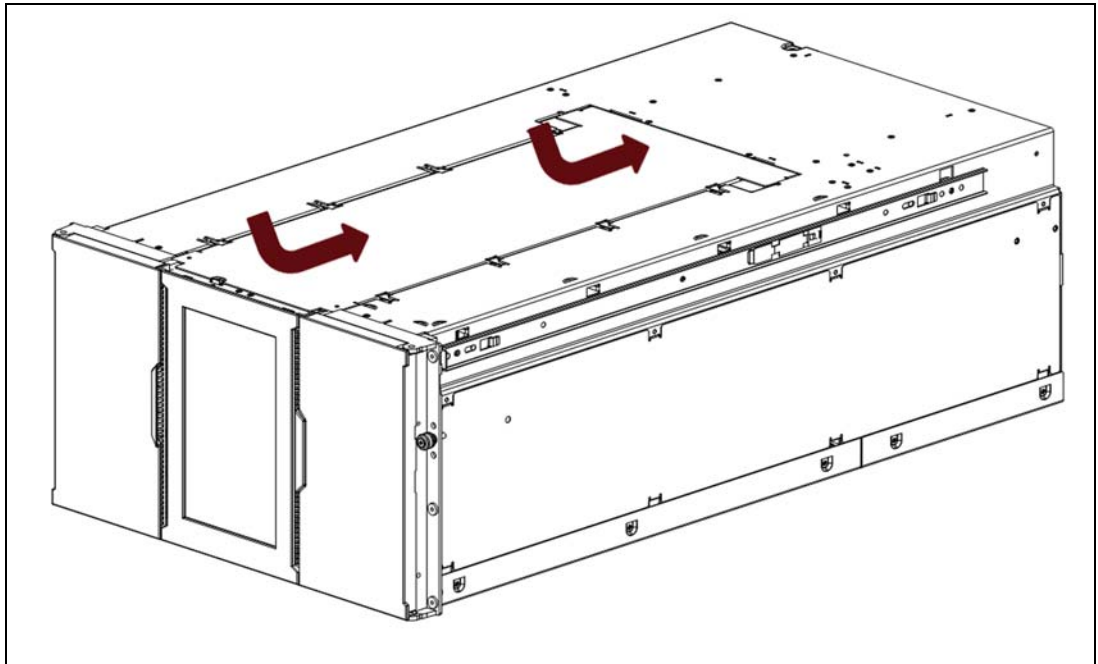


Figure 6 Install a cover on an Expansion Module.

- i. If the Expansion Module is upside down, gently return it to its normal position.

Install Rack Mounting Hardware

Use the instructions in this section to install the required rack hardware before installing a library module. Rack hardware is included in the accessory box shipped with each module.

1. Locate the position of the rack rails where you want to install the Control Module. The rail position corresponds to the lowest 1U of the module chassis.
2. If your library includes one or more Expansion Modules, locate the rail position for each additional module. Otherwise, continue to [Step 3](#).
3. Position each rail according to the left-right front-rear orientation information stamped on the rail.
4. From the front of the rack, position a rack rail inside the rack and insert the rear rail hangers into the holes of the rear vertical support of the rack.
5. Lower the front of the rail until the rail is approximately level.

6. Extend the front of the rail and insert the hangers through the holes in the vertical support of the rack until the retention spring snaps into place.

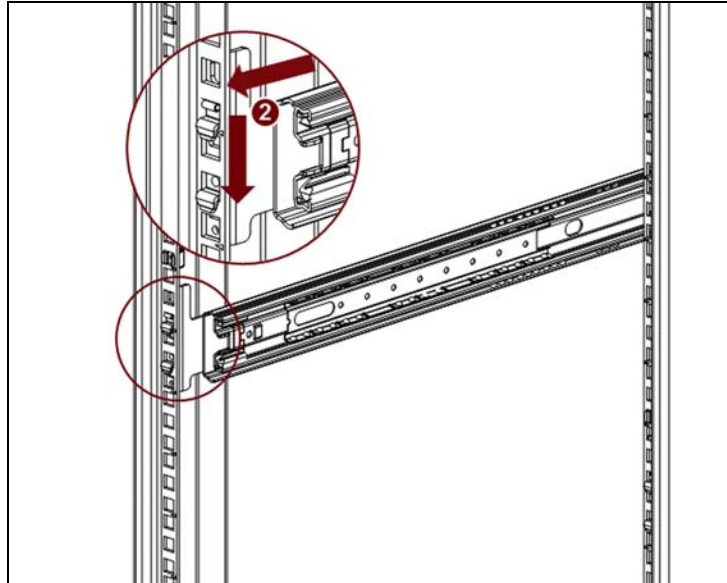


Figure 7 Install a rack rail.

7. Install a clip nut above the mounting bracket on both of the front vertical supports of the rack. Position the clip two holes above the top of the mounting bracket (1) at the front of the rail and push it through the hole in the vertical supports.
8. Install a retention insert (2) into the bottom of the mounting bracket (3).

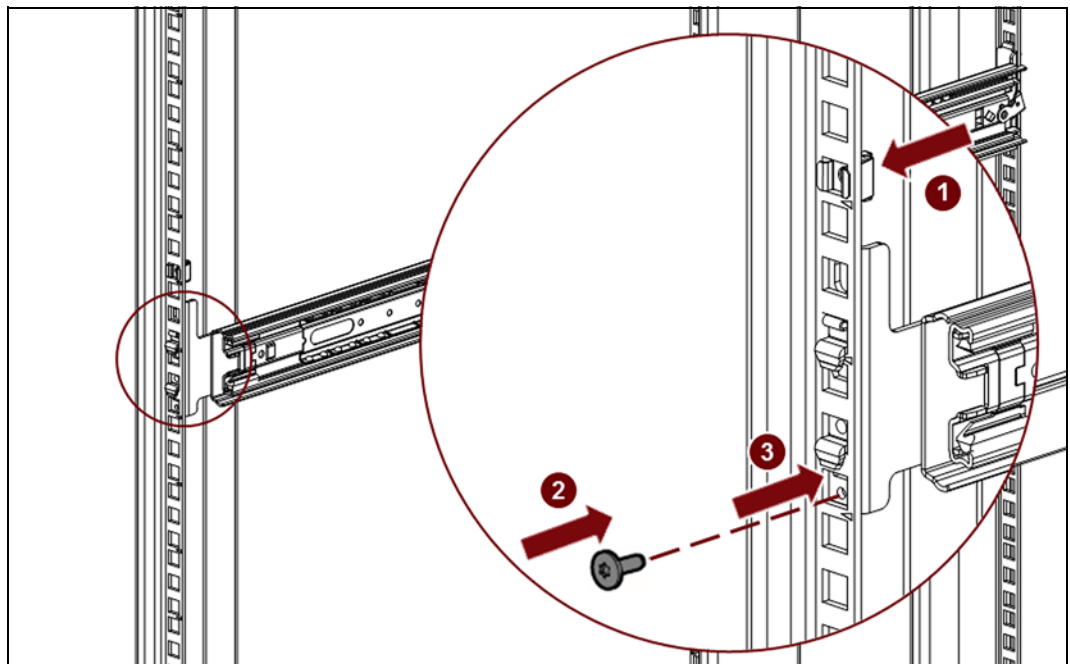


Figure 8 Install a clip nut and retention insert.

