Overland Storage

NEO® 8000e Library

User Guide

Preface

This guide provides installation instructions and operational information necessary for using the Overland Storage NEO® 8000e tape library. It assumes you are familiar with basic functions of your computer; Small Computer System Interface (SCSI), Serial Attached SCSI (SAS), and Fibre Channel (FC) devices; as well as networking concepts and terminology. It also assumes you are knowledgeable about the Storage Area Network (SAN) to which your NEO 8000e library is being connected.

Product Documentation

NEO 8000e product documentation and additional literature are available online at:

http://www.overlandstorage.com/

Overland Technical Support

For help configuring and using your product, search for help at:

http://support.overlandstorage.com/kb

You can email our technical support staff at techsupport@overlandstorage.com or get additional technical support information on the Contact Us web page.

Our Overland Storage Technical Support staff is also available to assist you by phone at:

1.877.654.3429 (Toll-free and active only in the U.S. and Canada)
1.858.571.5555 x5 (Worldwide access)

For a complete list of support times depending on the type of coverage, visit our web site at:

http://support.overlandstorage.com/support/overland_care.html

In addition, European customers can contact our United Kingdom office at:

+44 (0) 118-9898050
9:00 A.M. to 5:00 P.M. (GMT) Monday through Friday

Downloading Firmware Updates

The latest release of the firmware for the NEO 8000e libraries can be obtained from the Overland Storage FTP site:

1. Point your browser to:

   ftp://ftp.overlandstorage.com/firmware/Neo_Series/NeoE/Neo8000E.

2. Download and install the latest firmware file.

For more assistance, search for help at: http://support.overlandstorage.com/.

Documentation Conventions

This User Guide employs several typographical conventions to help explain how to use your NEO 8000e library.

Convention	Description & Usage
Boldface	Words in *boldface* indicate items to select such as menu items or command buttons.
Ctrl-Alt-r	This *type of format* details the keys you press simultaneously. In this example, hold down the **Ctrl** and **Alt** keys and press the **r** key.
NOTE	A *Note* 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.
IMPORTANT	An *Important* 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.
⚠ CAUTION	A *Caution* contains information that the user needs to know to avoid damaging or permanently deleting data or causing physical damage to the hardware or system.
⚠ WARNING ADVERTISSEMENT	A *Warning* contains information concerning personal safety. Failure to follow directions in the warning could result in bodily harm or death. Un 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.
Menu Flow Indicator (**>**)	Words in bold font with a greater than sign between them indicate the flow of actions to accomplish a task. For example, **Setup > Passwords > User** indicates that you should press the Setup button, then the Passwords button, and finally the User button to accomplish a task.

Electrostatic Discharge Information

A discharge of static electricity can damage static-sensitive devices. Proper packaging and grounding techniques are necessary precautions to prevent damage. To prevent electrostatic damage, observe the following precautions:

- Transport products in static-safe containers such as conductive tubes, bags, or boxes.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free stations.
- Cover the library with approved static-dissipating material.
- Use a wrist strap connected to the work surface and properly-grounded tools and equipment.
- Keep the work area free of non-conductive materials such as foam packing materials.
- Make sure you are always properly grounded when touching a static-sensitive component or assembly.
- Avoid touching pins, leads, or circuitry.

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CHAPTER
1

NEO 8000e Library Overview

The NEO 8000e library is an enterprise-class tape library from Overland Storage that provides unmatched performance for organizations with very large amounts of mission-critical data.

This chapter describes the major components and accessories of the NEO 8000e enterprise library:

- Library Interfaces
- Capacity Configurations
- Front Components
- Rear Components

IMPORTANT: In order to meet Class A EMC requirements, a **shielded** Ethernet cable must always be used for the management port connection.

Library Interfaces

The NEO 8000e libraries are available with the following drive interfaces:

- Small Computer System Interface (SCSI) – an industry standard for connecting peripheral devices and their controllers to an initiator. A SCSI interface-to-host system supports either Low Voltage Differential (LVD) or Single Ended (SE) attachment.
- Fibre Channel (FC) – a network technology which transports SCSI commands over Fibre Channel networks.
- Serial Attached SCSI (SAS) – a point-to-point serial protocol that replaces parallel SCSI bus technology (multidrop) and uses the standard SCSI command set. It has no termination issues, supports up to 16,384 devices (using expanders), and eliminates clock skew.

Library Robotics Control

The library robotics control is provided through the path (bridge) of a tape drive's Automation/Drive Interface (ADI). The host manages the library using Logical Unit Number (LUN) 1 of the bridging drive's target ID. As a result, the library has the same target ID as the host bridge drive.

Library Controller Card

The Library Controller card (Figure 1-1) contains a single microprocessor and associated logic devices to control all robotics operations and manage overall library functions. The microprocessor enables the interface between the library and the host system, including the Web Management Interface remote access). The Web Management Interface enables you to remotely monitor and control the tape library from any computer in a local network or the Internet.

Figure 1-1: NEO 8000e Library Controller Card

The Library Controller card is installed in the Primary card cage at the bottom rear of the library, and can be serviced without requiring special tools.

> ⚠ **CAUTION:** The Library Controller card must be installed in the **right slot** of the lower **Primary card cage.** The upper Secondary card cage does not support the required connections for proper operation of the Library Controller board.

Capacity Configurations

Drives 1-6 are powered by the lower redundant power supplies that come standard on the NEO 8000e. The optional power supply add-on kit adds two more power supplies in the upper level power bay to support the addition of drives 7-12 (Figure 1-2).

Upper Power Bay

Drives 7-12

Basic Configuration

Fully Populated Configuration
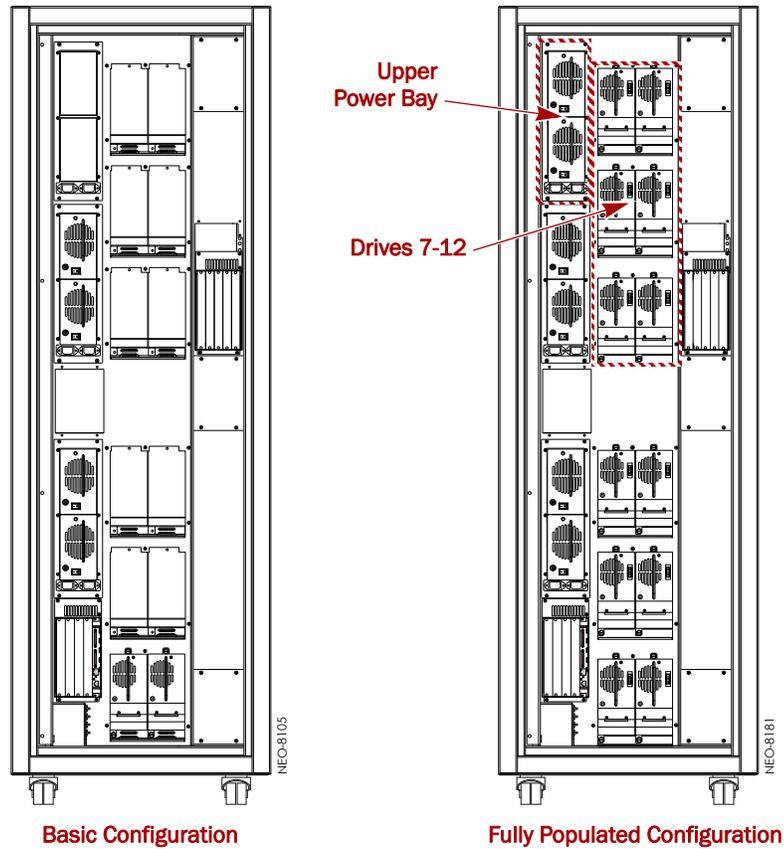
Figure 1-2: NEO 8000e Rear Views: Basic and Fully Populated

Front Components

The library is designed to allow easy access to the control panel and tapes from the front (Figure 1-3).
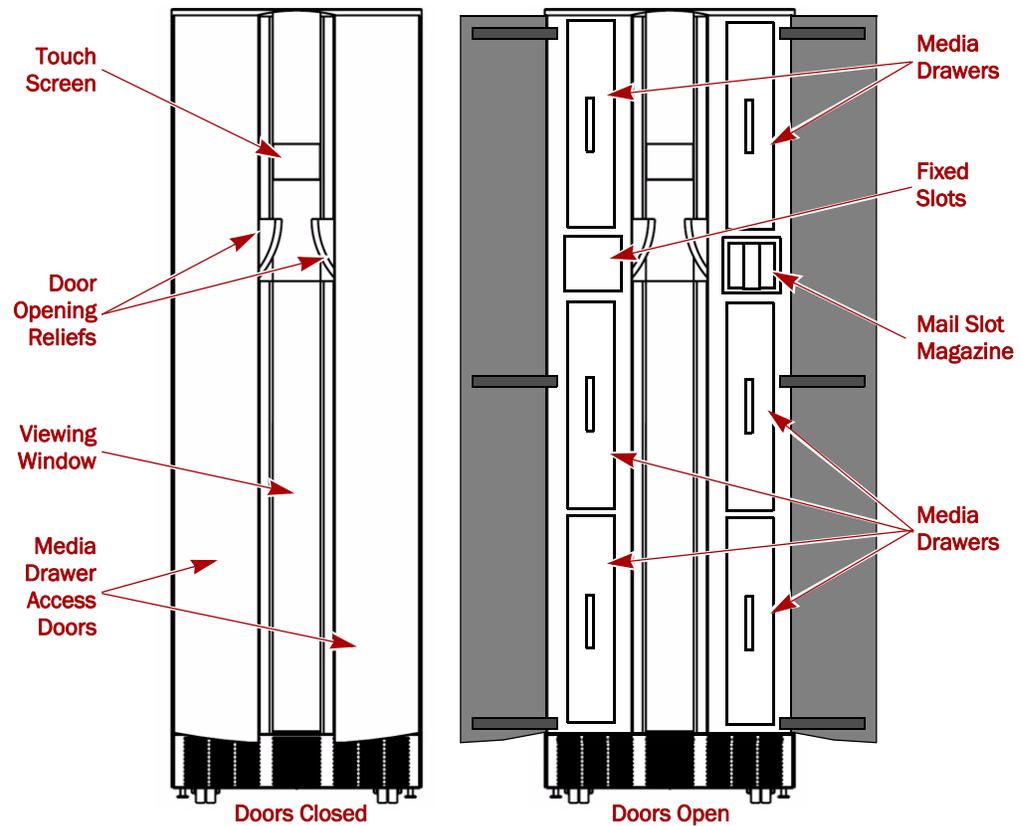
Figure 1-3: NEO 8000e Front View

Touchscreen

The touchscreen on the front of the NEO 8000e provides an easy way to directly communicate with the library. By gently pressing the virtual buttons, you can select menus and options to change library settings.

Mail Slot Magazine

The NEO 8000e has one removable import/export tape cartridge magazine, called a Mail Slot, that is accessible through the right front door. The Mail Slot holds up to 15 LTO cartridges. It provides an easy method for adding or removing cartridges without having to stop the library to open drawers.

Media Drawers and Fixed Slots

There are six media drawers (Figure 1-4) in the NEO 8000e library. Each drawer holds up to 80 LTO cartridges.
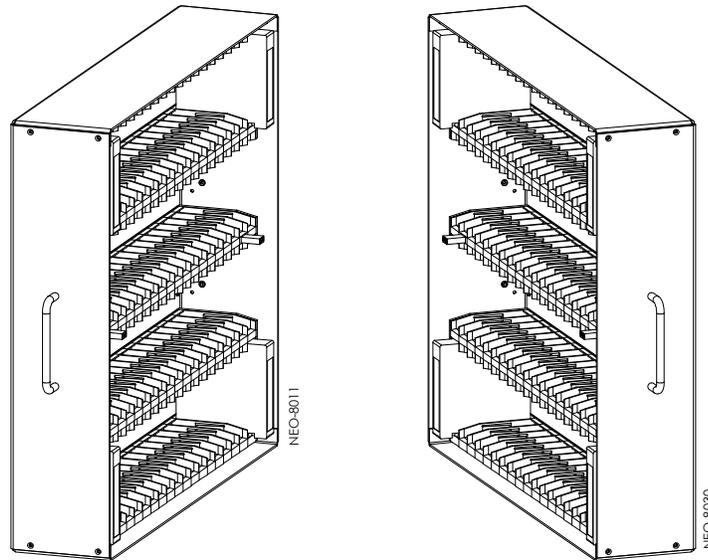
Figure 1-4: NEO 8000e Left and Right Media Drawers

For security and safety, the drawers are internally latched to prevent unauthorized access. With the proper security credentials, they can be released from the touchscreen on the front of the library.

⚠ **WARNING:** Removing the media drawers from the library units is not recommended except by Authorized Overland Service Technicians.

⚠ **AVERTISSEMENT:** Retrait des tiroirs des médias à partir des unités de la bibliothèque n'est pas recommandée, sauf par des techniciens agréés par Overland Service.

Between the left side top and middle drawers, directly across from the Mail Slot, is a row of Fixed Slots that can only be accessed by the internal robotics. These slots hold up to 20 LTO cartridges. They can be accessed from the front touchscreen by pressing the virtual buttons Menu > Maintenance > Load/Unload Fixed Slots. They can also be reserved for cleaning cartridges using Menu > Library > Total Reserved Slots.

