

# NEOxI 40 Spooler Upgrade Guide

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FW 2.0.0

## Content

|   |          |
|---|----------|
| <b>0 - Preface</b>  | <b>1</b> |
| <b>Warnings and Notes</b>   | <b>1</b> |
| Warnings  | 1        |
| Avertissement   | 1        |
| Notes   | 1        |
| Remarques   | 2        |
| <b>General Warnings</b>   | <b>2</b> |
| Electrostatic Discharge   | 2        |
| <b>Product Warranty Cautions</b>  | <b>3</b> |
| <b>Conventions</b>  | <b>3</b> |
| Alerts  | 3        |
| Typographical Conventions   | 4        |
| <b>Regulatory Information</b>   | <b>4</b> |
| Disposal of Waste Equipment by Users in Private Households in the European Union and Norway | 4        |
| CE Mark   | 4        |
| NRTL Mark   | 4        |
| FCC (United States)   | 4        |
| Canadian Verification   | 5        |
| <b>Product Documentation</b>  | <b>5</b> |
| <b>Firmware Updates</b>   | <b>5</b> |
| <b>Technical Support</b>  | <b>5</b> |
| <b>1 - Overview</b>   | <b>6</b> |
| Prerequisites   | 6        |
| <b>2 - Procedure</b>  | <b>6</b> |
| Document the hardware configuration   | 6        |
| Set Encryption to Controlled by Backup Application  | 8        |
| Update the library firmware   | 8        |
| Powering off the library  | 8        |
| Removing the magazines  | 8        |
| Preparing to remove the spooling mechanism  | 9        |
| Removing the spooling mechanism from the base module  | 10       |
| Installing the new spooling mechanism into the base module                                  | 11       |
| Completing the spooling mechanism installation  | 12       |
| Powering on the library   | 12       |
| Enabling the new configuration  | 13       |
| Verifying the upgrade procedure   | 13       |

## 0 - Preface

Welcome to the **NEOxI Spooler Upgrade Guide!**

This guide is intended for system and network administrators charged with installing and maintaining a NEOxI 40 3U Tape Library. It provides information on upgrading an existing NEOxI 40 tape library from installing up to **6 Expansion Modules** to up to **15 Expansion Modules**. Administrators should be familiar with the basic concepts and tasks of network administration.

Topics in this chapter:

- **Warnings and Notes**
- **General Warnings**
- **Product Warranty Cautions**
- **Conventions**
- **Regulatory Information**
- **Product Documentation**
- **Firmware Updates**
- **Technical Support**

## Warnings and Notes

### Warnings

- Only trained personnel should operate this equipment.
- Read all documentation and procedures before installation or operation.
- The tape library must only be installed in a Restricted Area.
- Only personnel with technical and product-safety training should be provided access to the library.
- For safety reasons, the default administrator PIN for the Operator Control Panel needs to be changed during initial configuration.
- Hazardous moving parts exist inside this product. Do not insert tools or any parts of your body into the interior of the library while the mail slot or magazine is pulled out.
- Do not insert any tools or any parts of your body into drive bay openings or any other openings of an operating system.

### Avertissement

- Cet équipement ne doit être utilisé que par un personnel formé.
- Lisez la totalité de la documentation et des procédures avant toute installation ou utilisation.
- Ce produit est conçu pour être installé et utilisé dans un local approprié.
- Seul un personnel avec la formation technique et de sécurité des produits devrait avoir accès à la bibliothèque.
- Pour des raisons de sécurité, le code PIN administrateur par défaut doit être changé au moment de la configuration initiale.
- Des pièces mobiles dangereuses se trouvent à l'intérieur de ce produit. Ne pas insérer d'outils ou de parties de votre corps à l'intérieur de la bibliothèque pendant que le slot import/ export ou un tiroir est sorti.
- N'insérez pas d'outils ni partie du corps dans les ouvertures de la robotique lorsque le système est en marche.