9. Repeat [Step 4](#) through [Step 8](#) for each additional rack rail.

Install Modules in a Rack



WARNING

Before moving or installing the library, observe local health and safety requirements and obtain adequate assistance to lift and stabilize the library during installation or removal.

When installing or removing a library module from a rack:

- 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.

Use the instructions in this section to install a module into a rack. If your library includes multiple modules, install the lowest module first, and proceed upward until all modules are installed.

1. Using two people or a lift, raise the library module to the height of the rack rails where you want to install the module.
2. Extend the middle rails of the rack rail until they lock in place (1).
3. Move the sliding assembly to the front of the middle rails (2).

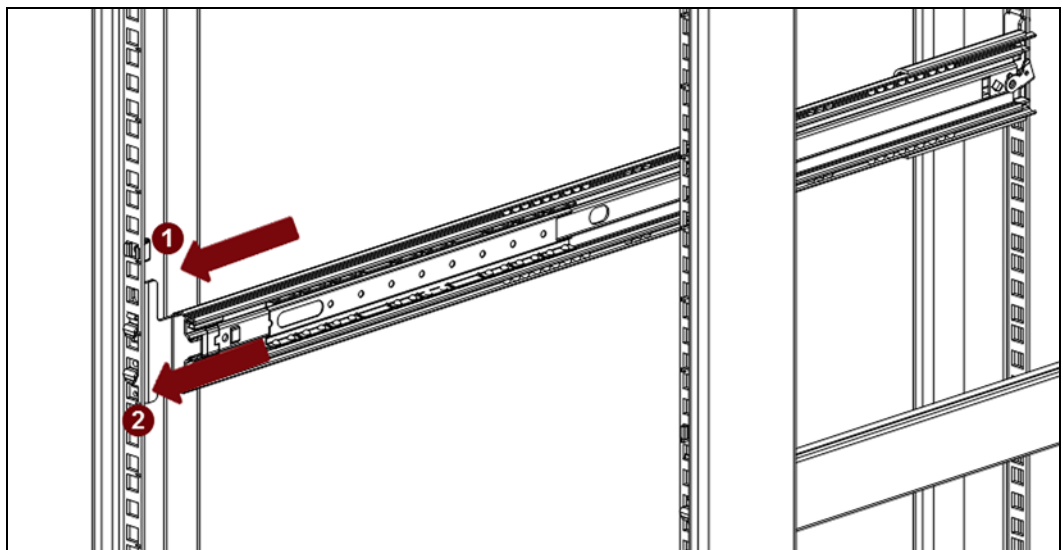


Figure 9 Extend the middle rail and move the sliding assembly forward.

4. Slide the rails attached to the library module into the middle rails (1) (see [Figure 10](#) on page 27).

- Slide the library module into the rack (2).

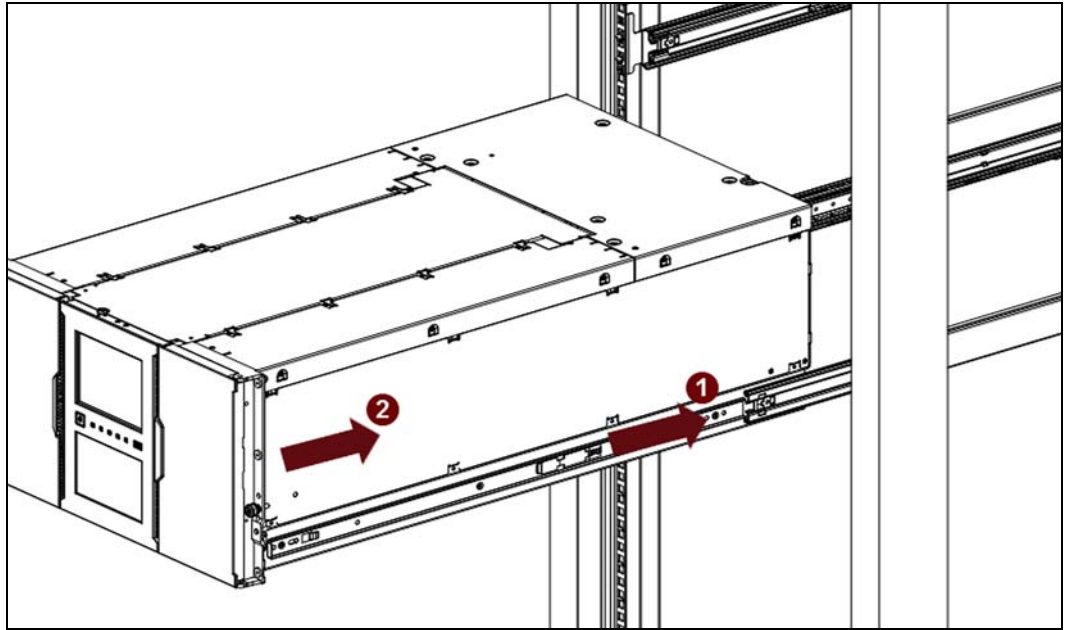


Figure 10 Slide the module into the middle rails and slide the module into the rack.

- Using your fingers, tighten the captive thumbscrews on each side of the module into the clip nuts installed in [Step 7](#) on page 25.

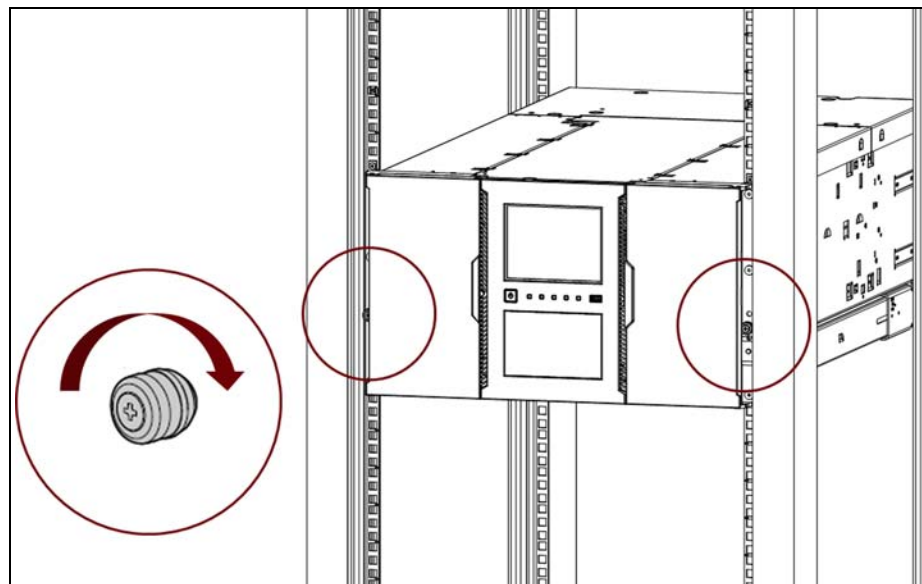


Figure 11 Tighten the captive thumbscrews.