The NEO 8000e comes with 1-6 drawers enabled, depending on the purchased configuration. Any disabled drawers can be activated by purchasing additional capacity and entering the capacity upgrade code (Figure 1-5).
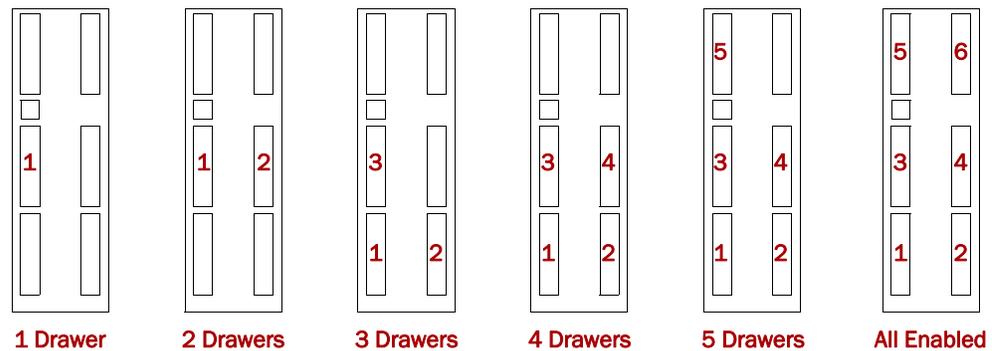
Figure 1-5: Media Drawer Activation Order

NOTE: The fixed slots on the left side between the top and middle drawers are always enabled and listed after any enabled drawers. For example, in an LTO library with four enabled drawers (Slots 1–320), the fixed slots are numbered 321 to 340.

Rear Components

The rear of the library (Figure 1-6 on page 1-7) provides easy access to the operational hardware. The basic unit has 0 drives, 4 power supplies (for the lower drives and robotics, both primary and redundant), and a Library Controller card.

There is a power supply case for the optional power supplies required for drives 7–12. Two expansion card cages are available for the Library Controller card and any optional expansion cards.
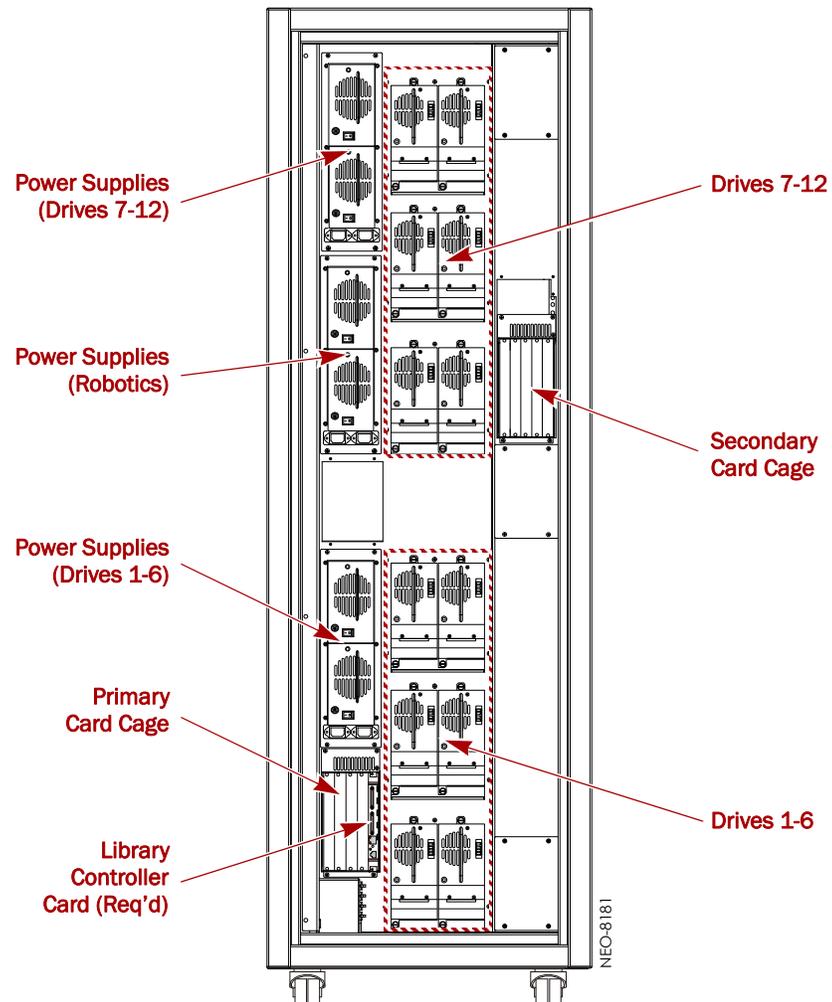
Figure 1-6: NEO 8000e Rear View

Power Supplies

Power is routed via power cords through the base plate of the unit into connectors on the circuit breaker box at the base of the built-in power strip. The power strip contains geographically placed receptacles which make AC power available to the power supply cases without the need for routing cables.

Each power supply case holds two power supplies (Figure 1-7). The upper power unit is the primary power source while the lower unit is the redundant power source.
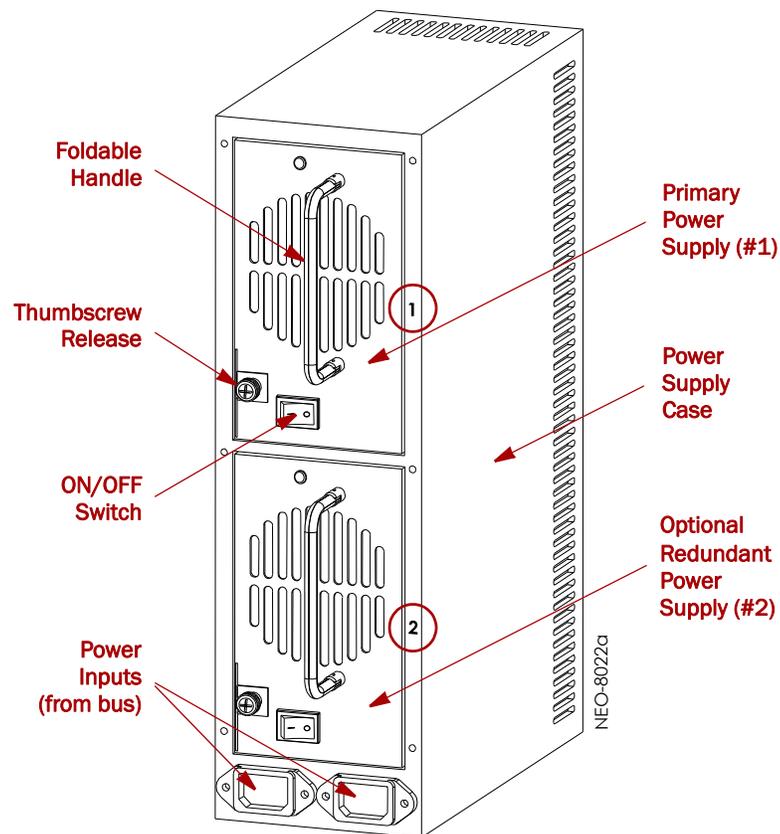
Figure 1-7: Power Supplies in a Power Supply Case

The NEO 8000e library has three power supply cases that distribute AC power to different portions of the library. Each power supply case holds two modular auto-ranging power supplies: a primary power supply for daily use and a secondary power supply for redundancy.

Each power supply is capable of using any nominal AC voltage between 100 and 240 Vac power, at 50 Hz or 60 Hz. A thumbscrew release secures each power supply in it's respective power supply case.

For the library to operate, power must be available to the library controller card, robotics, and all installed drives. Therefore, two power supplies must be installed in the middle Robotics power supply case and two power supplies must be installed in the lower Drives 1-6 power supply case. If more than 6 drives are installed, two power supplies must also be installed in the upper Drives 7-12 power supply case.

Power Redundancy

Power supply cases that contain two power supplies provide redundancy for mission critical operations and avoid power interruption to the library. Under normal operating conditions, power supplies in the same power supply case share the load. However, if one of the power supplies fails, the other will assume the full load.

Power Circuits

NEO 8000e has two power circuits to support the power redundancy option (Figure 1-8).
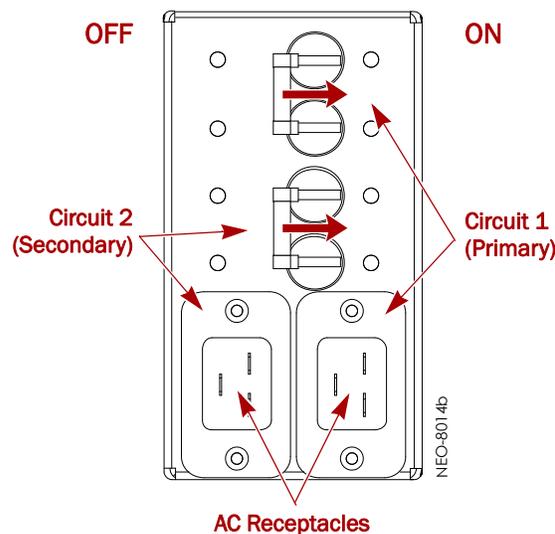
Figure 1-8: NEO 8000e Circuit Breakers Showing Primary and Secondary Circuits

The Primary circuit consists of the right-hand receptacle and top breaker on the circuit breaker box, the upper receptacles of the power strip, and the upper installed power supplies. The power strip receptacles and power supply cases are labeled with a "1."

The Secondary circuit is the left-hand receptacle and lower breaker on the breaker box, the lower receptacles of the power strip, and the lower installed power supplies. The power strip receptacles and power supply cases are labeled with a "2."

Drive Assemblies

The NEO 8000e library supports up to 12 tape drives using one of the standard interfaces:

- SAS (Figure 1-9 on page 1-10)
- FC (Figure 1-10 on page 1-10)
- FC (Figure 1-11 on page 1-11)

The tape drives are mounted on special assemblies to make them easier to insert and remove.
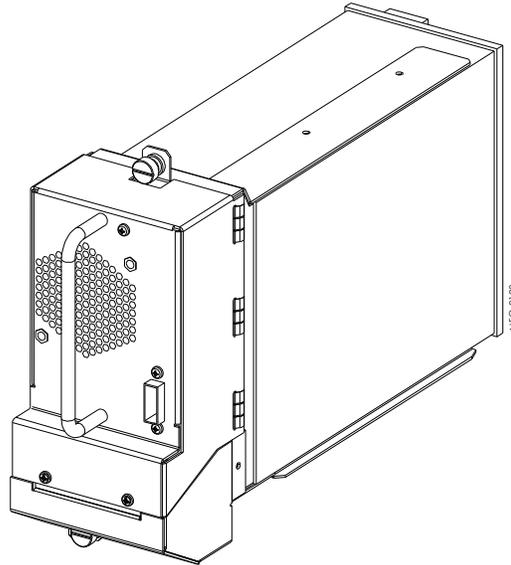
Figure 1-9: NEO 8000e SAS Drive Assembly
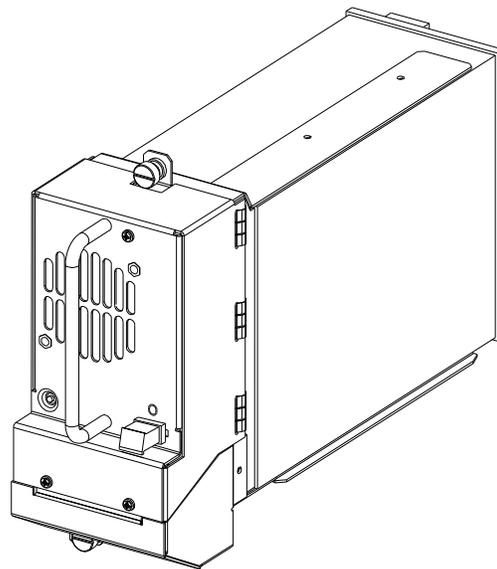
Figure 1-10: NEO 8000e FC Drive Assembly
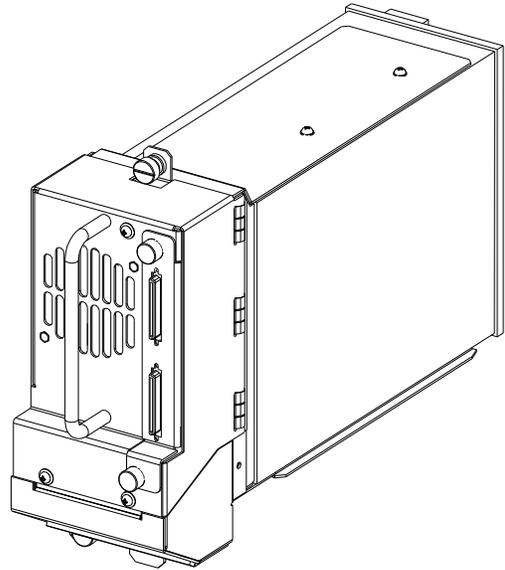
Figure 1-11: NEO 8000e SCSI Drive Assembly

The I/O is managed through connections located to the right of the fan.

The NEO 8000e base configuration has zero drives. All drives are purchased separately. Additional drives can be added one or more at a time, as needed, until the library is fully populated with 12 drives (Figure 1-12).
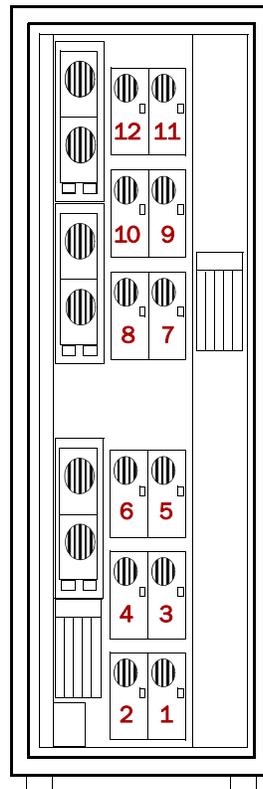
Figure 1-12: NEO 8000e Drive Numbering

Unpacking and Setting Up

> **IMPORTANT:** Overland Storage recommends that all NEO 8000e Libraries be installed by an Overland Storage authorized service provider.