### 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.

### Remarques

- **Ventilation** – Placez le produit dans un endroit qui n'interfère pas avec une ventilation appropriée.
- **Chaleur** – Placez le produit dans un endroit loin de sources de chaleur.
- **Alimentation électrique** – Veuillez ne brancher le produit qu'à une source d'alimentation correspondant aux instructions figurant dans le mode d'emploi ou comme directement indiqué sur le produit.
- **Protection du cordon d'alimentation** – Placez le cordon d'alimentation principal de sorte qu'il ne soit pas possible de marcher dessus ou d'être écrasé par des objets placés sur ou contre.
- **Pénétration d'objets et de liquide** – Assurez-vous que des objets ne tombent pas sur le châssis et que des liquides ne soient pas déversés dans le châssis.

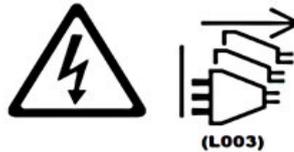
### General Warnings

|  |   |
|--|---|
|  <b>DANGER</b>              | <p><b>High voltage</b> – Risk of electric shock</p> <ul style="list-style-type: none"> <li>• Do not remove power supply covers. No user-serviceable parts are inside unless specifically identified.</li> <li>• Refer servicing to qualified service personnel.</li> </ul> <p><b>Tension élevée</b> – Risque de choc électrique</p> <ul style="list-style-type: none"> <li>• Ne pas retirer le couvercle de l'alimentation. Aucune pièce réparable par l'utilisateur ne se trouve à l'intérieur à moins que celle-ci ne soit spécifiquement identifiée.</li> <li>• Confier toute réparation à un personnel qualifié.</li> </ul> |
|  <b>MECHANICAL HAZARD</b> | <p><b>Danger</b> – Risk of hand pinching, can trap hands, fingers and cause serious injury. Keep hands clear during operation.</p>  |
|  <b>DANGER MÉCANIQUE</b>  | <p><b>Danger</b> – Risque de se coincer la main et de se coincer les mains ainsi que les doigts le tout pouvant entraîner de graves blessures. Gardez les mains à l'écart pendant le fonctionnement.</p>  |

Achtung:  
Vor Öffnen des Gerätes  
alle Netzstecker ziehen!

Attention:  
Remove all power cords  
before opening the unit!

Attention:  
Débranchez toutes les fiches d'alimentation avant d'ouvrir l'équipement!



### Electrostatic Discharge

To prevent damaging the system, be aware of the precautions you need to follow when setting up the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

**Preventing Electrostatic Damage.** To prevent electrostatic damage, observe the following precautions:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly. See the next section.

**Grounding Methods.** There are several methods for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm ( $\pm 10$  percent) resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.

- Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, have an authorized reseller install the part. For more information on static electricity, or assistance with product installation, contact your authorized reseller.

### Product Warranty Cautions

The customer should only perform the service and repair actions on the tape library components as described in this document. Any other actions needed should only be performed by an authorized service center.

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 the factory service center or its approved agent.
- The tape library is repaired by anyone, including an approved agent, 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.

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

### Conventions

This document exercises several alerts and typographical conventions.

#### Alerts

| Convention   | Description & Usage   |
|--|---|
| <i>NOTE: Text</i>  | A <b>Note</b> indicates neutral or positive information that emphasizes or supplements important points of the main text. A note supplies information that may apply only in special cases, for example, memory limitations or details that apply to specific program versions.   |
|  <b>IMPORTANT</b>  | An <b>Important</b> note is a type of note that provides information essential to the completion of a task or that can impact the product and its function.   |
|  <b>CAUTION</b>  | A <b>Caution</b> contains information that the user needs to know to avoid damaging or permanently deleting data or causing physical damage to the hardware or system.  |
|  <b>WARNING</b><br><b>WARNUNG</b><br><b>ADVERTISSEMENT</b> | A <b>Warning</b> contains information concerning personal safety. Failure to follow directions in the warning could result in bodily harm or death. Eine <b>Warnung</b> enthält Informationen zur persönlichen Sicherheit. Das Nichtbeachten der Anweisungen in der Warnung kann zu Verletzungen oder zum Tod führen. Un <b>Canadien</b> avertissement comme celui-ci contient des informations relatives à la sécurité personnelle. Ignorer les instructions dans l'avertissement peut entraîner des lésions corporelles ou la mort. |