- If necessary, repeat [Step 1](#) through [Step 6](#) for each additional module.



Important

If you are installing multiple modules, the gap between each module must be less than 0.16 inch (4 mm).

Align and Connecting Modules

Aligning the library modules ensures that the robot can move freely between each module.

If your library does not include any Expansion Modules, skip to [Install Tape Drives on page 29](#). Otherwise, continue with the instructions below.

1. From the front of the library, loosen the thumbscrews on both sides of each library module (see [Figure 11 on page 27](#)).
2. From the back of the library starting with the bottom pair of modules, align and connect each module with the one below.

Note: The alignment mechanism on the lowest module must be in the unlocked position.

- a. Loosen the thumbscrew on the module alignment mechanism on the upper module of the pair (1).

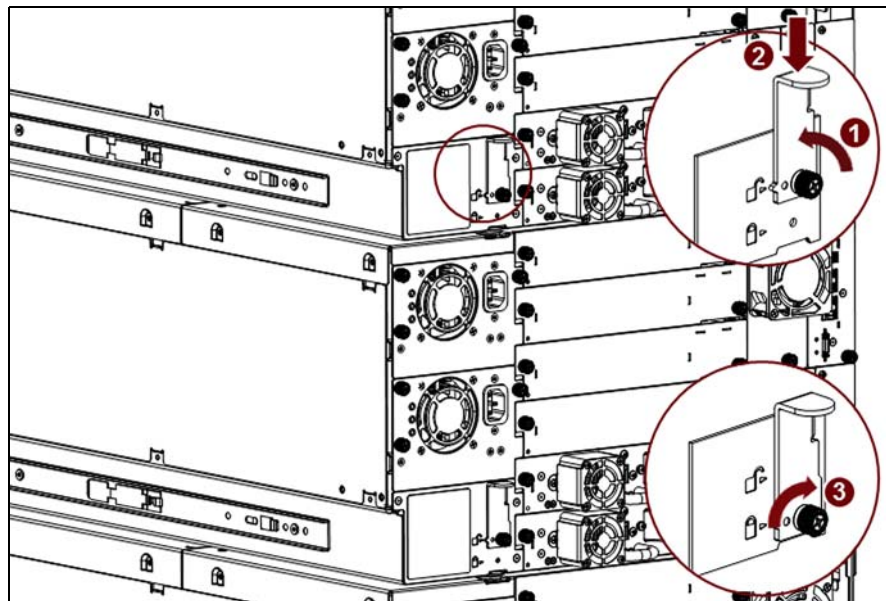


Figure 12 The alignment module.

- b. Slide the alignment mechanism down (2). If you encounter resistance, adjust the position of the upper module so that the pin on the alignment mechanism slides into the hole in the lower module.
 - c. Tighten the thumbscrew on the alignment mechanism (3).
 - d. Repeat [Step a](#) through [Step c](#) for each remaining module.
3. Verify the alignment mechanism of the lowest module is in the unlocked (retracted) position.
 4. From the front of the library, tighten the thumbscrews of each module using your fingers (see [Figure 11 on page 27](#)).

5. From the rear of the library, connect each module to its adjacent module using the expansion interconnect cable provided in the shipping box.

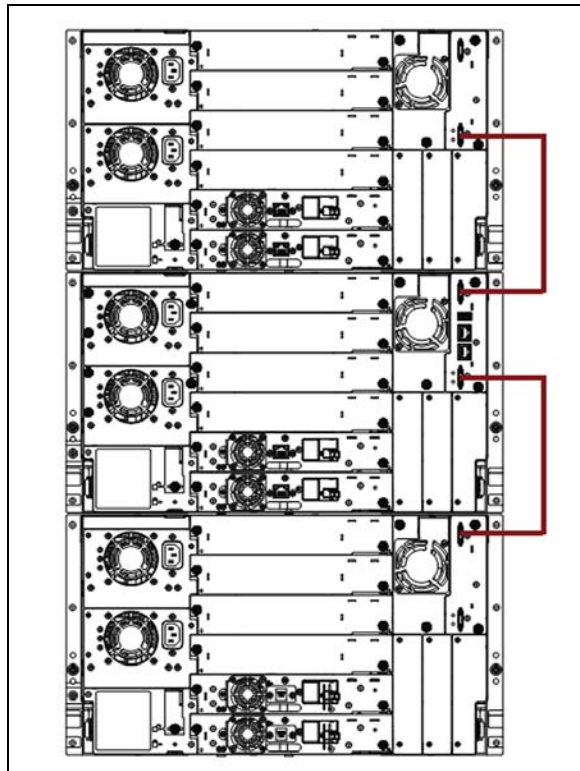


Figure 13 Install the interconnect cable(s).

- a. Starting with the lowest module, connect the interconnect cable from the upper expansion port in the lower module, to the lower expansion port in the upper module.
- b. Repeat for each additional module.

Install Tape Drives

Use the instructions below to install a tape drive into a Control or Expansion Module.



Important

Full-height tape drives can only be installed in the top, bottom, or middle pair of half-height drive bays. A full-height drive cannot be seated in other locations. If the drive does not seat completely, verify that it is located in one of the three full-height drive locations.

1. Locate an appropriate vacant drive bay on the back of the library.

2. Remove the face plate covering the drive bay by loosening the screws holding it in place.
 - Remove one drive bay cover to install a half-height tape drive.
 - Remove two drive bay covers to install a full-height tape drive.

Note: To assist in aligning the drive, only remove the drive bay covers for one drive at a time.
3. Holding the tape drive by the handle and supporting it from the bottom, slide the tape drive along the alignment rails into the drive bay until it is flush with the back of the library.

**Caution**

If you encounter resistance, do not force the drive into the drive bay.

4. Tighten the blue captive screws with your fingers to secure the tape drive to the chassis. If you cannot tighten the thumbscrews, verify that the tape drive is installed properly.

**Caution**

All unused drive bays must have drive bay covers installed.

Connect Cables

Use the instructions in this section to connect Fibre Channel, SAS, and Ethernet cables, and power cords.

Connecting Fibre Channel Cables

1. If necessary, remove the port cap from the Fibre Channel port.

Note: The back panel of your installed drive may differ from the image shown below. The process is the same.

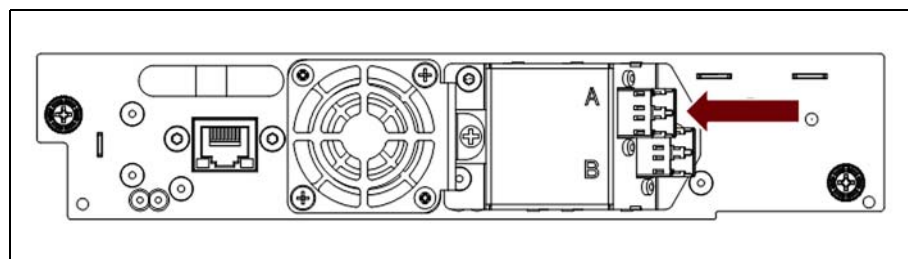


Figure 14 Connect a Fibre Channel cable.