This chapter describes how to unpack and set up a new NEO 8000e library. This same information is also available in the *NEO 8000e Quick Start Guide/Unpacking Instructions* located on the outside of the shipping container.

> ⚠ **WARNING:** Exercise care when unpacking and moving the NEO 8000e library. Due to its size and weight, it is recommended that at least two people be involved with the unpacking process.

> ⚠ **AVERTISSEMENT:** Soyez prudent lors du déballage et du déménagement de la bibliothèque NEO8000e. En raison de sa taille et son poids, il est recommandé qu'au moins deux personnes aident au déballage.

> ⚠ **CAUTION:** You should read and familiarize yourself with this entire chapter before starting the unpacking procedure. Steps performed out of sequence may cause damage to the library which voids existing warranties.

> **NOTE:** Retain all packaging materials in a protected place in case the library needs to be shipped to a different location.

Tools Needed

These tools are needed to unpack and install the library:

- 9/16-inch wrench
- 10-inch adjustable wrench
- Box knife
- #2 stubby or offset screwdriver
- #2 Phillips screwdriver
- Level, at least 10 inches long (25cm)

Removing the Outer Carton

To ensure safe delivery, each NEO 8000e comes packed with tie-down hardware securing it to the pallet. The proper steps must be taken to remove the packaging.

NOTE: The container pallet is labeled "RAMP SIDE" on each corner of the removal side.

1. **Position** the shipping container on a level surface so there is enough clearance to work around it (Figure 2-1).

   - Allow at least 10 ft. (3.0m) of clearance on the removal side of the container.
   - Allow about 3 ft. (1.0m) of clearance around the other three sides.
   - Allow at least 8 ft. (2.5m) of vertical clearance.

Allow at least 10 ft. in the rear to remove the library from the pallet

Allow 3 ft. around the library

Allow 8 ft. vertical clearance

Ramp

Floor
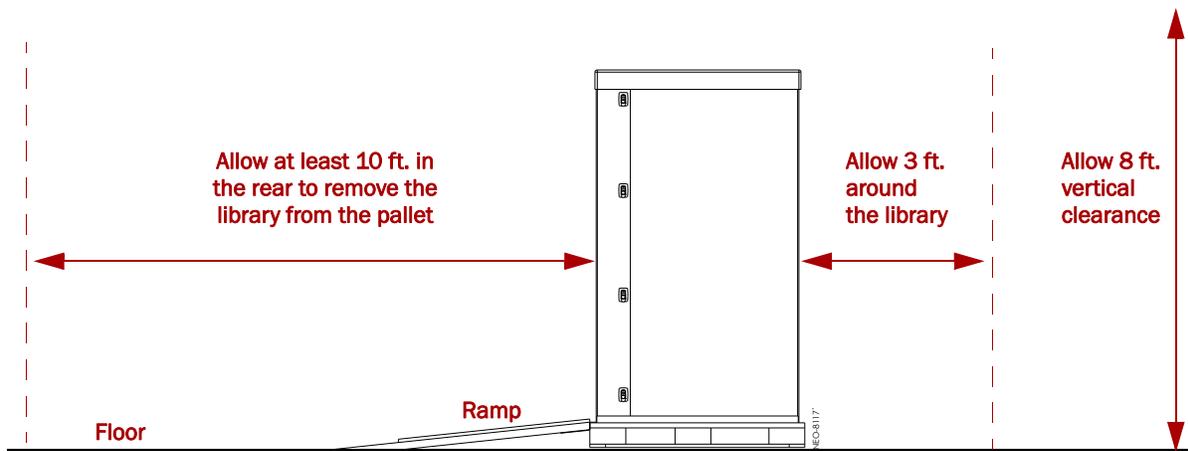
Figure 2-1. Unpacking Space Requirements

2. Remove the outside packaging (Figure 2-2):

Top Cap

Corner Boards

Plastic Retainers

Shipping Straps
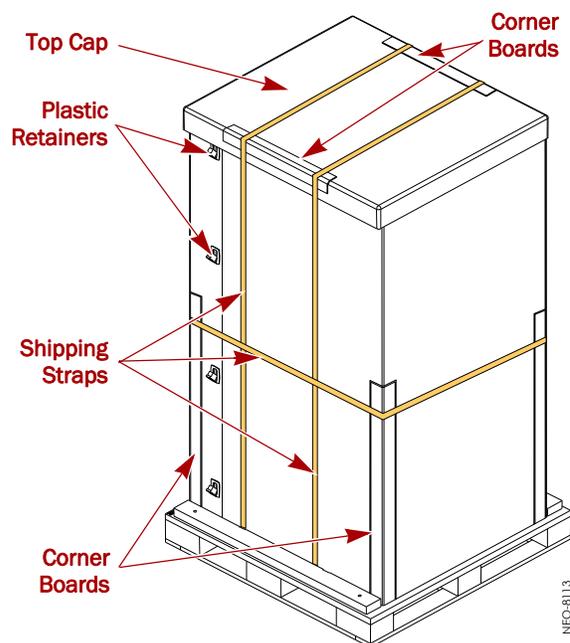
Corner Boards

Figure 2-2: Library Packaging Components

   a. Cut the **shipping straps** and remove.

   b. Remove the **corner boards** from the top and sides of the box.

   c. Remove the **top cap**.

   d. Release and remove all of the **plastic retainers** (on opposite corners).

   e. Remove the two (2) large pieces of **cardboard** surrounding the library.

3. Remove the inner packaging (Figure 2-3):
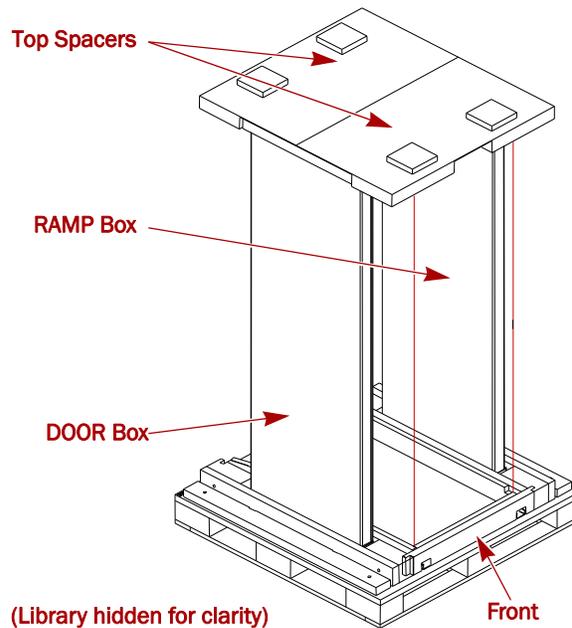
Figure 2-3: RAMP and DOOR Box Locations

   a. Holding the RAMP and DOOR boxes, remove the two (2) **top spacers**.

   b. Remove the **RAMP and DOOR boxes** and set them aside.

   c. Remove the **plastic bag** that covers the library.

Detaching the Pallet

Once the cardboard pieces are removed, you can remove the hardware that secures the library to the pallet.

1. Remove the ramps from the RAMP box and lay them down, placing the brackets into the corresponding slots on the rear of the pallet (Figure 2-4).
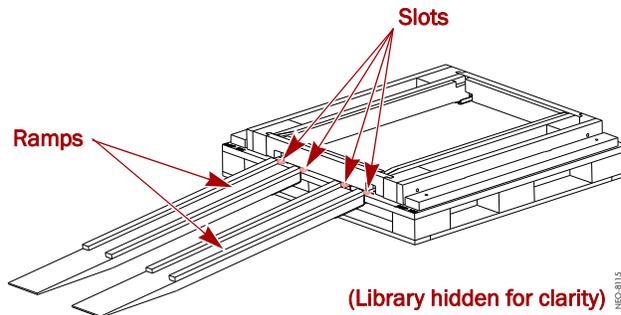
Figure 2-4: Placing the Ramps in Position

2. Remove the **rear hardware** holding the library on the pallet:

   a. To access the hold-down bolts and leveling legs, remove the **rear crosspiece** (Figure 2-5).

   Use a #2 Phillips screw driver to remove the crosspiece screws. Then, lift and slide the crosspiece out to remove.
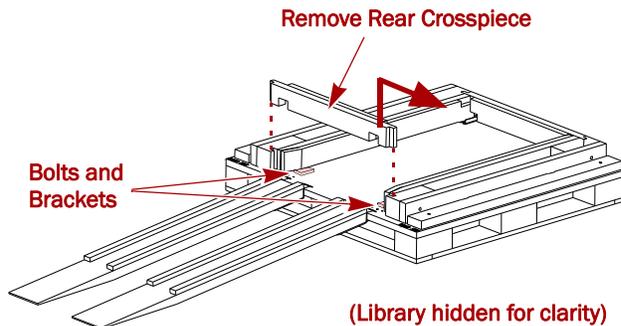
Figure 2-5: Removing the Rear Crosspiece

   b. Use a 9/16" wrench to remove the two **bolts and hold-down brackets**.

   c. Use a 10" adjustable wrench to raise the two **leveling legs** at least to the top of the wheels (Figure 2-6).
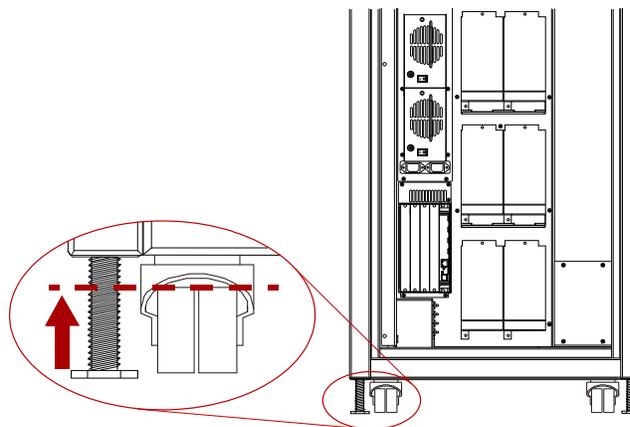
Figure 2-6: NEO 8000e Casters and Leveling Legs

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3. Remove the **front hardware** holding the library on the pallet:

   a. Using a #2 Phillips screw driver, remove the crosspiece **screws**.

   b. Lifting one end of the crosspiece at a time, use the 9/16" wrench to remove the **bolts and hold-down brackets** securing the library to the pallet.

   c. Using care not to allow the library to come off the pallet, move the library back just far enough to lift the **front crosspiece** out.

   d. Use the 10" adjustable wrench to loosen and raise the two **leveling legs** at least to the top of the wheels (Figure 2-6 on page 2-4).

4. Verify that all four leveling legs can clear the floor at the bottom of the ramp and that the library is only **supported by the four caster wheels**.

> ⚠ **WARNING:** Most of the weight of a library is in the rear of the unit. If the leveling legs are not raised high enough, they can catch at the bottom of the ramps, tipping over the library unit.

> ⚠ **AVERTISSEMENT:** La plupart des poids d'une bibliothèque est située à l'arrière. Si les pieds de nivellement ne sont pas élevés assez haut, ils peuvent prendre au bas de la rampe et faire basculer la bibliothèque.

5. Using two people, carefully **move the library** down the ramps and onto the floor.

> ⚠ **CAUTION:** To prevent damage, **do not pull** on the media drawer handles at any time while moving the library.

Installing Optional Rear Door Kit

If the optional rear door was purchased with the library, follow the instructions that came with the door to install it at this time.

Leveling the Library

You are now ready to move the unit into its final position and level it.

> ⚠ **CAUTION:** To prevent damage, **do not pull** on the media drawer handles at any time while moving the library.

1. **Position** the library at its operating location.

2. Run down **all four leveling legs** by hand until they contact the floor.

3. Using the 10" adjustable wrench, turn each **leveling leg**, one after the other in equal increments, until you have turned them at least one full turn.

NOTE: Be sure the library has been raised high enough so none of the casters touch the floor.

4. Place a level, front to rear, on the **top side edge** of the library (Figure 2-7).
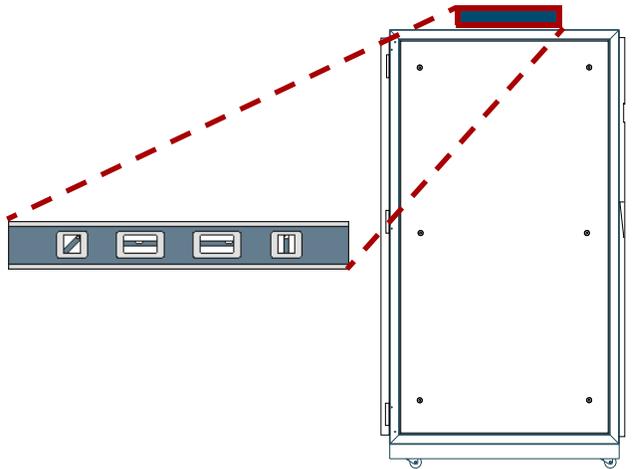
Figure 2-7: Positioning the Level

5. Note the position of the bubble. **Raise** both of the front legs or both of the rear legs the **same amount** to achieve a level front-to-rear reading.