### Typographical Conventions

| Convention              | Description & Usage  |
|-------------------------|--|
| <b>Button_name</b>      | Words in this special boldface font indicate command buttons found in the <b>Remote Management Interface (RMI)</b> or <b>Operator Control Panel (OCP)</b> .  |
| Ctrl-Alt-R              | Denotes the keys that you press simultaneously. In this example, hold down the <b>Ctrl</b> and <b>Alt</b> keys and press the <b>R</b> key.   |
| Menu Flow Indicator (>) | Words with a greater than sign between them indicate the flow of actions to accomplish a task. For example, <b>Setup &gt; Passwords &gt; User</b> indicates that you should press the <b>Setup</b> button, then the <b>Password</b> button, and finally the <b>User</b> button to accomplish a task. |
| <i>Courier Italic</i>   | Used to exemplify a variable for which you must substitute a value.  |
| <b>Courier Bold</b>     | Represents commands or text in a command-line interface (CLI).   |

Information contained in this guide has been reviewed for accuracy, but not for product warranty because of the various environments, operating systems, or settings involved. Information and specifications may change without notice.

### Regulatory Information

#### Disposal of Waste Equipment by Users in Private Households in the European Union and Norway



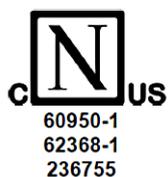
This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at this time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service, or the shop where you purchased the product.

#### CE Mark



The CE mark is a mandatory conformity mark on many products placed on the single market in the European Economic Area (EEA). The CE marking certifies that a product has met EU consumer safety, health or environmental requirements.

#### NRTL Mark



#### FCC (United States)



The computer equipment described in this manual generates and uses radio frequency (RF) energy. If the equipment is not installed and operated in strict accordance with the manufacturer's instructions, interference to radio and television reception might result.

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Part 15, Class A, of the FCC Rules, is designed to provide reasonable protection against radio and television interference in a residential installation. Although the equipment has been tested and found to comply with the allowed RF emission limits, as specified in the above-cited Rules, there is no guarantee that interference will not occur in a particular installation. Interference can be determined by turning the equipment off and on while monitoring radio or television reception. The user may be able to eliminate any interference by implementing one or more of the following measures:

- Reorient the affected device and/or its receiving antenna.
- Increase the distance between the affected device and the computer equipment.
- Plug the computer and its peripherals into a different branch circuit from that used by the affected device.
- If necessary, consult an experienced radio/television technician for other suggestions.

### Canadian Verification

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations (ICES-003, Class A).

### Product Documentation

NEO product documentation and additional literature are available online at the Overland-Tandberg Knowledge Base:

<https://www.overlandtandberg.com/knowledgebase/>

Refer to the Tape Archive Solutions (NEO & LTO Drives) section to access the information you need.

### Firmware Updates

The latest release of the NEO XL-Series firmware can be obtained from the Downloads page at the Overland Storage website:

[https://download.overlandtandberg.com/Firmware/Neo\\_Series/Neo-XL/](https://download.overlandtandberg.com/Firmware/Neo_Series/Neo-XL/)

Follow the appropriate instructions to download the latest software file.

### Technical Support

You can get additional technical support information on the Contact Us web page at:

<https://www.overlandtandberg.com/contact-us/>

For a complete list of support types, levels, and times, visit our website at:

<https://www.overlandtandberg.com/service-support/contact-service-support/>

## 1 - Overview

The NEOxl 40 is expandable, allowing businesses to grow their tape storage capacity as their data requirements increase. As data storage needs grow, the NEOxl 40 can also grow by adding one or more **Expansion Modules**. Each Expansion Module provides an additional 40 tape cartridge slots and supports an additional half-height and full-height LTO tape drives.