2. Connect a Fibre cable from an HBA or SAN to the port on the tape drive.

Connecting SAS Cables

1. Attach the HBA end of the SAS cable into the connector on the HBA.
2. Connect the cable to the drive.

Note: The back panel of your installed drive may differ from the image shown below. The process is the same.

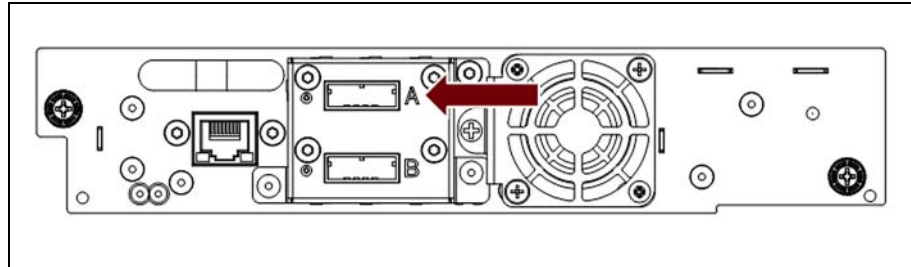


Figure 15 Connect a SAS cable.

Note: If you are using a SAS fanout cable, attach one SAS cable to the connector on each tape drive. Coil and secure any unused ends of the SAS fanout cable.



Important

- SAS signal rates require clean connections between the HBA and tape drive. Do not use adaptors or converters between the HBA and tape drive.
- For reliable operation, use a maximum SAS cable length of 6.5 ft (6 m)

Connecting the Ethernet Cable

Plug an Ethernet cable from your network into the lower Ethernet port on the Control Module (1).

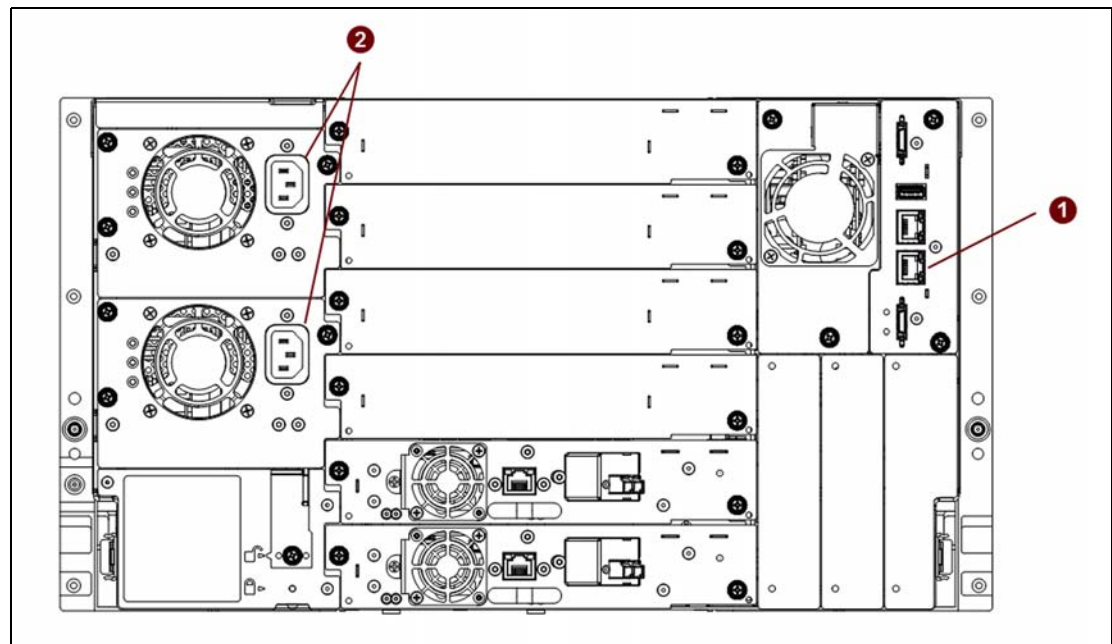


Figure 16 Connect an Ethernet cable and power cords.

Connecting Power Cords

For each power supply, plug a cord into the power module, then plug the cord into the AC supply (2) (see [Figure 16 on page 31](#)).

Note: If your library order includes two redundant power supplies, for increased redundancy, plug each power cord into a different AC power circuit.

SPECTRA STACK LIBRARY QUICK CONFIGURATION

Use this checklist to ensure that all configuration steps are completed.

Status	Quick Config
<input type="checkbox"/>	Review the features of the library interface (see Operating the Library on page 33).
<input type="checkbox"/>	Power On the Library on page 35.
<input type="checkbox"/>	Configure the Library Internal Addressing on page 35.
<input type="checkbox"/>	Log Into the Library on page 37.
<input type="checkbox"/>	Complete the Initial Wizard on page 38.
<input type="checkbox"/>	Enter Activation Keys on page 41.
<input type="checkbox"/>	Verify Firmware Versions on page 42.
<input type="checkbox"/>	Modify Barcode Label Type on page 43.
<input type="checkbox"/>	Create a Partition on page 43.
<input type="checkbox"/>	Load Tape Cartridges on page 46.
<input type="checkbox"/>	Verify Host Connection on page 48.
<input type="checkbox"/>	Save the Library Configuration on page 48.
<input type="checkbox"/>	Configure Additional Features on page 49.

OPERATING THE LIBRARY

The library features two control interfaces, the Operator Control Panel (OCP) on the front panel of the main module, and the Remote Management Interface (RMI), accessible using a web browser on a computer on the same network as the library. Both interfaces allow you to monitor, configure, and control the library.




When possible, it is recommended that you use the RMI as the primary library interface as the web interface provides access to additional features, such as creating partitions, configuring SNMP, IPv6, encryption, and online help.

Note: When using the RMI, online help is available with additional information. To access online help in the RMI, click the ? icon on the right side of the RMI window.

Before using the RMI, you must configure the library network settings and set the administrator password using the OCP. These settings are usually configured when you first power on the library, using the Initial Wizard.

Library Status Icons

Status icons let you easily determine the current status of the library.

Icon	Description
	OK - The green check mark icon indicates the library is fully operational.
	Warning - The yellow exclamation point icon indicates that user attention is necessary, but the library can continue most operations.
	Error - The red X icon indicates that the library experienced an error that prevents it from continuing normal operations, and user intervention is required.

Library User Types

The library offers three types of user, each with different levels of access to library functions.

- **Administrator** – The administrator user has access to all functionality except for the log configuration and Service features.
- **User** – The user account provides access to status information, but not configuration, maintenance, or operation functions.
- **Service** – The service user is for use by service personnel only. The service password is set at the factory. To access the service features of the library, both the administrator and service passwords are required.
- **Security** - The security user is used to configure encryption features. The security password is set at the factory.

Power On the Library

Power on the library by pressing the power button on the front panel of the Control Module. The power button LED illuminates green.

Note: All front panel lights blink during library initialization.