6. Place the level across the **top front edge** of the library.

7. Note the position of the bubble. **Raise** both of the left feet or both of the right feet the **same amount** to achieve a level side-to-side reading.

8. **Recheck** the level from front-to-rear and from side-to-side. Adjust as needed until the library is level.

Remove the Drawer Shipping Brackets

Once the library is in position, use a Phillips screwdriver to remove the **six** drawer shipping brackets located inside the doors on the side trim pieces (Figure 2-8). Replace the screws back into the trim pieces and retain the brackets with the shipping carton.
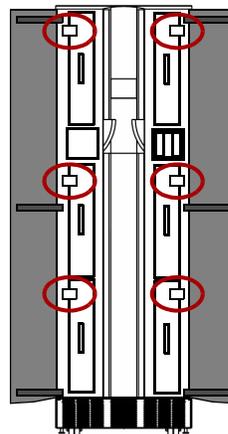
Figure 2-8: Drawer Shipping Brackets

Attaching the Front Doors

As the last step, attach the front doors.

1. Remove the **two doors** from the DOOR shipping box and extract them from their plastic shipping bags.
2. Using the supplied Phillips screws, attach the **left door hinges** to the frame (Figure 2-9 on page 2-7).
3. Repeat Step 2 for the **right** door.
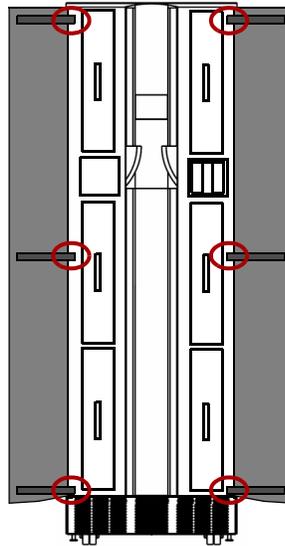
Figure 2-9: Attaching the Doors

CHAPTER 3

Installation and Initialization

Once the NEO 8000e library is secure and level, you need to verify that the basic cable connections are in place before powering on the library for the first time.

Installation Considerations

If the unit is installed in a closed environment it may require further evaluation by Certification Agencies. The following items must be considered:

- Protect the tape library from extreme temperature and humidity. Overland recommends that you install the library in a clean, air-conditioned environment where water and moisture cannot enter the library. Keep the air as free from dust as possible.

- The ambient temperature within the unit may be greater than room ambient. Installation should be such that the amount of air flow required for safe operation is not compromised. The maximum operating temperature for the equipment environment is 40°C. Consideration should be given to maximum rated ambient.

- Make sure there is unrestricted air flow around and through the vents on all sides of the case.

- Installation should be secure enough that uneven loading of media doesn't cause a hazardous stability condition.

- Route external cables so that they can be connected without blocking air vents or impeding air flow.

- Keep the library and cabling away from sources of electrical noise, such as elevator shafts, stereo speakers, microwave ovens, air conditioning units, and even telephones. Electromagnetic fields can interfere with the signals on copper cabling and introduce errors, slowing down the network.

Power Input Supply

Check nameplate ratings to assure there is no overloading of supply circuits that could have an effect on over-current protection and supply wiring. Refer to for specifications.

Grounding

Reliable grounding of this equipment must be maintained. Particular attention should be given to supply connections when connecting power strips, rather than direct connections to the branch circuit. A UPS is recommended for each power cord.

Power-Up and Cabling Pre-Check

⚠ **CAUTION:** This equipment has been tested for electromagnetic emissions and immunity using good quality shielded cables. If you use unshielded or poor quality cables, or otherwise vary from good practice, you might not comply with national and international rules.

The NEO 8000e comes from the factory with installed components connected and ready to use. Before powering up the library, it is recommended that you verify these connections have not come loose in shipment.

➡ **IMPORTANT:** NEO 8000e Libraries come with no factory-installed drives ("zero drive" configuration). All drives are shipped as "add-on" drives and must be installed on site. Refer to the instructions that come with every add-on drive assembly for the preferred installation procedure.

Interface Cable Specifications

The library is a high-performance system. To avoid degradation of performance, use the highest-quality interface cables from a reputable manufacturer of computer cables. All SCSI cables used with the library should meet the following requirements:

- Shielded or double-shielded, as required to meet EMI specifications.
- Impedance match with cable terminators that meet current SCSI specifications.
- Characteristic impedance of 115 ohms.

The host cable must also meet the these requirements:

- Each end of a twisted pair ground connected to chassis ground.
- Maximum cable length of 10 ft. (3m) for a single-ended Fast/Wide SCSI bus, including the internal wiring of SCSI device.
- Maximum cable length of 39 ft. (12m) for an LVD SCSI bus.
- Cables of different impedances should not be used together.

NOTE: Additional specifications to assure the highest SCSI performance can be found in the current version of ANSI X3.131.

Cabling Examples

Each drive connects to the SAN or other network via the drive assembly rear connections. Because the library uses an Automation/Drive Interface (ADI) to control the robotics, it is easy to configure network cabling regardless of the network type, number of hosts, or number of drives.

Some of the common NEO 8000e cabling configurations for Fibre Channel (FC), SAS, and SCSI drives are shown below.

Fibre Channel Example

A FC SAN is supported through the ADI using FC connections on FC drive assemblies (Figure 3-1).
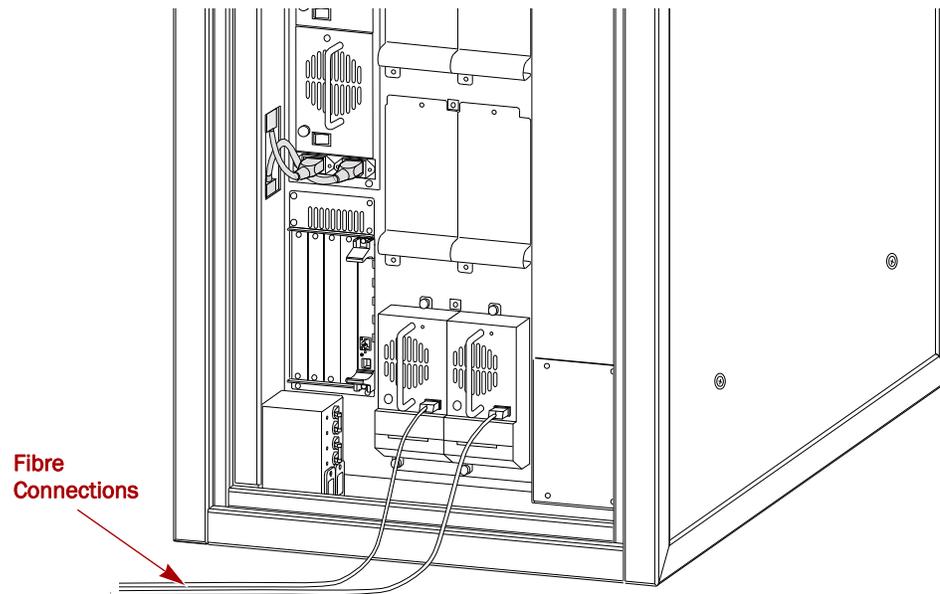
Fibre
Connections

Figure 3-1: Typical Fibre Channel Configuration

SAS Cabling Example

A NEO 8000e supports a SAS SAN through the ADI using SAS connections on the SAS drive assemblies (Figure 3-2).
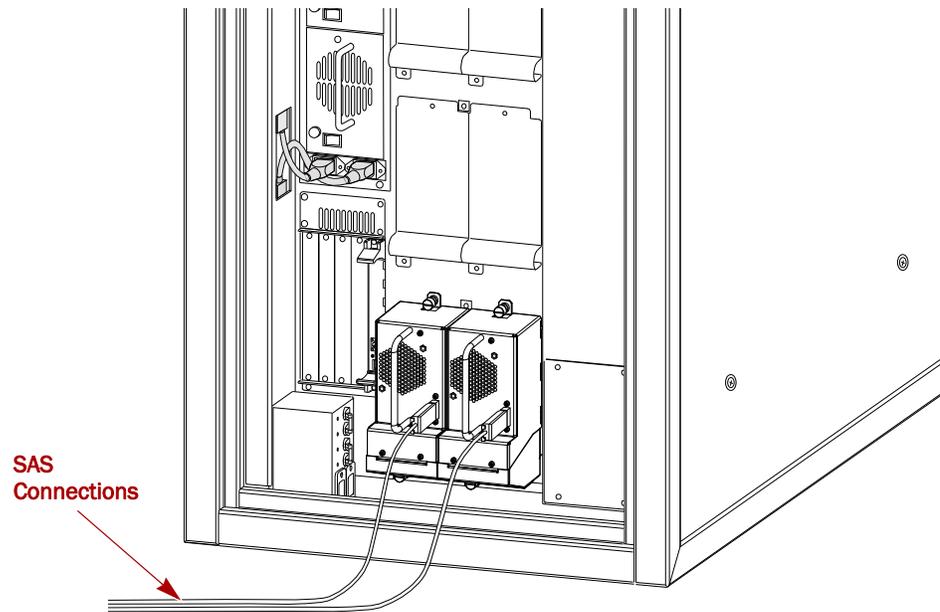
SAS Connections

Figure 3-2: Typical SAS Configuration

SCSI Drive Example

A NEO 8000e supports a SCSI Storage Area Network (SAN) through the ADI using direct connect drive assemblies (Figure 3-3). Each SCSI drive should be connected to an individual SCSI host.

Terminators

SCSI Cables
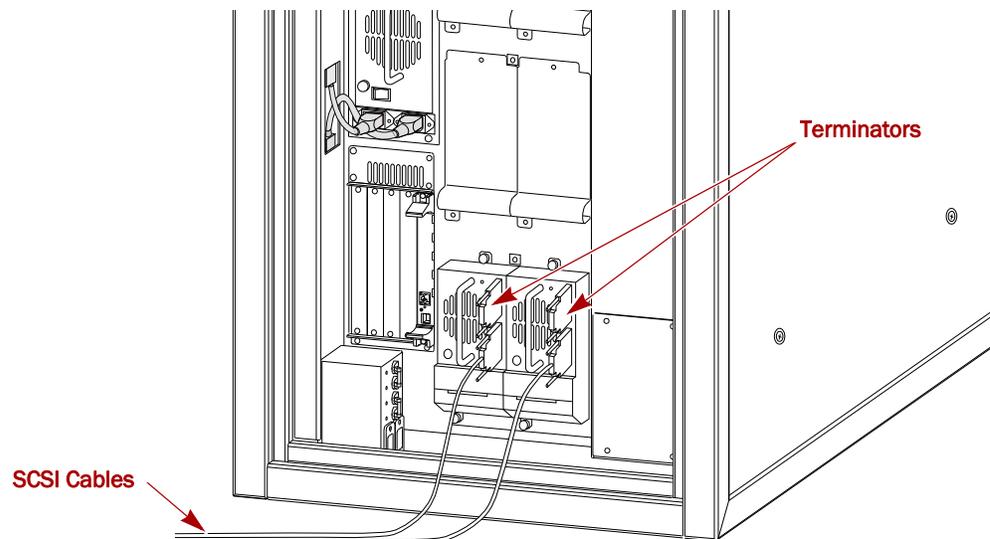
Figure 3-3: Basic SCSI Network with Two SCSI Drives

Powering Up the Library

Use the following instructions to apply power to your library:

1. Route the two supplied **power cords** through the slot opening in the base plate at the bottom of the library.

2. Connect the power cords to the two **AC receptacles** at the bottom of the circuit breaker box (Figure 3-4).
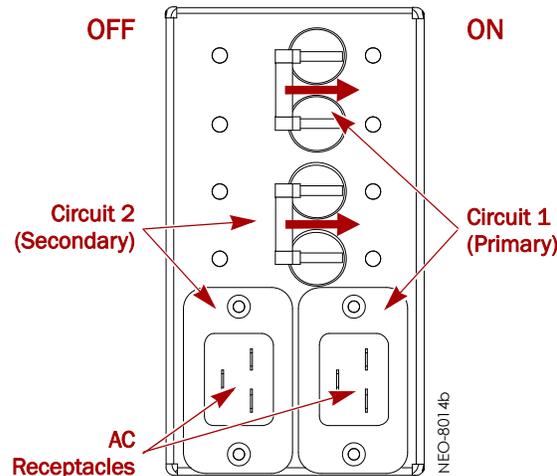
Figure 3-4: NEO 8000e Circuit Breakers (OFF Position)

3. Plug the other end of the **power cords** into an UPS or other AC power source.

4. Set both circuit breakers to the **ON position**.

5. Set the **power switches** on the power supplies to the ON (|) position.

At this point, the library automatically turns on. You do not need to tap the touchscreen on the front panel.

Power-On Self Test

When power is first applied to the library, a series of Power-On Self Test (POST) diagnostics are performed. The POST consists of these items occurring in this order:

- Validates firmware CRC.
- Activates the power supplies in this order:
  - Power supplies for robotics (middle bay)
  - Power supplies for drives 1-6 (lower bay)
  - Optional power supplies for drives 7-12 (upper bay)
- Tests SCSI protocol chip.
- Checks the status of the drives installed.
- Initializes the internal robotics.
- Inventories the media drawers and drives.
- Activates full library functionality.

As the POST starts, the Initialization screen appears (Figure 3-5).

Figure 3-5: Initialization Screen

After about 50 seconds (or if the Continue button is pressed), the Default screen appears (Figure 3-6).