Up to 15 Expansion Modules can be added to a Base Module (**eight above** and **seven below**), bring the total library capacity to 640 tape cartridges and 48 half-height LTO tape drives.

### Prerequisites

To upgrade the spooler kit, you need the following tools:

- **2 small flathead screwdrivers or Torx drivers**
- **#2 Phillips screwdriver**

## 2 - Procedure

### Document the hardware configuration

Document the hardware configuration before beginning the upgrade process. Take note of any installed expansion modules, drives, and their physical positions. Note any customized settings for your environment by navigating to the following pages in the Remote Management Interface:

#### **IMPORTANT:**

During this upgrade process, the library configuration will be reset. Configuration files saved before this upgrade procedure occurs can not be restored once the library has been upgraded. All library settings should be manually documented before beginning this upgrade. Once the new configuration has been enabled, the documented settings will be used to reconfigure the library.

#### Installed expansion modules

- Select Status > Library Status
- Record the number of modules and position.

#### Installed drives

- Select Status > Drive Status
- Record number of drives, drive type, and position in each module.

#### Partitions

- Select Status > Partition Map > List View.
- Expand each partition, record the cartridge barcode and the partition in which the cartridge is stored.
- Select Status > Partition Map > Graphical View.
- Expand each module, record which drives and slot groups are assigned to each partition.
- Select Status > Partition Map > Configuration Status .
- Expand each partition and record the Partition Name, Number of Slots, Number of Mailslots, Barcode Label Length Reported to host,
- Barcode label Alignment reported to host, Auto Clean, Key Manager Type, FIPS support Mode, Control Path Failover, Active Control
- Path Drive and LTO7+ Multi-initiator SCSI Conflict Detection.

#### Time Format

- Select Configuration > System > Date and Time Format.
- Expand Date/Time Format, record setting.

#### Media Barcode Compatibility Check

- Select Configuration > System > Media Barcode Compatibility Check .
- Record all settings.

#### License keys

- Select Configuration > System > License Key Handling.
- Expand License Key(s), Record the License key for each license. Alternatively, record if License Keys have not been added to the library.

#### E-Mail Notifications (SMTP)

- Select Configuration > Network Management > SMTP.
- Record all settings.

#### SNMP V1, V2, v3

- Select Configuration > Network Management > SNMP.
- Record all settings.

#### Drive speed and topology settings

- Select Configuration > Drives > Settings .
- Record all settings.

#### Mailslots (I/E ports)

- Select Configuration > Mailslots.
- Record all mailslot setting for each module.

#### Encryption

- Select Configuration > Encryption.
- Under Set Encryption Mode per Partition , record the setting for each partition. Alternatively, record if Encryption has not been configured in the library.

#### Password rules

- Select Configuration > User Accounts > User Accounts Settings.
- Record all settings for every User account.

#### Allow Magazine/Mailslot Access by the User role

- Select Configuration > User Accounts > User Accounts Settings.
- Record access setting.

#### Command View TL

- Select Configuration > Command View TL.
- Record all settings.

#### RMI Timeout

- Select Configuration > Web Management.
- Record all settings.

#### RMI Restricted Login

- Select Configuration > Web Management > Restricted Remote Management Interface RMI Login .
- Record restricted login setting.

#### OCP/RMI Session Locking

- Select Configuration > Web Management > OCP/RMI Session Locking .
- Record OCP/RMI session locking setting.

## Set Encryption to Controlled by Backup Application

Skip these steps if USB – MSL Encryption Kit and/or KMIP encryption is not configured. If encryption is set to either **USB – MSL** or **Encryption Kit or KMIP**, the configuration cannot be reset, and the upgrade cannot be completed.

1. Select Configuration > Encryption.
2. Under Set Default Encryption Mode for new Partitions, select Controlled by Backup Application.
3. Click Apply to all existing partitions.

## Update the library firmware

Update to the latest available library firmware before beginning the upgrade process.

### **i** IMPORTANT:

This upgrade requires library firmware version 2.0.0. or later. It is not available with earlier firmware versions. Before starting this upgrade process, ensure that the library is running version 2.0.0. or later.