When the library initializes, it inventories tape cartridges in all magazines, checks the firmware version of all modules, configures tape drives, confirms the presence of previously discovered Expansion Modules, and searches for new Expansion Modules.

Configure the Library Internal Addressing

The library uses an internal Ethernet connection for communication between the Control Module and any installed Expansion Modules configured with an internal IP address range.

To prevent conflicts between the internal and external Ethernet networks, when the library first initializes, you must configure an IP address range for the internal network using the operator control panel.

Note: This step is required even if your library configuration does not include any Expansion Nodes.

1. When the library completes its first initialization, the Internal and External IP Conflict Prevention screen displays.



Figure 1 The IP Conflict Prevention Screen.

- Using the drop-down menu, select one of the three default IP address ranges that is not used by your data center network.

Note: If none of the three pre-entered address ranges is suitable for use in your network, contact Spectra Logic Technical Support (see [Contacting Spectra Logic on page 7](#)).



Figure 2 Select an IP address range using the drop-down menu.

- Click **Set and Proceed**. The library reboots and displays the login screen (see [Figure 3 on page 37](#)).

Log Into the Library

Use the instructions in this section to log into the library. The process is similar when using either the OCP or RMI.

1. Access the user interface:
 - **Using the OCP** - touch the screen to clear the screen saver and display the login screen.
 - **Using the RMI** - open a web browser and enter the IP address of the library in the browser address bar.

The Login screen displays.

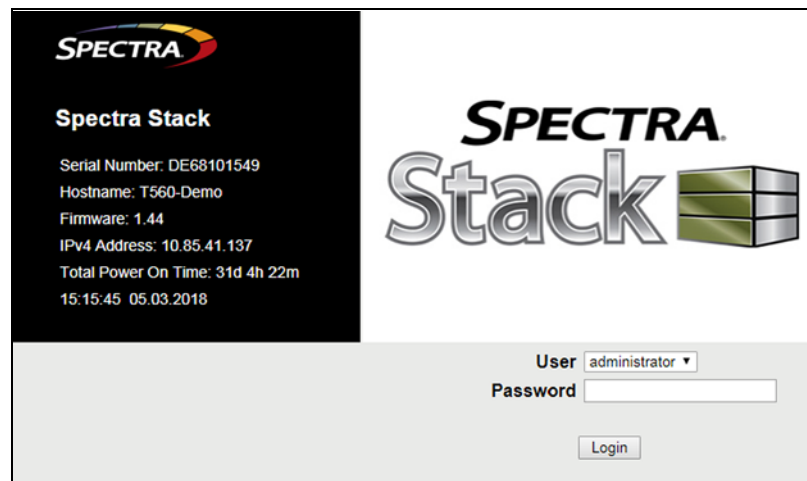


Figure 3 The Login screen.

2. Using the drop-down menu, select the desired **User**.
3. If necessary, enter the **Password** for the user.

- Notes:**
- By default, there is no password for the **User** account. Leave the **Password** field blank unless a password was manually configured for this account.
 - The **Administrator** account password must be configured using the OCP before the administrator account is accessible using the RMI. This is configured in the Initial Wizard.
 - The **Security** account password was configured at the factory. The configured password is *security*. The password must be changed before this account can be used.
 - The **Service** account password was configured at the factory and not available to end users.

4. Click **Login**.

Complete the Initial Wizard

When the library initializes for the first time, the Initial Wizard displays on the OCP. The wizard guides you through configuring the date and time and network settings, setting an administrator password, and running an initial system test.

- Notes:**
- If desired, you can skip individual sections of the wizard, or stop the wizard at any time.
 - Once you configure network settings and the administrator password, you can complete the remaining steps using the Remote Management Interface (RMI).
 - The Ready and Attention LEDs blink until you complete the Initial Wizard.

1. When the Initial Configuration screen displays, click **Next** to start the wizard. The Set Administrator Password screen displays.

Set Administrator Password

This Page allows you to configure the administrator password, which during initial setup also enables administrative access to the remote management interface (RMI).
The password must be at least 8 characters long, can include capital & non-capital letters, digits and certain special characters.

New Password:

Repeat Password:

NOTE: After entering the administrator password you can exit out the wizard at any point and complete library setup via a browser connection to the RMI. In non-DHCP environments you must use this wizard or the OCP to configure initial static network settings.

Submit

Back Next Finish Cancel

Figure 4 The Set Administrator Password screen.

2. Enter the desired password for the administrator user in the **New Password** entry field. Enter the password again in the **Repeat Password** entry field, and click **Submit**.

3. Click **Next**. The Network Configuration screen displays.

Figure 5 The Network Configuration screen.

Note: It may be helpful to have your System Administrator assist you in configuring the network settings.

4. If desired, enter a new **Host Name**.
5. If desired, enter a **Domain Name**.
6. Using the **Protocol** drop-down menu, select IPv4, IPv6, or both.

Note: Using a static IP address ensures that the IP address for the library remains constant and is highly recommended.

- If you selected the IPv4 protocol:
 - a. Using the **Method** drop-down menu, select either DHCP or Static addressing. If you are configuring a static IP address, enter the **Address**, **Netmask**, and **Gateway** addresses.
 - b. If desired, enter **DNS** server information.
- If you selected the IPv6 protocol:
 - a. Using the Method drop-down menu, select Static or Stateless. If you are configuring a static IP address, enter the **Address**, **Prefix Length**, and **Gateway**.
 - b. If desired, enter **DNS** server information.

7. Click **Next**. The Timezone Selection screen displays.

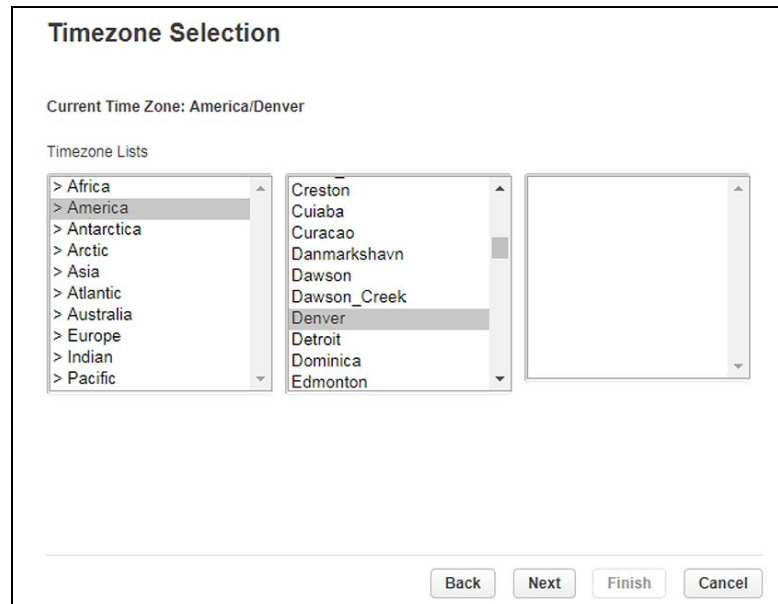


Figure 6 The Timezone Selection screen.