Figure 3-6: Library Default Screen

NOTE: Though visible, this screen is not fully functional until POST completes. During POST, you can only access the Network Options and Library Info sub-functions in the View System Data area.

Once POST completes, the library is online and ready for use.

Powering Down the Library

⚠ **WARNING:** To reduce the risk of electric shock or damage to equipment, always remove any power cords while working with the unit.

⚠ **AVERTISSEMENT:** Pour réduire le risque de choc électrique ou endommagement de l'équipement, retirez toujours les cordons électriques en travaillant avec l'appareil.

Should you ever need to, this is the recommended method for powering down the library. It initiates a controlled power-down sequence that provides enough time to park the robotics assembly and shuttle:

1. On the touchscreen, press the virtual **Power button** located on the Default screen.

2. Choose **one** of the following options from the dialog box:

   • Press **OK** to confirm power down.

   • Press **Cancel** to return to default display and leave the library running.

Setting Up Reserved Slots

This process deactivates some of the media slots in the library from use as storage slots. This is usually done to meet licensing requirements or to dedicate media slots as cleaning tape slots.

All of the 20 Fixed Slots can be converted to reserved slots. The reserved slots are labeled "Clng *n*" (for cleaning) on the Cartridge Map and Status screens (Figure 3-7).
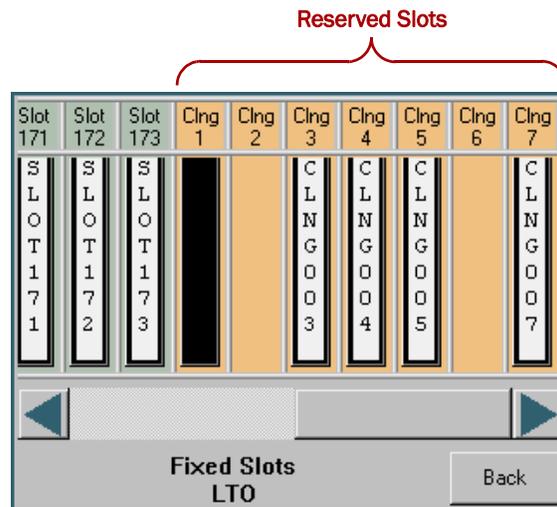
Figure 3-7: Labeling of Reserved Slots

Standard tape cartridge slots are numbered from the front of the Fixed Slots row to the rear. If you reserve just one slot, the last available slot in the row becomes Reserved Slot #1. If you reserve two slots, the last slot becomes Reserved Slot #2 and the slot in front of it becomes #1. Additional reserved slots continue in this rear-to-front pattern.

To reserve one or more slots:

1. At the front panel Default screen, press **Menu > Library** (in Edit Options section).

    NOTE: If a Service password is enabled, the validate password screen is displayed. Enter the correct password and press Validate.

2. On the Library options screen, press the **Total Reserved Slots** button (Figure 3-8).
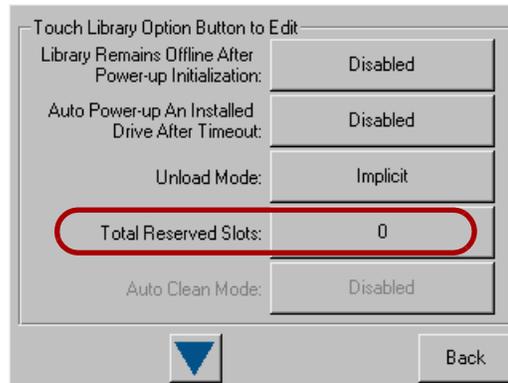
Figure 3-8: Total Reserved Slots Screen

3. Use the keypad to enter the number of slots you want to reserve, and press **Save** (Figure 3-9).
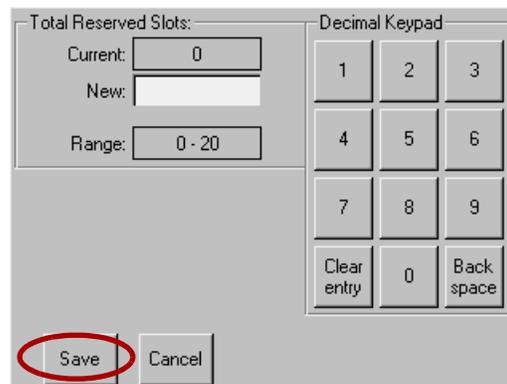
Figure 3-9: Reserved Slots Numeric Keypad

4. At the confirmation screen (Figure 3-10), press **OK**.
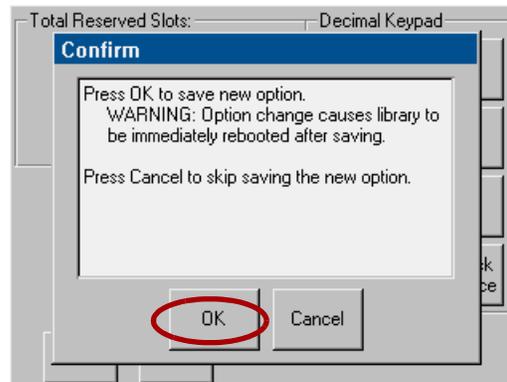
Figure 3-10: Total Reserved Slots Confirmation Screen

The library reboots automatically to activate the reserved slots.

5. To view the change, go back to the Default screen and press **Status**.

Configuring a Fibre Channel Drive

In most cases, you can use the default configuration values for Fibre Channel drives. However, if it becomes necessary to change the default values, these values are editable:

- Port *n* Control
- Port *n* Loop ID
- World Wide Port *n* Name
- World Wide Node Name
- Topology
- Speed
- Directory Registration

Table 5-6 in Chapter 5, "Using the Front Panel Interface," details all the different settings available. The information in this section shows you how to make those changes.

1. From the front panel Default screen, press **Menu**.

2. In the Edit Options area, press **SCSI/FC** to edit the host interface.

   NOTE: If a Service password is enabled, the validate password screen is displayed. Enter the correct password and press Validate.

The initial FC screen is shown (Figure 3-11).
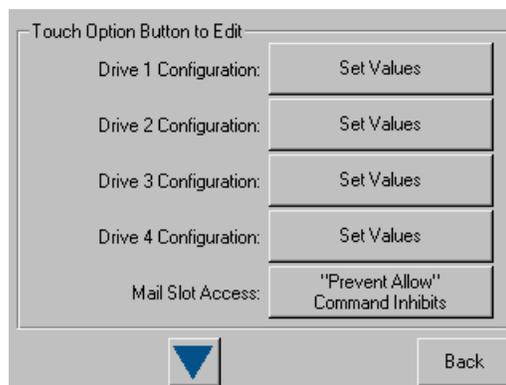
Figure 3-11: FC Initial Screen (Edit Options)

3. If necessary, use the arrow buttons to scroll down to locate the drive being changed.

4. Press the **Set Values** button to the right of the tape drive you are changing. The Set Values edit screen (Edit Drive Configuration) is displayed (Figure 3-12).
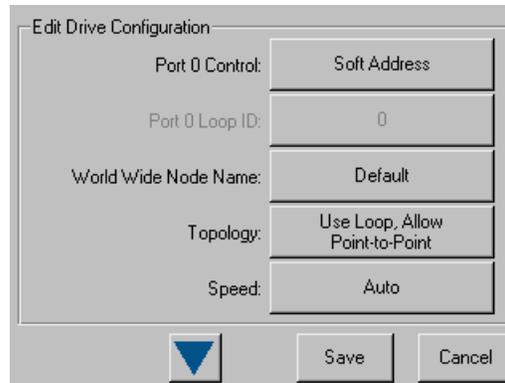
Figure 3-12: Edit FC Drive Configuration (Set Values) Screen

5. Make all the necessary changes by pressing the appropriate buttons and entering the new data.

6. Press **Save**.

   A dialog box appears stating the configuration is being updated, and then you are automatically returned to the FC edit screen.

7. Press **Back twice** to return to the Default screen.

Setting Passwords for Access to Library Functions

The NEO 8000e library lets you assign up to three levels of security using passwords. A fourth level of security is built-in for factory technicians. The default setting is Passwords Disabled. Table 3-1 shows the different security levels and their scope of access:

Table 3-1: NEO 8000e Library Password Security

Security Level	Description
User Level 1	Controls access to Mail Slot Access.
User Level 2	Controls access to Power, Online/Offline, Drawer Access, and Move Media.
Service (Level 3)	Controls access to the Utilities and Edit Options area.
Factory (Level 4)	Reserved – no customer access.

You can manage the passwords for User Levels 1, 2, and the Service Level using the Passwords button as described in this section. Once passwords are enabled, you are always prompted for a password whenever its associated buttons are pressed.

When you return to the Default screen, all password access is cleared and you must reenter the password for new access. Passwords can also be validated by using the Security Level option (see "Validating Passwords" for details).

Each password is represented by four decimal digits that are stored in NVRAM (non-volatile memory) in a range of 1 to 9999 (leading zeros are ignored).

NOTE: While the input box allows for five digits, the passwords are limited to four.

Once Service Level is enabled, you must have that level of password to change or disable the password protection. Also, you can use a higher level password to gain access to a lower level operation. For example, you could use a Service password to access the Move Media operation (which requires Level 2 access).

Validating Passwords

When you have set User-Level passwords or a Service password (see "Editing Passwords" on page 5-32), you can validate a password without disturbing the operation of the library.

1. Select **Menu** > **Security Level**.

2. Press the **Security Level** button for the password that you want to validate (Figure 3-13).
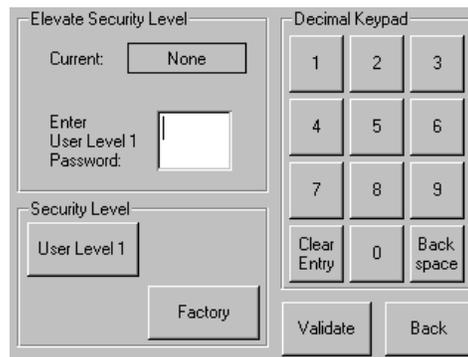
Figure 3-13: Validating a Library Password

3. Enter the password in the Enter [Security Level] dialog box and press **Validate**.

    •   If the password is correct for the selected security level, the Current security level box will flash the security level.

    •   If the password is incorrect for the selected level, a warning box will indicate that the password was incorrect.

Entering Passwords

When you have set User-Level passwords or a Service password, the NEO 8000e library automatically enforces the password access to the appropriate library functions.

In the example shown in Figure 3-13 above, we set the User Level 1 password, which controls access to the Mail Slot.

Thus, when a user presses **Mail Slot Access** from the Default screen, the user must then enter the correct Level 1 password and press **Validate** to access the Mail Slot (Figure 3-14 on page 3-12).
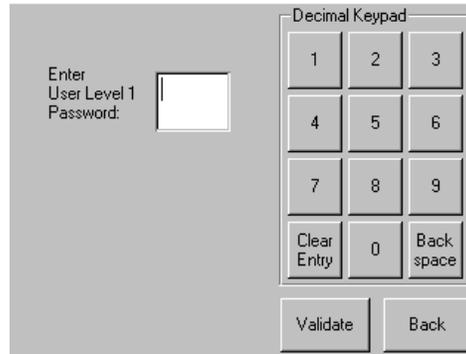
Figure 3-14: Entering a Library Password

Setting or Changing the Library Name

When there is more than one tape library in your installation, it is often useful to assign a name to each library. The default library name is *NEO Series*.

To set or change the name of a NEO 8000e library:

1. From the Default screen, press **Menu** > **Network**.

2. Then press the **down arrow** (▼) to access the second page of Network menu items (Figure 3-15).
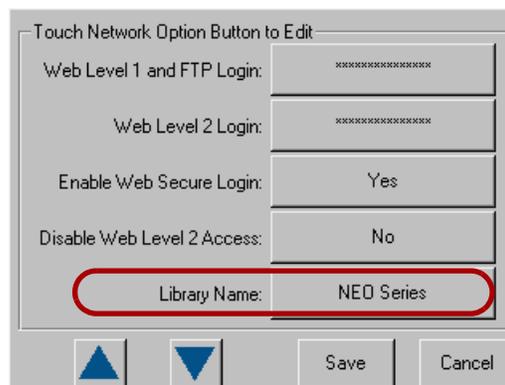
Figure 3-15: Accessing the Library Name Option

3. Press the **Library Name** button.

4. Use the keyboard display to enter the desired library name, then click **OK**.

The library name is displayed in two locations:

• Front panel – To view it there, go to **Menu > View Systems Data > Network Options**. Then press the **down arrow** (▼) to see the second page of network options, where the library name is displayed.

• Remote access screens – The library name is displayed at the top directly below the Web Management Interface navigation buttons.

CHAPTER

4

Daily Operation

This chapter covers some of the NEO 8000e library functions that occur as part of everyday use.

Common Configuration Options

The library provides several configuration options to support a variety of applications and platforms. The settings for each of the available options are stored in non-volatile memory in the library.

For most applications, you do not have to change the factory default settings; however, if you do need to change the configuration, use the instructions provided in the following sections. If you are uncertain whether you need to change a setting, contact your authorized service provider.

For detailed information about the front panel touchscreen and its options, refer to Chapter 5, "Using the Front Panel Interface."

Media Handling

The tape cartridge media is the focus for most of the daily operations of a NEO 8000e library. A library can hold up to 500 cartridges including cleaning cartridges. A Mail Slot magazine allows you to add up to 15 cartridges at a time.