## Powering off the library

1. Verify that all host processes are idle.
2. Depress the power button on the front panel for 5 seconds and then release it. When the Power Down Requested screen appears on the front panel, select The shipping position to ensure the robotic mechanism moves to the bottom of the base module before powering off.
3. If the library has multiple modules, verify that the robotic assembly is in the shipping position at the bottom of the base module.

### **i** IMPORTANT:

Continuing this procedure when the robotic assembly is not in the shipping position could damage library components.

- a. Look through the expansion module windows to locate the robotic assembly.
- b. If you cannot see the robotic assembly through the windows, remove one of the magazines in the base module and look through the magazine opening.
- c. If you cannot locate the robotic assembly or it is not in the shipping position at the bottom of the base module, see the user guide for troubleshooting information.

## Removing the magazines

1. To manually release the magazine when the power is off, insert a small flat-head screwdriver or Torx driver into the appropriate magazine release hole and gently push the tab in.



**i IMPORTANT:**

Do not exert force once you encounter resistance. Doing so can damage the device.

2. When the magazine is released, pull it straight out of the module while supporting it from the bottom.
3. Repeat the process for the other magazine in the module.

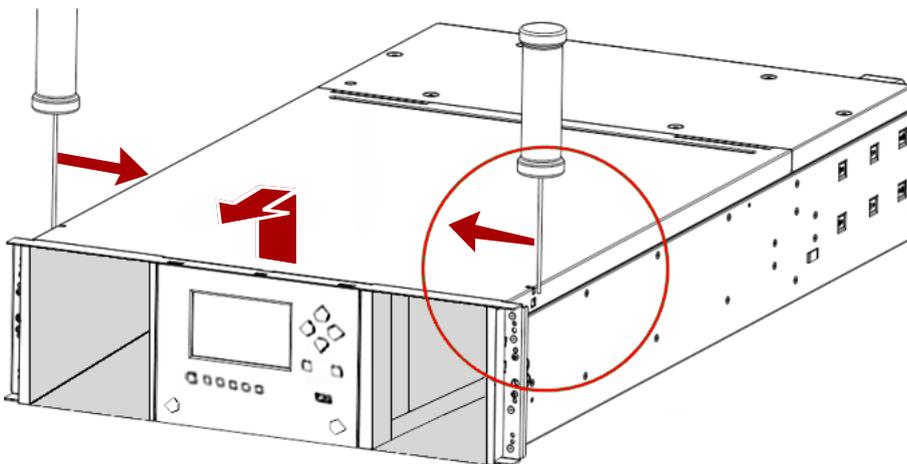
**Preparing to remove the spooling mechanism**

1. Using a #2 Phillips screwdriver, loosen the front captive fasteners that secure the base module to the rack two full turns.
2. If there are adjacent expansion modules:
  - Loosen the front captive fasteners two full turns on the adjacent expansion modules.
  - On the back of the base module and the module above (if present), move the alignment mechanisms into the unlocked position.
  - Disconnect and completely remove the expansion interconnect cables from the base module and from the adjacent modules. Removing the expansion interconnect cables prevent damaging the cables when moving the module in and out of the rack.
3. Disconnect the AC power cables from the base module.
4. Disconnect the Ethernet, SAS, and Fibre Channel cables from the base module.
5. Remove any USB devices, if present.
6. Completely loosen the front captive fasteners of the base module.
7. With assistance and while supporting the bottom of the module in the areas supported by the rack shelves, slide the module out of the rack and set it on a flat, sturdy, static-safe work surface.

**i IMPORTANT:**

To avoid personal injury or damage to the module, always support the bottom of the module where the rack shelf contacts the module. Do not touch internal mechanical or electrical components while moving the module.