8. Use the **Timezone Lists** to select the geographical location of the library. The screen displays a list of continents, countries, and regions. When an area name is preceded by ">", a submenu is displayed in the next column. Expand the timezone lists, as necessary, until a location with the appropriate time zone is visible.

Note: Depending on your location, the right-most pane may not be needed.

9. Click **Next**. The Date & Time screen displays.

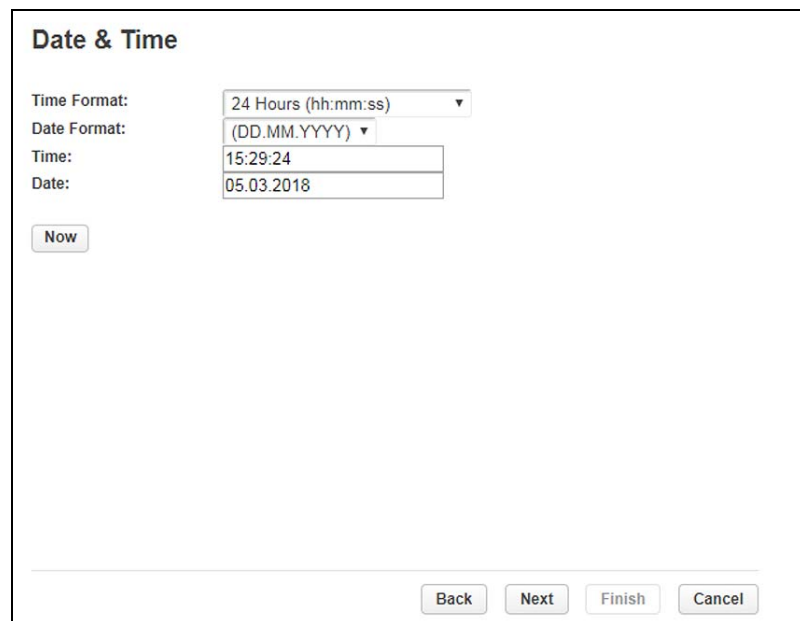


Figure 7 The Date & Time screen.

- 10.** Using the **Time Format** drop-down menu, select either a 12-hour or 24-hour clock. If you selected the 12-hour time format, select **AM** or **PM** from the drop-down menu.
- 11.** Using the **Date Format** drop-down menu, select the format the library uses to display the date. The current date and time are populated in the Time and Date fields.
- Notes:**
- If desired, click the **Time** entry field and enter the system time manually.
 - If you want to manually configure the date, click the **Date** entry field. A calendar dialog box displays. Select the desired date.
 - If desired, click **Now** to reset the entry fields to the current library time and date.
- 12.** Click **Next**. The Update Configuration screen displays.

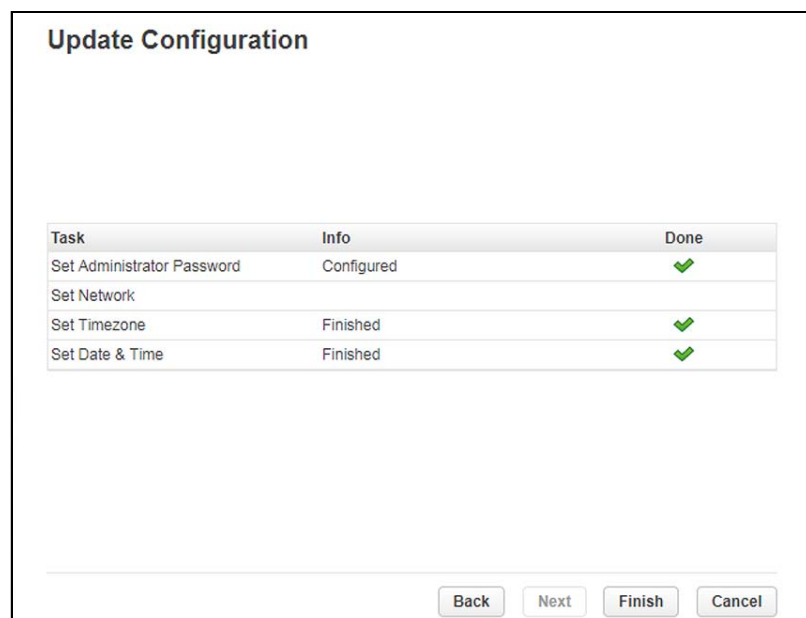


Figure 8 The Update Configuration screen.

The screen shows the status of each step of the Initial Wizard. The **Set Network** field does not show a status until the wizard completes.

- 13.** Click **Finish**. The screen refreshes to show the status of the network configuration.
- 14.** Click **OK** to exit the wizard.

Enter Activation Keys

Activation keys enable features on your library. Your activation keys are emailed to the contact person listed on the sales order for your library. If cannot find the email, please contact Spectra Logic Technical Support (see [Contacting Spectra Logic on page 7](#)).

Use the instructions below to enter activation keys.

1. From the home screen, click **Configuration**. The Configuration screen displays.
2. On the right-hand pane, click on the **System** tab to expand the system pane, and then select **License Key Handling**.

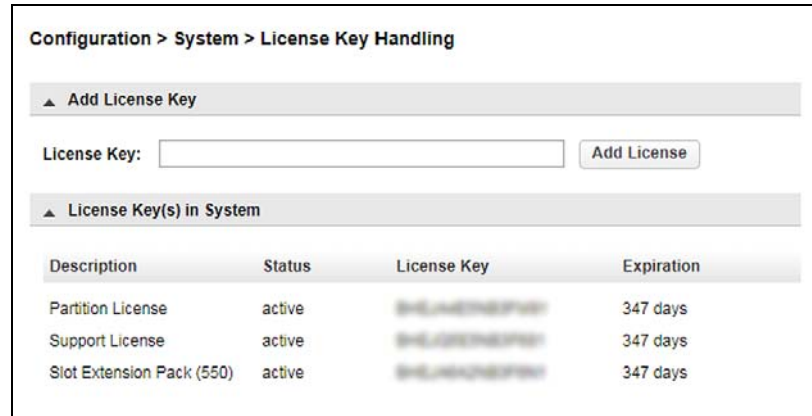


Figure 9 The License Key Handling screen.

3. Enter the key in the **License Key** entry field.
4. Click **Add License**.
5. Repeat [Step 3](#) and [Step 4](#) for any additional activation keys.

Verify Firmware Versions

Verify that the latest version of Spectra Stack firmware is installed on the library. The firmware version displays on the top left corner of the OCP and RMI screens.

Compare your firmware version with the most current version available on the Spectra Logic Technical Support portal (log on at support.spectralogic.com). The Spectra Logic Technical Support portal lists the currently recommended library software and drive firmware versions, as well as important notifications.

If the library is not at the latest revision, see “Managing System Firmware” in the *Spectra Stack User Guide*.

Modify Barcode Label Type

You can select the checksum behavior from the **Configuration** > **System** > **Modify Barcode Label Type** screen. You cannot mix checksummed and non-checksummed barcodes in a library.