Bar Code Labels

The graphic below (Figure 4-1) shows you how to install a bar code label on an LTO tape cartridge.
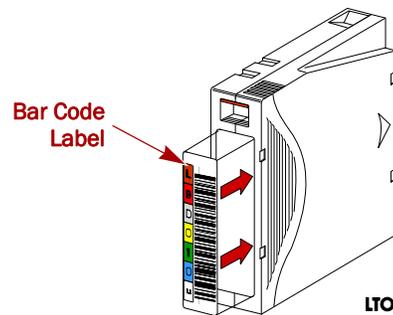
Figure 4-1: Bar Code Label Installation

NOTE: Only Overland Storage bar code labels are supported with the library. To order additional labels, contact your authorized Overland Storage reseller.

LTO Cartridge Media

The following are tips to ensure maximum LTO cartridge media performance and life:

- For best results use Overland Storage media and bar code labels.
- Place labels only in the recessed area, just below the write protection switch.

  Never place labels on the top, bottom sides or rear of the cartridge – they can cause loader faults and interfere with normal operations. Labels placed in such locations can come off inside the equipment causing damage.

- Always inspect cartridges for incorrect or improperly attached labels.
- Never erase information on a cartridge label – always replace the label.

Using Mail Slot Magazine for Small Quantity Exchanges

The NEO 8000e features a Mail Slot magazine that allows you to import or export multiple cartridges without interrupting library operation. The Mail Slot magazine holds 15 LTO cartridges (Figure 4-2).
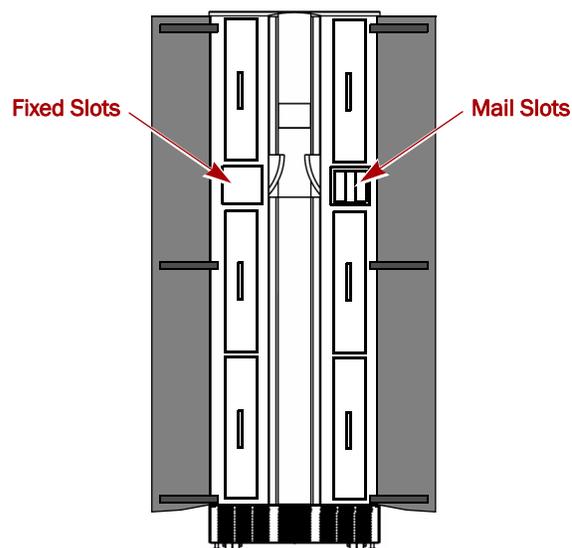
Figure 4-2: Fixed Slots and Mail Slots Location

The first slot is the one closest to the front of the magazine while the last slot is at the rear (Figure 4-3).
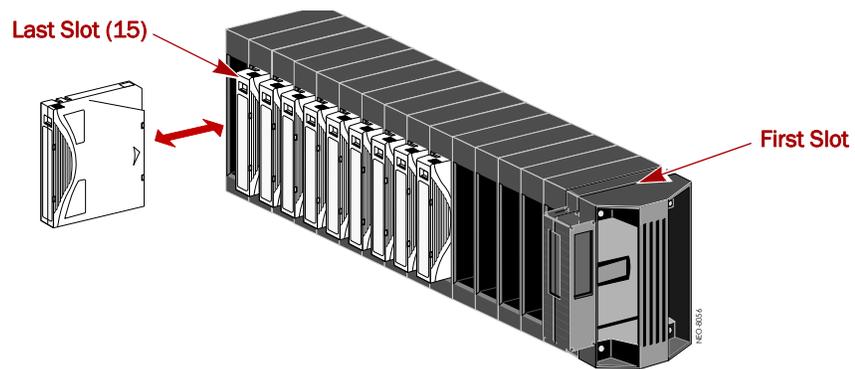
Figure 4-3: Inserting Cartridges Into a Mail Slot Magazine

Insert tape cartridges so that the bar code labels are facing outward and the tape hub is toward the left. Handle and store tape cartridges in a clean, dust-free environment.

Adding Media

Follow these steps to add tape cartridges:

> NOTE: You can also add 10 cartridges at a time using the Load/Unload Fixed Slots button. See "Load/Unload Fixed Slots Button" on page 5-17 for more details.

1. At the front panel, press **Mail Slot Access**.

2. When you hear the latch release, remove the **Mail Slot magazine**.

3. Insert the **tape cartridges** being added to the library into the magazine, and reinsert the magazine into the library.

4. Press the **Mail 1-*nn*** button to relatch it, and then press **Back**.

5. At the Default screen, press **Move Media**.

    The Move Media screen is displayed (Figure 4-4 on page 4-4).

    > NOTE: When selecting the Source or Destination locations, you can repeatedly press the **Element Type button** to cycle through all the available choices. You can also use the Decimal Keypad to enter the choice number directly into the field.
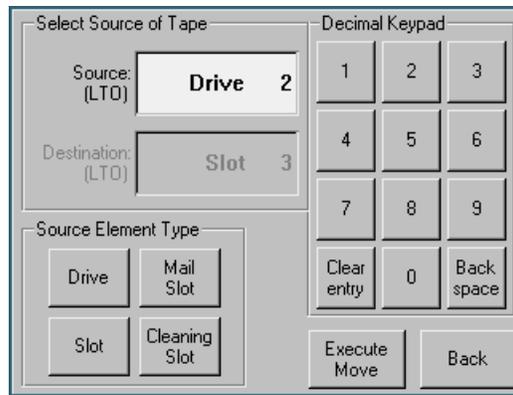
Figure 4-4: Move Media Screen

6. Press in the Source field, select **Mail Slot** as the Source Element Type, and select the slot number where it is located.

7. Press in the Destination field, select a location for the tape being added as the **Destination Element Type**, and select the destination slot number.

8. Press **Execute Move.**

   Wait for the tape to be moved. You are automatically returned to the Default menu when done.

9. Repeat Steps 5–8 until all tapes are moved from the Mail Slot.

Removing Media

Follow these steps to remove tape cartridges:

NOTE: You can also remove 10 cartridges at a time using the Load/Unload Fixed Slots button. See "Load/Unload Fixed Slots Button" on page 5-17 for more details.

1. At the front panel, press **Move Media**.

2. Press in the Source field, select the location of the tape being removed as the **Source Element Type**, and select the slot number where it is located.

3. Press in the Destination field, select **Mail Slot** as the Destination Element Type, and select the destination slot number.

4. Press **Execute Move.**

   Wait for the tape to be moved. You are automatically returned to the Default menu when done.

5. Repeat Steps 1–4 until all tapes are in the Mail Slot or it is full.

6. Press **Mail Slot Access**.

7. When you hear the latch release, take out the Mail Slot magazine and remove the applicable tapes from the magazine.

8. Reinsert the **Mail Slot magazine** into the library.

9. Press the **Mail 1-*nn*** button to relatch it, and then press **Back**.

Using Media Drawers for Bulk Exchanges

There are six media drawers in the NEO 8000e library. Each drawer holds up to 80 LTO cartridges. The first slot is located at the bottom front of the drawer and the last slot is at the top back (Figure 4-5).

NOTE: Depending on the library's configuration, some drawers may not be enabled.
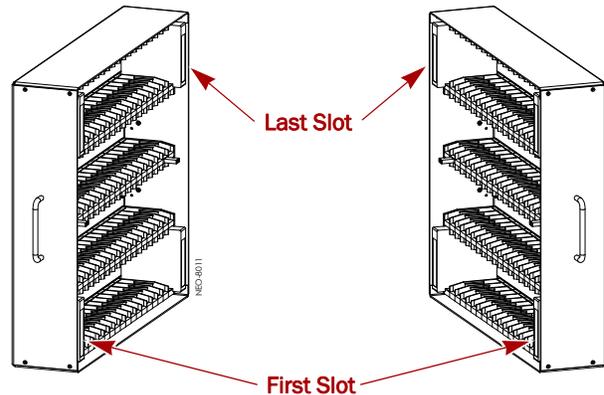
Figure 4-5: NEO 8000e Left and Right Media Drawers

If you need to add or remove a large number of tape cartridges, it is usually easier to stop the library and open the media drawers.

1. Press **Drawer Access**.

   This takes the library offline. Wait for the robotics to come to a complete stop.

2. Press either a **specific drawer button** or **Unlock All**.

3. Open the **Media Access Doors**.

4. Load or unload a **drawer**.

   a. Pull an unlatched **drawer** outward until it stops.

   b. Add or remove the **media**.

   c. Slide the **drawer** all the way back into the library.

5. Repeat Step 4 for any remaining drawers.

6. Close the **Media Access Doors**.

7. Press either the same **specific drawer button** or **Lock All**.
   The library comes back online.

8. Press **Back** to update the library and return to the Default screen.

Moving Media Inside the Library

The Move Media command provides the means to move cartridges around the library without physically touching them.

Standalone

1. At the front panel, press **Move Media**.

2. Press the Source field, select the location of the tape being moved as the **Source Element Type**, and enter its number.

3. Press the Destination field, select a destination for the tape as the **Destination Element Type**, and enter the destination number.

4. Press **Execute Move.**

   Wait for the tape to be moved. You are automatically returned to the Default menu when done.

Master/Slave with Horizontal Robotics Assembly

By adding a second NEO 8000e, the available capacity and number of drives can be doubled.

➡ **IMPORTANT:** See the *NEO 8000e Scalability Upgrade Installation Instructions* for more details.

Moving media back and forth between Master and Slave units using the PassThru Horizontal Robotics Assembly (HRA) is the same as with a Standalone library. The move is executed at the Master touchscreen. The libraries are differentiated by the slot and drive numbering.

NOTE: Because all Master drawers must be enabled before any Slave drawers can be activated, the Slave unit slot numbering always starts with 501 for LTO. However, drives are numbered sequentially with Master first and Slave next.

Element numbering can be checked using the Status button. With a Master/Slave system, a new drop-down option is visible in the upper right corner (Figure 4-6). Choose either Master or Slave to view the appropriate information.
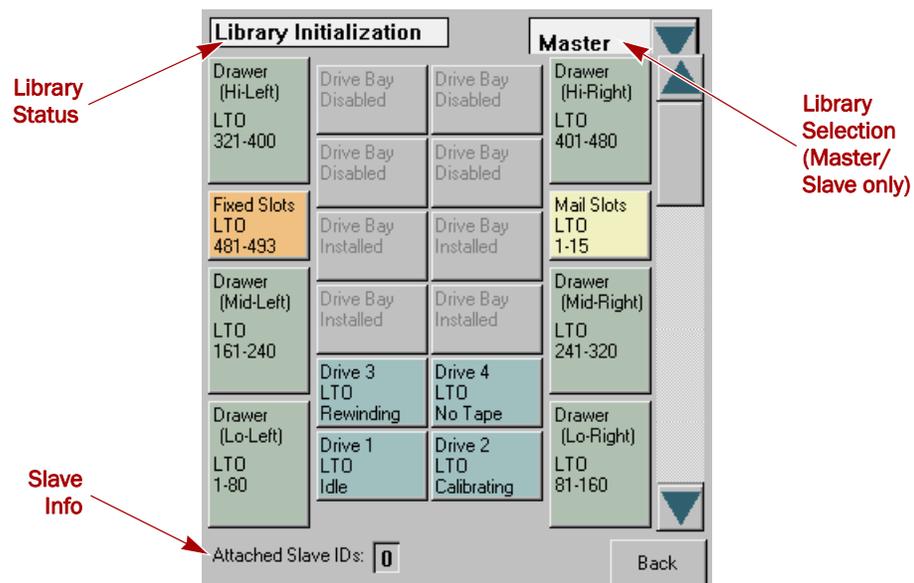
Figure 4-6: Master/Slave Status (Library Information) Screen

NOTE: The Fixed Slots button appears orange with Reserved Slots are configured.

Tape Drive Cleaning

⚠ **CAUTION:** Only perform a Clean Drive option when the library displays a message informing you that a drive needs cleaning. Because a cleaning cartridge is abrasive, excessive cleaning can shorten the life of a drive.

While most backup software can manage the automatic cleaning of library tape drives as a normal part of operations, it is recommended to use either the Manual or Automatic NEO 8000e tape drive cleaning option. The NEO 8000e options are based on actual need rather a time period resulting in less wear on the drives.

There are two ways to manage the cleaning of the installed tape drives:

- Automatically, by enabling Auto Clean Mode available under **Menu > Library Options**.
- Manually, by selecting the Clean Drive option located under **Menu > Maintenance**.

NOTE: With the exception of Clean Drive, Load/Unload Fixed Slots, and Configure Capacity, the Maintenance option is designed for use by Overland Authorized Service Technicians and is not recommended for access by end users.

Automatically Running a Cleaning Cartridge

You can configure the library to automatically run the cleaning cartridge mode. If a tape drive needs cleaning, after it completes an unload operation, it sends a cleaning needed message to the library. This activates the automatic cleaning cycle provided a cleaning cartridge slot has been reserved with a cleaning tape in it.

To automatically run a cleaning cartridge using Auto Clean Mode:

1. Reserve one or more cleaning cartridge slots using **Menu > Library > Total Reserved Slots**.
2. Install a **cleaning cartridge** into a reserved slot.
3. Enable automatic cleaning using **Menu > Library > Auto Clean Mode > Enabled**.

Manually Running a Cleaning Cartridge

If using Manual cleaning, when a drive requests it, a cleaning cartridge can be installed and run from one of three locations:

- **Mail Slot** – This location has the advantage of not needing to use a data cartridge slot or to reserve a cleaning cartridge slot.
- **Data Cartridge Slot** – This location requires inserting a cleaning cartridge into a data cartridge slot and then removing it after cleaning.
- **Cleaning Slot** – This location requires reserving some of the Fixed Slots for exclusive use as cleaning cartridge slots. The advantage with this method is that the cleaning cartridge is stored in the library and is always available for use. It only needs to be handled when the cartridge needs to be replaced. See Total Reserved Slots in Table 5-4, "Editable Library Options," on page 5-25 for more information.