8. Remove the library top cover plate, if present:

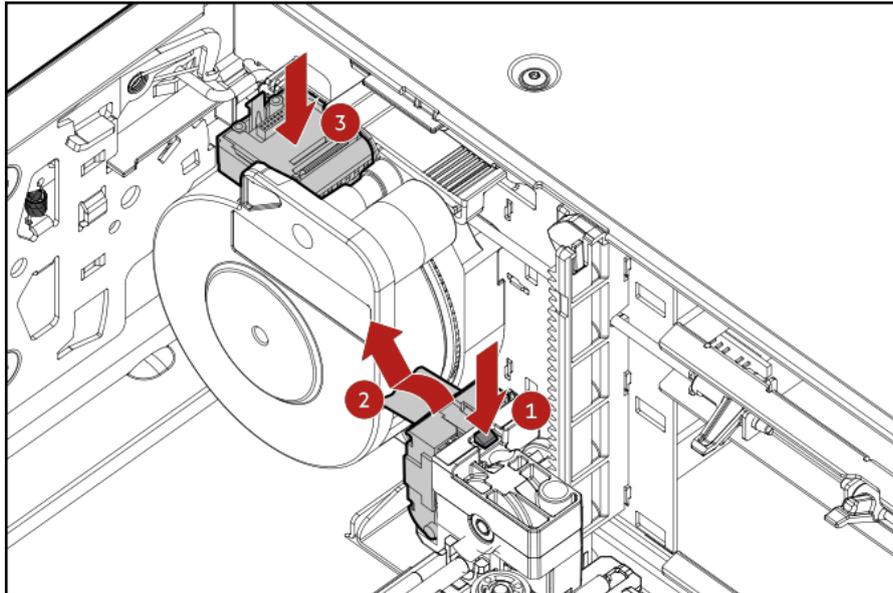


- a. Unlock the top cover using two small screwdrivers.
- b. Lift the cover front end by about 12 cm.
- c. Gently pull the cover forward to disengage from the pivot point at the module center.

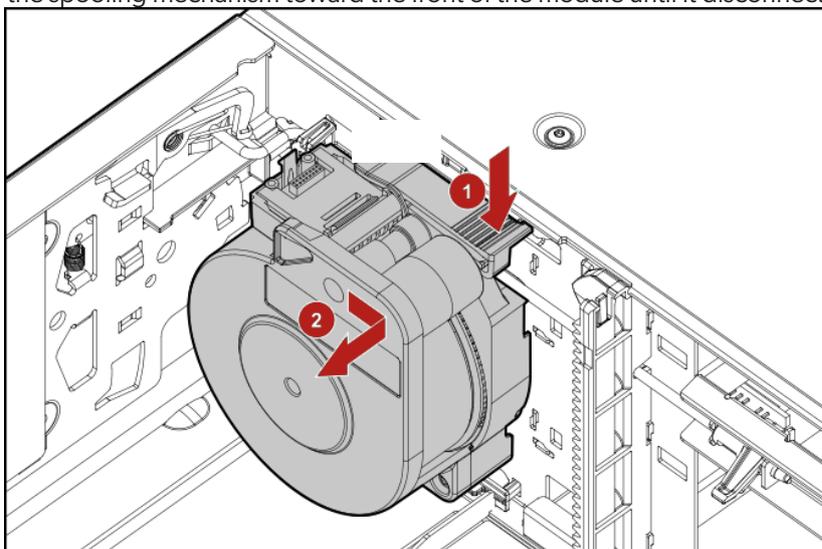
### Removing the spooling mechanism from the base module

1. On the top of the robotic assembly where the spooling cable is attached, use a small flat head or Torx screwdriver driver to press and push the small latch that unlocks the spooling cable. Ensure to grasp the connector firmly on both sides to prevent the spooling cable from retracting as you rotate the top of the connector away from the robotic mechanism.

**NOTE:** Note where the end of the spooling cable pivots in the robotic assembly. This is important to know when you attach the new spooling cable to the robotic assembly.