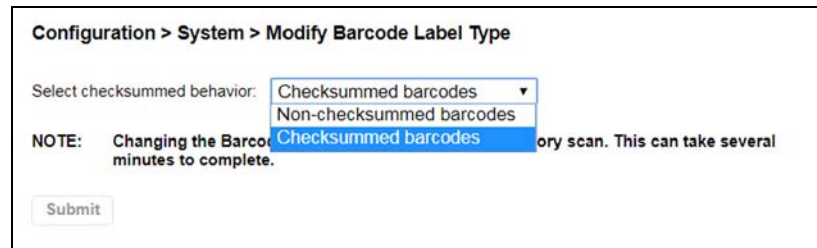


Figure 10 The Modify Barcode Label Type screen.

Select whether the library uses **Non-checksummed barcodes** or **Checksummed barcodes**, and then click **Submit**. Changing the setting initiates an inventory scan which can take several minutes to complete.

Create a Partition

You must create at least one partition before you can use your Stack library for data backup operations. The following instructions guide you through partition creation using the Basic Wizard, which creates one or more partitions using all drives and licensed slots in the library.

Note: If you want to configure advanced partition settings, see the *Spectra Stack User Guide* for instructions on using the partition Expert Wizard. Use the Expert Wizard to configure partitions that will have different resources or to adjust resource assignments for existing partitions.

1. From the home screen of the library interface, select **Configuration**. The Configuration screen displays.

- On the right-hand pane, select **Partitions** to expand the Partitions menu, and select **Basic Wizard**. The Information screen of the Basic Wizard displays.

Information

The Basic Partitioning Wizard allows for simplified partition creation by auto assigning ALL library elements into partitions based upon the number of partitions the user elects to create. :

Caution
Continuing with the Basic Partition Wizard will cause all existing partitions to be deleted.

Any partitions in the below table will be deleted upon wizard completion.

ID	Partition Name

Are you sure you want to proceed?

Figure 11 The Information screen.

- A warning displays that the Basic Wizard deletes any existing partitions. Click **Proceed** and then click **Next**. The Create Partition Scheme screen displays.

Create Partition Scheme

Free Resources That Will Be Used by the Partition Scheme

Physical Slots / Licensed Slots :	80 / 10
Slots :	10
EE Ports :	10
Drives :	2
Max. Partitions :	1

Partition Settings

Partition Count (max. 1) ▾
Due to a missing partition license.

Barcode Label Length Reported To Host ▾

Barcode Label Alignment Reported To Host ▾

Auto Clean

Figure 12 The Create Partition Scheme screen.

4. Use the **Partition Count** drop-down menu to select the number of partitions you want to create, up to the maximum number of licensed partitions. The resources in the library (drives and media) divide evenly between each partition.

Note: Magazine slots are allocated in five-slot groups. The wizard assigns the drives and storage slots as evenly as possible to the partitions. Any extra drives or slots are assigned to the first partition.
5. Use the **Barcode Label Length Reported To Host** drop-down menu to select the number of digits on a tape barcode that are reported to your backup software. This option provides interchange compatibility with libraries with more limited barcode reading capabilities. The maximum length is 15 and the default is 8. This configuration will apply to all partitions.

Note: The industry standard length for LTO barcode labels is eight characters. Barcode labels longer than eight characters might scan incorrectly, particularly if they are not high quality labels.
6. Use the **Barcode Label Alignment Reported To Host** drop-down menu to configure the library to report the barcode digits to the backup software starting from the left or right side of the barcode. The default setting is left.
7. If desired, select **Auto Clean** to configure the library to automatically clean a tape drive when it requests cleaning.
8. Click **Next**. The Finish Configuration screen displays with details for the partition(s) configured using the wizard.

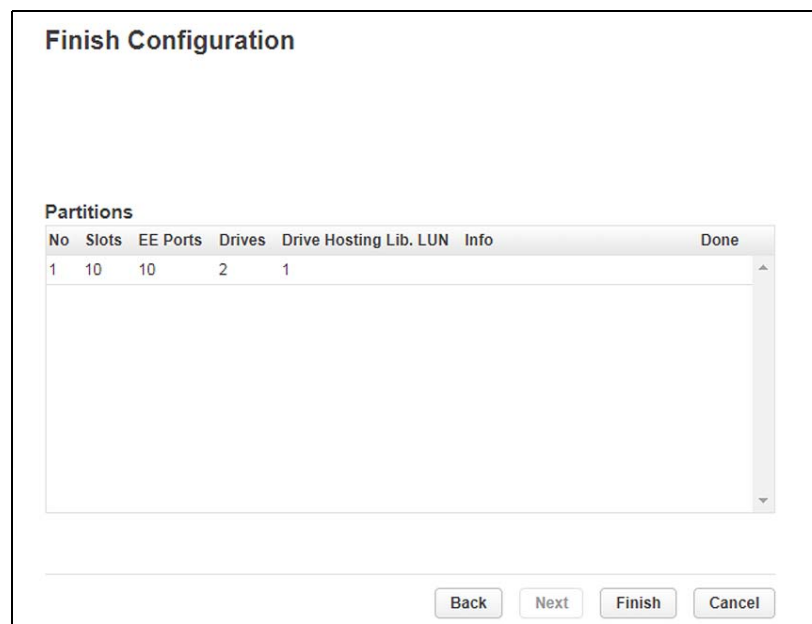


Figure 13 The Finish Configuration screen.

9. Click **Finish** to create the partition(s) and exit the wizard.

Load Tape Cartridges

The library does not require tape cartridges to initialize, but needs tape media to perform certain tests and to backup data. Use the instructions in this section to import tape cartridges. There are two ways to import tape cartridges - using the EE port or a bulk load.

Using the EE Port

If the EE port is enabled, it can be used to import tape cartridges into the library.

- Notes:**
- If you created partition(s) using the Basic Wizard, the EE Port is enabled by default. If you used the Expert Wizard, see the *Spectra Stack Library User Guide* for information on enabling the EE Port.
 - If you plan to import a large number of tape cartridges, Spectra Logic recommends bulk loading magazines.

1. Using the OCP, from the Home screen, select **EE Port** to unlock the magazine.
2. Open the magazine door and pull the EE port out.

Note: The image below shows a magazine being removed for a bulk load. When removing the EE port from the library, the handle and the first bank of 10 slots disconnects from the magazine.

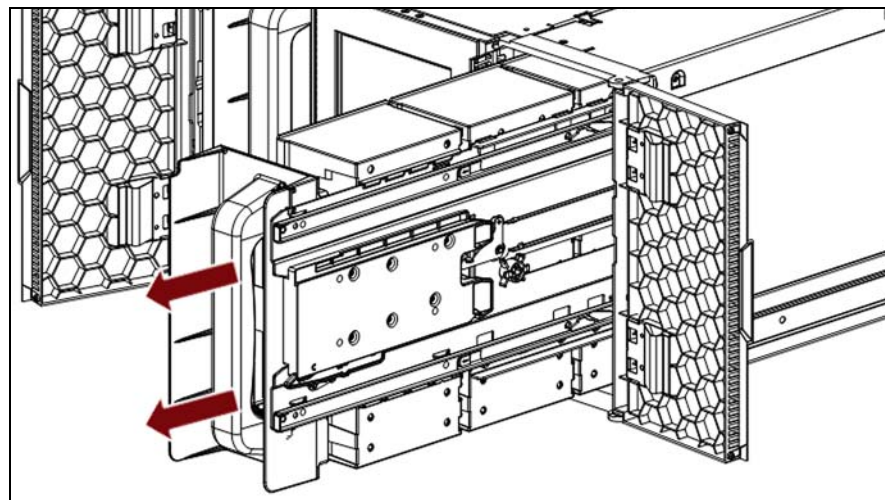


Figure 14 Remove the EE port from the library.