NOTE: When selecting the Source or Cleaning locations, you can repeatedly press the **Element Type button** to cycle through all the available choices. You can also use the Decimal Keypad to enter the choice number directly into the field.

Running a Cleaning Cartridge from the Mail Slot

1. Install a **cleaning cartridge** into the Mail Slot magazine.

2. From the front panel, select **Menu > Maintenance > Clean Drive**.

3. Press the **Source** field and select **Mail Slot** as the Source Element Type.

4. Select the **Cleaning** field and press **Drive** in the Destination Element Type box.

5. Press **Execute Clean**.

    When the cleaning cycle completes, the library returns the cleaning cartridge back to the Mail Slot magazine and the display returns to the Maintenance options screen.

6. Press **Back** twice to return to the Default screen.

7. Use the **Mail Slot Access** option to remove the cleaning cartridge.

Running a Cleaning Cartridge from a Data Cartridge Slot

1. Install a **cleaning cartridge** into a data cartridge slot (Slot 1, for example) using the Drawer Access option.

2. From the front panel, select **Menu > Maintenance > Clean Drive**.

3. Press the **Source** field and select **Slot** as the Source Element Type.

4. Select the **Cleaning** field and press **Drive** in the Destination Element Type box.

5. Press **Execute Clean**.

    When the cleaning cycle completes, the library returns the cleaning cartridge back to the designated slot and the display returns to the Maintenance options screen.

6. Press **Back** twice to return to the Default screen.

7. Use the **Drawer Access** option to remove the cleaning cartridge.

Running a Cleaning Cartridge from the Cleaning Slot

1. Reserve one or more cleaning cartridge slots using **Menu > Library > Total Reserved Slots**.

2. Install a **cleaning cartridge** into a reserved slot.

3. From the front panel, select **Menu > Maintenance > Clean Drive**.

4. Press the **Source** field and select **Cleaning Slot** as the Source Element Type.

5. Select the **Cleaning** field and press **Drive** in the Destination Element Type box.

6. Press **Execute Clean**.

    When the cleaning cycle completes, the library returns the cleaning cartridge back to the designated cleaning slot and the display returns to the Maintenance options screen.

7. Press **Back** twice to return to the Default screen.

Replacing a Cleaning Cartridge in a Reserved Slot

When a tape drive detects an expired cleaning cartridge, a message appears on the front panel display. It is then necessary to replace the cleaning cartridge.

1. Use the Status screen to verify that the **cleaning cartridge** has been unloaded from the tape drive.

    If necessary, unload it using the Move Media menu option.

2. Move the expired cartridge to the **Mail Slot**.

3. Select **Mail Slot Access**.

4. Remove the **Mail Slot magazine** from the library.

5. Remove the expired cartridge, **mark it "EXPIRED,"** and then properly dispose of it.

6. Place a **new cleaning cartridge** in the Mail Slot magazine.

7. Insert the **Mail Slot magazine** back into the library.

8. If the cleaning cartridge did not reside in the Mail Slot magazine, use **Move Media** to move it to its proper place.

9. Press **Back twice** to return to the Default screen.

Using the Front Panel Interface

The touchscreen on the front of the NEO 8000e library (Figure 5-1) provides an easy way to directly communicate with the library by using its graphical user interface.
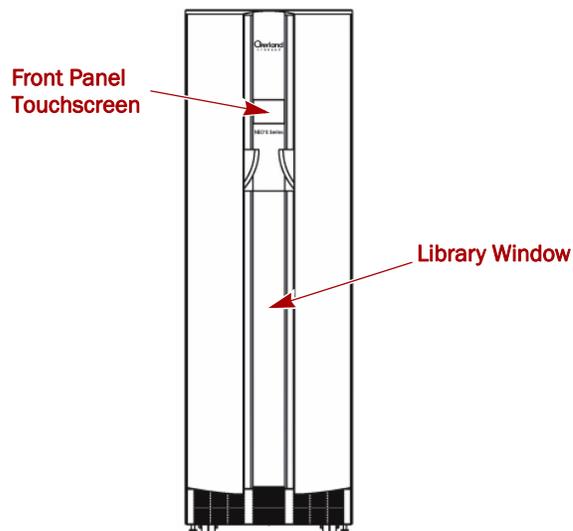
Figure 5-1: Touchscreen Location

By gently pressing the virtual buttons, you can select menus and options to view or change library settings.

> NOTE: Refer to Chapter 6, "Accessing the Library Remotely," or Chapter 8, "Partitioning," for other ways to communicate and configure the library.

You may find that the front panel touchscreen needs to be calibrated for accurate touch response. For recalibration information, see "Calibrating the Touchscreen" on page 5-22.

Overview

The touchscreen is a 4.5" x 3.5" (11.4 x 8.9 cm) pressure-sensitive color screen. It provides text and graphic messages and, through the use of virtual buttons and sliders, allows users to make changes to current library settings.

Some features are comprised of multiple screens. To move between these screens, use the up (▲) or down (▼) arrows. The Back button returns you to the first screen at the previous level.

For most applications, there is no need to change the factory default settings. However, if changes are needed, use the instructions provided in the following sections. If you are uncertain whether you need to change a setting, contact your authorized service provider.

Default screen

The Default screen appears 50 seconds after POST diagnostics begins or when the Continue button is pressed (Figure 5-2).

Figure 5-2: Library Front Panel Default Screen

NOTE: Though visible, this screen is not fully functional until POST completes. During POST, you can only access the Network Options and Library Info sub-functions in the View System Data area.

From this screen you can access all options, functions, informational screens, and screen contrast adjustments of the NEO 8000e. You can also initiate a controlled shutdown of the library.

Host Lock Out

Media can be locked by software running on the host. The library provides no front panel override for this command. Usually, exiting the host software restores media access.

NOTE: In the event of host failure, you can restore media access by cycling the library power.

Additional Menu Items for Partitions

When a NEO 8000e library is partitioned, additional items appear in several front panel menus to help manage those partitions. Refer to Chapter 8, "Partitioning," for more details.

Password Protection

To avoid accidental interruption of library operation, the NEO 8000e lets you assign up to three "levels" of security using passwords. A fourth level of security is built-in for factory technicians. This table shows the different levels and their access:

Table 5-1: User Security Levels

Security Level	Access Description
User Level 1	Controls access to the Mail Slot Access button.
User Level 2	Controls access to the Power, Online/Offline, Drawer Access, and Move Media buttons.
Service (Level 3)	Controls access to the Utilities and Edit Options area buttons.
Factory (Level 4)	No customer use.

> **NOTE:** Each "level" controls only specific buttons. For example, adding a Level 1 password does NOT protect Level 2 or 3 option buttons. However, higher levels allow access to lower levels, such as Level 2 can access the Mail Slot.

The passwords for Levels 1–3 are managed using the Passwords button in the Edit Options area of the front panel Menu. Once enabled, you are always prompted for a password whenever its associated buttons are pressed. This is especially true when trying to access or move media.

When you return to the Default screen, all password access is cleared and you must reenter the password for new access. Passwords can also be validated by using the Security Level button in the Utilities area.

For more information, see "Editing Passwords" on page 5-32.

Default Front Panel Options

The Default menu screen consists of 10 buttons surrounding a logo screen. The buttons provide links to the other key functions of the library (Table 5-2):

Table 5-2: Options Available from the Default Screen

Virtual Button	Result
Menu	Shows the Menu screen.
Online / Offline	Switches the library between online and offline.
Status	Displays the Library Status screen.
Power	Starts a controlled power down process.
Mail Slot Access	Takes you to the Mail Slot Access screen.
Drawer Access	Shows the Drawer Access screen.
Move Media	Takes you to the Move Media screen.
"O" Logo	Displays the Technical Support screen.
Up & Down Arrows	Adjusts the contrast of the screen.

Accessing the Menu Screen

When you press **Menu** from the Default screen, the Menu screen is displayed (Figure 5-3). The Menu screen provides access to most of the library's functions.
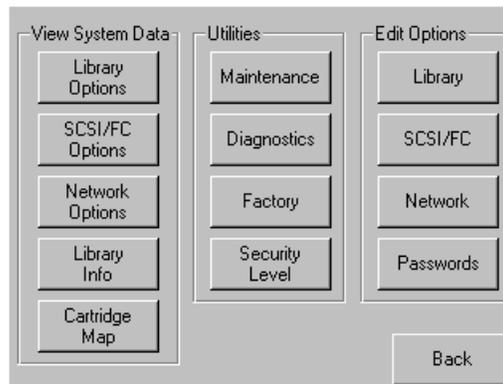
Figure 5-3: Menu Screen

Refer to "Default Front Panel Options" on page 5-3 for complete details for all the options shown on the screen.

Setting the Library to Online or Offline

Pressing the **Online/Offline** button switches the library between online and offline status. The button name displays the current status of the library. It can be password protected using User Level 2.

NOTE: By default, the library automatically is brought **online** after powering it up.

When offline, the tape drives continue to function and record without interruption. However, any attempt to operate the robotics results in a "Not Ready" message sent to the host.

Viewing Library Status Information

Selecting the **Status** option from the Default screen displays the library Status screen (Figure 5-4).
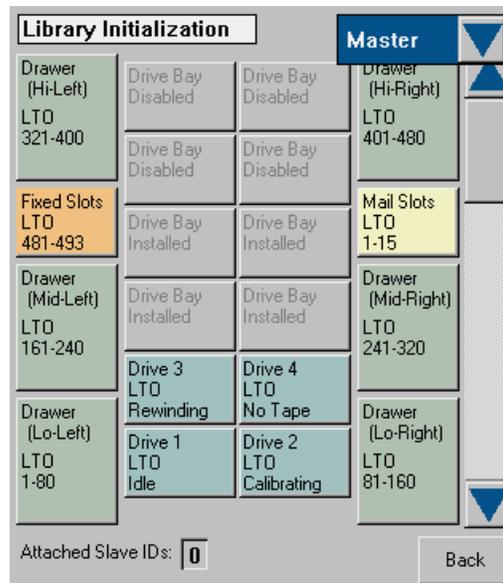
Figure 5-4: NEO 8000e Status Screen (Complete)

The Status screen displays buttons to access tape drive and media information. These buttons show some of the following information:

- (Tape) Drive buttons
  - Active drives
  - Drive type
  - Physical drive status
- Fixed Slots, Mail Slots, and (Media) Drawer buttons
  - Configuration
  - Cartridges loaded

If the library is partitioned, the partition numbers show in the upper-right corner of the drive and drawer buttons (Figure 5-5).
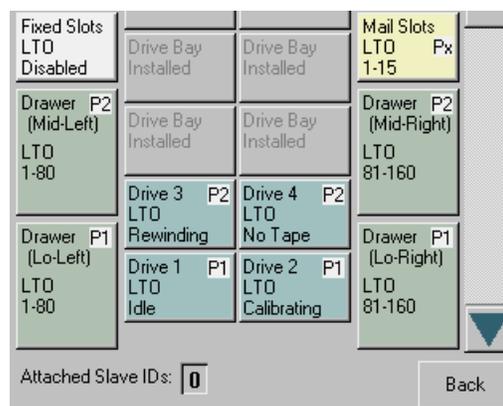
Figure 5-5: Partitioned NEO 8000e Status Screen

Pressing the appropriate button displays a detailed status screen. For the media drawer secondary screens, press a media row to see greater detail (Figure 5-6).
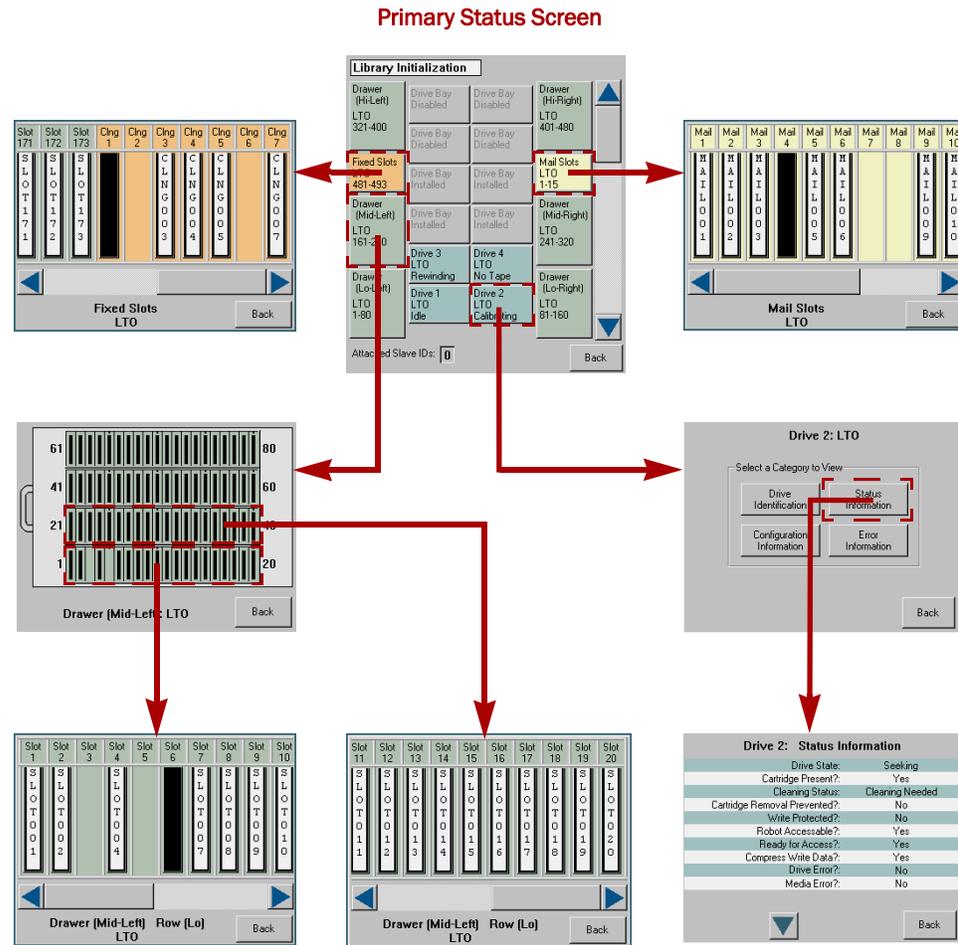
Figure 5-6: Status Screen Different Levels Example

If the library is partitioned, the partition number is shown on each screen. Because the Fixed Slots are used as Mail Slots under partitioning, when that button is pressed, a message is displayed on that change.