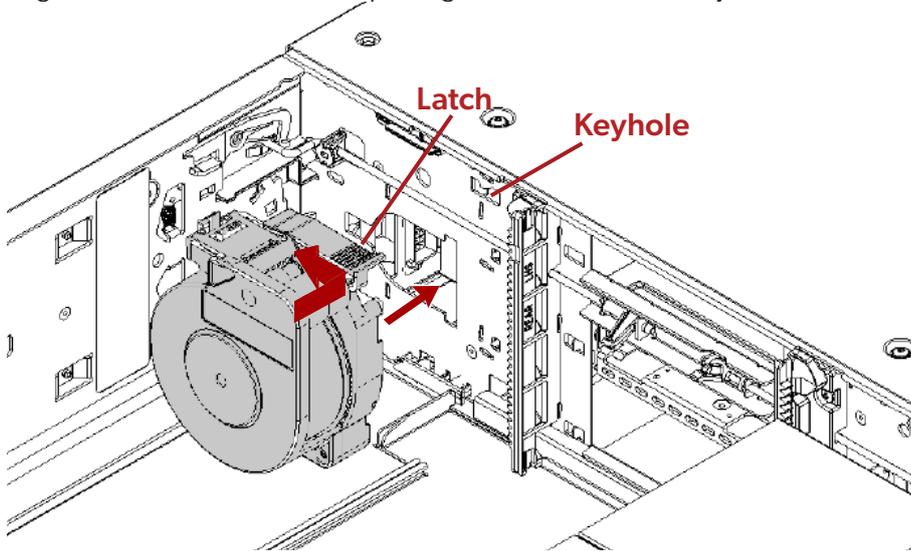
2. Lift the connector and spooling cable from the robotic assembly and place it in its cradle at the top of the spooling mechanism.
3. While pressing the latch near the top of the spooling mechanism, gently push the entire spooling mechanism to the right until it clears the narrow part of the keyhole in the back left of the metal wall. It might help to push right from the bottom with your other hand.
4. Pull the spooling mechanism toward the front of the module until it disconnects and remove it from the module.



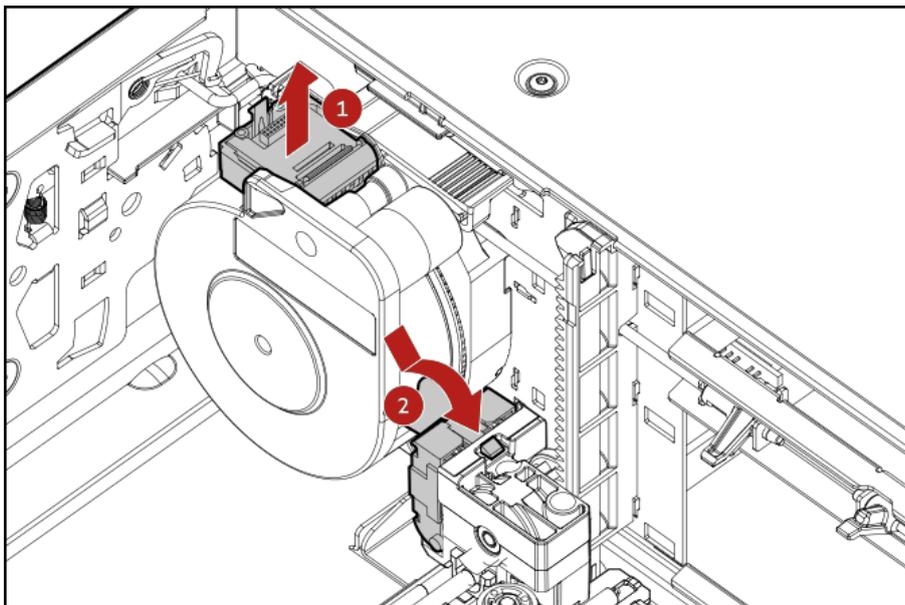
**NOTE:** Robotic assembly not shown in image for clarity.

### Installing the new spooling mechanism into the base module

1. Hold the spooling mechanism so that the end of the spooling cable that attaches to the robotic assembly is pointing up.
2. Align the tab on the back of the spooling mechanism with the keyhole in the back left of the metal wall.