3. Insert up to 10 tape cartridges into the EE port.
4. Gently push the EE port back into the library (see [Figure 15 on page 47](#)) until it locks in place.
5. Close the EE port door.
6. If desired, repeat [Step 1 on page 46](#) through [Step 5](#) to import more tape cartridges.

Bulk Loading Magazines

Use the instructions in this section to bulk load tape cartridges into the library.

1. Using the OCP or the RMI, select the module into which you want to bulk import cartridges.
 - a. Select **Home** ⋮ **Open Magazine**.
 - b. From the list of modules, locate the module into which you want to import tapes and select **Open** for either the right or left magazine. The magazine unlocks.

Note: You can only open one side of the module at a time.

2. Open the magazine access door.
3. Gently extend the magazine away from the library. The magazine is not removable and does not extend past the 40 slots in the magazine (see [Figure 14 on page 46](#)).
4. Starting with the back of the magazine, load tape cartridges into open slots in the magazine.

Note: If you have configured multiple partitions, navigate to **Status** ⋮ **Partition** ⋮ **Graphical View** to determine which banks of 5 slots in each magazine belong to each partition.

5. Push the magazine into the library after you fill each bank of ten tapes.
6. When the magazine is full, or you are done adding cartridges to the magazine, slowly push the magazine into the library until the latch snaps in place.

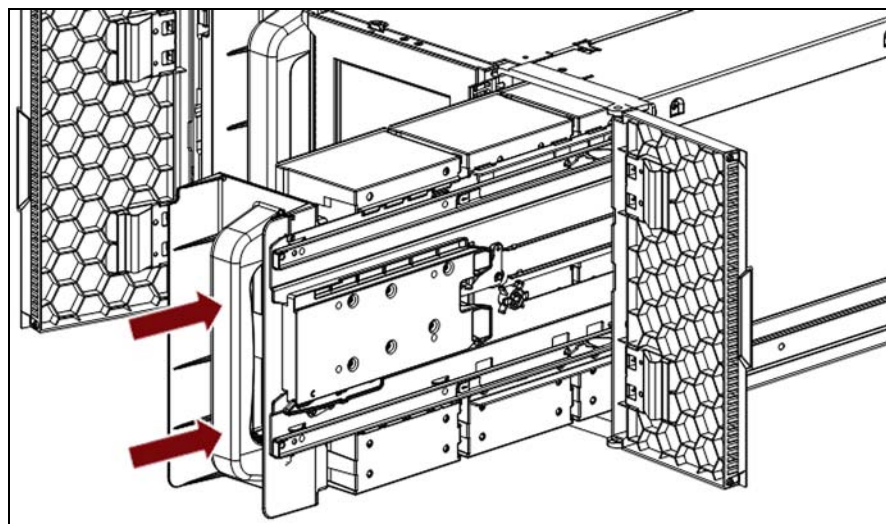


Figure 15 Install a magazine into the library.

7. Close the magazine door.
8. Repeat [Step 1 on page 47](#) through [Step 6](#) to bulk import more cartridges into the library.

Verify Host Connection

To verify the connections between the host computer and the library, install application software and/or drivers compatible with the library. Backup software packages may require additional software or licensing to communicate with the library robotics. Once software and drives are installed, verify the connection between the library and the host using the host server's operating system utilities.

Note: If you need assistance, contact your System Administrator.

Save the Library Configuration

After configuring the library, Spectra Logic recommends that you backup your library configuration. Having a backup of the library configuration is helpful when recovering from a configuration error or if the library needs service. You can save a backup copy to a USB device using the OCP, or save a copy on a host computer using the RMI.

1. From the home screen, click **Configuration**. The Configuration screen displays.
2. On the right-hand pane, click on the **System** tab to expand the system pane, and then click **Save/Restore Configuration**. The Save/Restore Configuration screen displays.

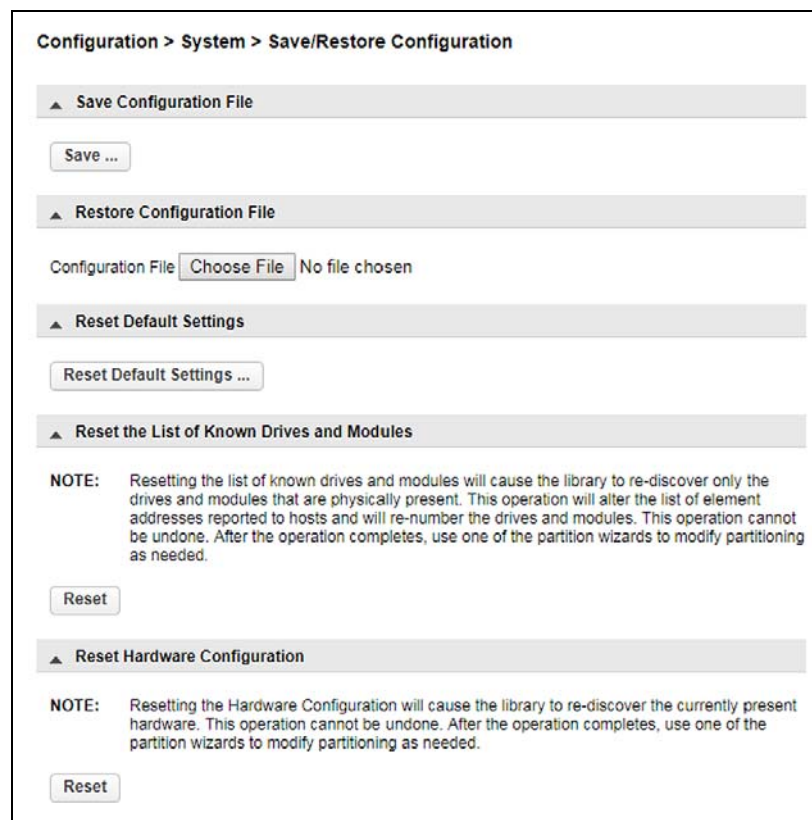


Figure 16 The Save/Restore Configuration screen.

3. In the Save Configuration File pane, click **Save**. After several minutes, a Download button displays. Click **Download** to save the file using your web browser.

Configure Additional Features

The library offers a number of features that help you customize the library for your organization. See the *Spectra Stack Library User Guide* for information configuring event notification, encryption, advanced network settings, and troubleshooting library problems.