3. Push the spooling mechanism in and to the left until it snaps into place.
4. Standing at the right side of the module, remove the end of the spooling cable that connects to the robotic assembly from its cradle.
5. Firmly grasping the sides of the connector, pull it down and place the spooling cable connector into the grooves where it attaches to the robotic assembly and rotate it until it snaps into place.



## Completing the spooling mechanism installation

1. Replace the top cover on the base module if you removed one.
2. With assistance, from the front of the rack and while supporting the bottom of the module in areas supported by the rack shelves, set the back of the base module on the front of the rack shelves. Push the base module into the rack until the front of the module contacts the front rack posts.
3. If there are adjacent modules:
  - Set the alignment mechanisms to the lock position. If you encounter resistance, adjust the upper module so the pin in the alignment mechanism moves into the hole in the lower module.
  - Reconnect the expansion interconnect cables.
4. Using a #2 Phillips screwdriver, tighten the captive fasteners on the front of the base module and its adjacent modules until they are finger tight. Do not over tighten.
5. Replace the magazines.  
When reinstalling the magazines, ensure that the guides at the top and bottom of the magazines are correctly engaged.
6. Reconnect the Ethernet, SAS, and Fibre Channel cables to the base module.
7. Insert any USB devices removed during this procedure.
8. Reconnect the AC power cables to the base module.
9. Inspect the library top and bottom covers, if they were removed.
  - Verify that the top and bottom covers are installed.  
The library will only operate with both the top and bottom covers installed.
  - Verify that nothing is sitting on the library top cover.  
Weight on the library top cover could cause errors in the library operation.
  - Verify that nothing is in contact with the bottom library cover plate.  
Contact with the bottom cover could cause errors in the library operation.

## Powering on the library

Power on the library by pressing the power button on the base module just under the OCP. The green light and OCP will illuminate.

When the library is powered on, it performs the following procedures:

- Inventory the tape cartridges in the magazines
- Check the firmware version on all modules
- Configure the tape drives
- Confirm the presence of the existing modules
- Search for any new modules

**NOTE:** *After the upgraded spooling mechanism has been installed and the library is powered on, it should operate exactly as it did before the hardware update.*

## Enabling the new configuration

1. Log into the Remote Management Interface on the library as an Administrator user.
2. Navigate to the *Configuration > System > Library 48U Config*.

After taking note of the warnings on the screen, select **Set 48U Library Config** to reset the configuration and enable the use of more than 6 expansion modules.



### **WARNING:**

Once this configuration is enabled, it cannot be reversed. The library partition configuration will be reset and any previously saved configuration files are no longer compatible. Ensure you have the library configuration documented so it can be reconfigured manually after the upgrade.

3. When the upgrade is complete, the library will reboot. If you plan to add additional expansion modules or drives, power down the library and add them at this point so they can be included in the new configuration. If necessary, power on the library.
 

***NOTE:** After the upgrade is complete, the base unit can support up to 15 expansion modules, for a total of 48U rack space. There can be no more than 8 expansion modules above the base module, and no more than 7 expansion modules below the base module. See the Expansion Module Installation Guide for instructions on installing expansion modules.*
4. Reconfigure the library partitions and other parameters using the configuration settings you noted at the beginning of the process.
5. Create a new configuration backup file using the Remote Management Interface Configuration > System > Save/Restore Configuration screen.
6. Library modules, tape drives and tape cartridges will be renumbered. Confirm the backup application is mapped to the correct library resources.

## Verifying the upgrade procedure

1. Check the overall library status from the RMI Status > Library Status screen.
2. Using the OCP or RMI, check for events.
3. Verify that the library detects all of the library components from the RMI Status > Partition Map > Configuration Status screen.
 

If any expansion modules, power supplies, or tape drives are not detected, verify that all cords and cables have been properly installed.

If using the MSL Encryption Kit, you might need to enter the token password.
4. Run the robotic test from the RMI Maintenance > Library Tests > Robotic Test screen.
 

The robotic test performs a full inventory and exercises all robotic assembly movements and sensors.
5. Resume host applications.