If Fixed Slots are configured with Reserved Slots, the button is shown orange.

Using the Touchscreen Power Button

The Power button initiates a controlled power-down sequence that provides enough time to park the robotics assembly and shuttle. During the process, you are prompted to either confirm or cancel the shut down (Figure 5-7). It can be password protected using Security Level 2.
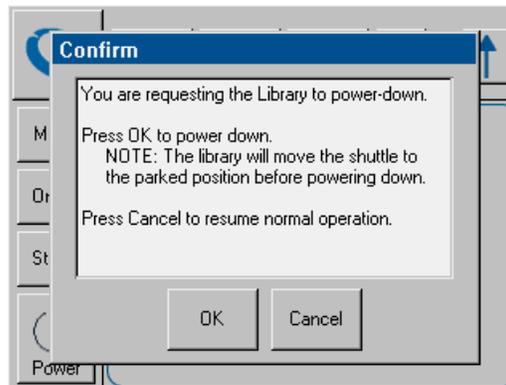
Figure 5-7: Power Down Confirmation Dialog Box

Accessing the Mail Slot

Pressing the Mail Slot Access button (Figure 5-8) displays a screen that lets you gain access to the Mail Slot without taking the library offline. It can be password protected using Security Level 1.

> **NOTE:** If the library is partitioned, a partition selection options is displayed before the access option screen.
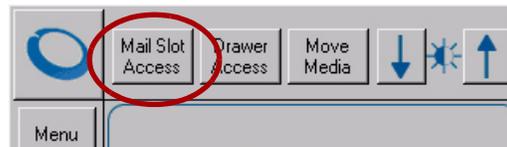
Figure 5-8: NEO 8000e Default Screen Top Buttons - Mail Slot Access

The Mail Slot is automatically unlatched when this screen (Figure 5-9) is accessed. The screen icon shows the slot unlocked and the Back button is disabled. Reinserting the Mail Slot displays a message that the Mail Slot is being inventoried. When the inventory is complete, the lock button is reactivated. Pressing the button manually relatches the Mail Slot and activates the Back button.

The Back button returns you to the Default screen. It is disabled whenever the Mail Slot is unlocked.
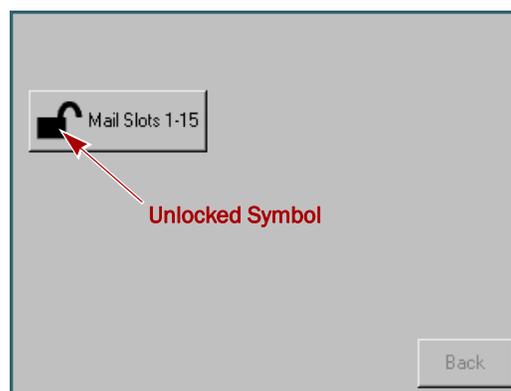
Figure 5-9: Mail Slot Access Screen

Accessing Drawers

⚠ **WARNING:** To prevent injury due to the weight of a loaded drawer, DO NOT fully remove the media drawers.

⚠ **AVERTISSEMENT:** Pour éviter toute blessure due au poids d'un tiroir chargé, NE PAS retirer complètement les tiroirs des médias.

⚠ **CAUTION:** If you press Drawer Access, the library is automatically and immediately taken **offline**. Once the action is completed, the library automatically goes back online.

Pressing the Drawer Access button (Figure 5-10) displays a screen that lets you deactivate the solenoids that secure each drawer so they can be opened. It can be password protected using Security Level 2.

NOTE: If the library is partitioned, a partition selection options is displayed before the access option screen.
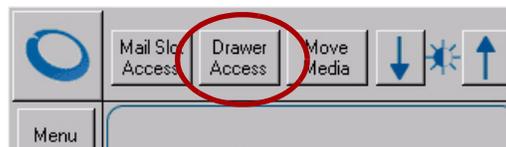
Figure 5-10: NEO 8000e Default Screen Top Buttons - Drawer Access

Access is gained by pressing either a specific drawer button or the Unlock All Drawers option (Figure 5-11). To relock the drawers, either press the specific drawer button again or the Relock All Drawers option.
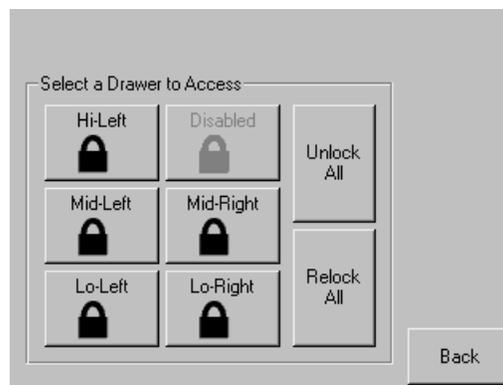
Figure 5-11: Drawer Access Screen (Only 5 Drawers Activated)

Disabled drawers are grayed-out and inaccessible. Refer to Chapter 10, "Component and Capacity Additions," for information about enabling these drawers.

The Back button returns you to the Default screen. It is disabled as long as any drawer is unlocked.

Moving Media

> ⚠ **CAUTION:** If you press Move Media, the library is automatically and immediately taken **offline**. Once the action is completed, the library automatically goes back online.

The Move Media button in the Library's front panel provides the means to move cartridges from one location to another inside the library without physically touching them:

1. At the Default screen, press **Move Media** (Figure 5-12).
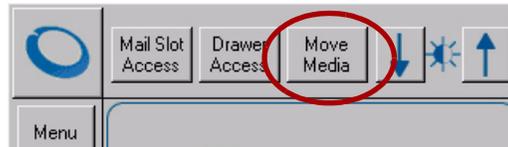
Figure 5-12: NEO 8000e Default Screen Top Buttons - Move Media

> **NOTE:** If a User Level 2 password is enabled, the validate password screen is displayed. Enter the correct password and press Validate.

2. If the library is partitioned, you are prompted to select the partition for the move operation (Figure 5-13) (P1, P2, etc.), then press **OK**.
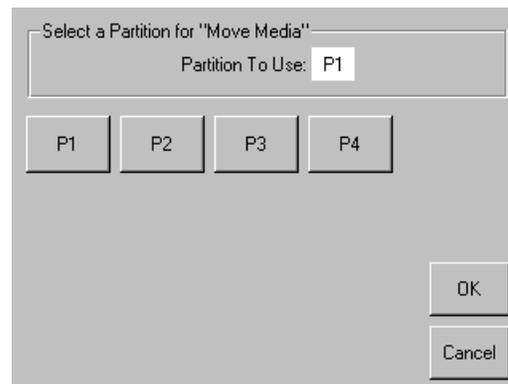
Figure 5-13: Select Partition for the Move Operation

3. Use the Move Media dialog box ([Figure 5-14](#)) to select the Source and Destination:
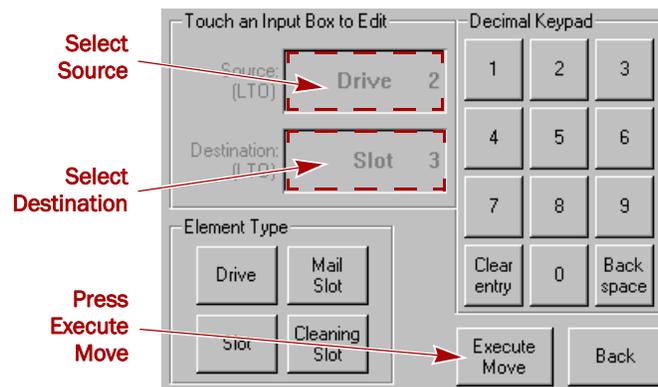
Figure 5-14: Move Media Dialog Box

NOTE: You can cancel the move operation at any time by pressing the **Back** button (which returns you to the Default screen). If a slot number is grayed out, that slot is not available. Clear your entry and enter a different slot number.

a. Touch the **Source** input box to activate it.

b. Select the Source Element Type (**Drive**, **Slot**, **Mail Slot**, or **Cleaning Slot**) by pressing the appropriate button on the lower left.

NOTE: The Cleaning Slot button is displayed only when one or more Reserved slots have been configured for the library.

c. Enter the Source **element number** using the decimal keypad.

You can also repeatedly press the appropriate Source Element Type button to cycle through all possible options (slots or drives with a tape in them).

NOTE: If you use the keypad to enter a slot number and the number is shown grayed out, that slot is not available. Clear your entry and enter a different number.

d. Touch the **Destination** input box to activate it.

e. Select the **Destination Element Type** by pressing the appropriate button.

f. Enter the Destination **element number** using the decimal keypad.

You can also repeatedly press the appropriate Destination Element Type button to cycle through all possible options (empty slots or drives).

4. Press **Execute Move.**

The tape cartridge is moved to the specified location. You are automatically returned to the Default screen when the operation is done.

Contacting Technical Support

Pressing the Overland logo in the top left corner of the Default screen displays Overland-specific technical support information (Figure 5-15).

Figure 5-15: Technical Support Screen

If you are having difficulty contacting your local service provider, contact Overland Storage directly. For further assistance, you can also access Overland's web site at http://www.overlandstorage.com.

Adjusting the Contrast of the TouchScreen

If the contrast of the NEO library's touchscreen display is not optimal for visibility, you can adjust the screen contrast temporarily. Pressing the up arrow and down arrow in the upper right corner of the Default screen *temporarily* increases or decreases the contrast of the LCD display. There are 31 incremental steps of contrast to choose from.

Down   Up
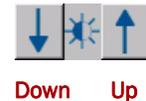
To change the setting on a permanent basis, go to **Menu > Library > LCD Contrast Adjust** (see "LCD Contrast Adjust" on page 5-25).

Front Panel Menu Screen Options

Selecting **Menu** from the Default screen displays the main Menu screen of the top-level features that let you view, configure, and edit various library settings and configurations (Figure 5-16).

> **IMPORTANT:** The buttons in the center Utilities section are intended for use by Overland-Authorized Service Technicians and, with a few exceptions, are not recommended for access by end users.
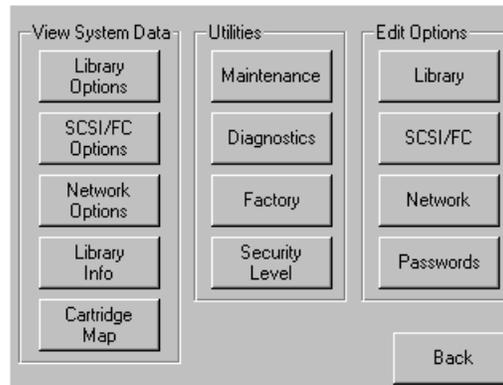
Figure 5-16: Menu Screen

> ⚠ **CAUTION:** If you press Diagnostics, Factory, or any of the Edit Options buttons, the library is automatically and immediately taken **offline**. Once the action is completed, the library automatically goes back online.

The Menu screen is divided into three vertical sections:

- View System Data – Library Options, SCSI/FC Options, Network Options, Library Info, and Cartridge Map
- Utilities – Maintenance, Diagnostics, Factory (access), and Security Level for authorized service technicians
- Edit Options – Library, SCSI/FC, Network, and Passwords

Pressing the **Back** button returns you to the Default screen.

Viewing Library Options

The Library Options button (in the View System Data section) provides read-only access to the library settings. Press **Menu** > **Library Options** (Figure 5-17).
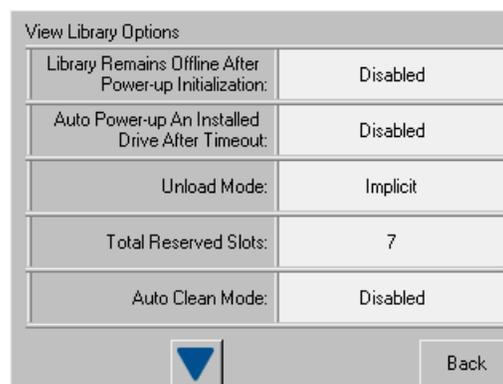
Figure 5-17: View Library Options Initial Screen

Use the ▲ or ▼ arrows to shift between multiple option screens. No modifications can be made on these screens. Refer to "Editing the Library Options" on page 5-24 for information on changing these settings.

Viewing Host I/F Options

NOTE: The options displayed vary based on the type of drives installed in the library. Because SAS drives have no customer adjustable settings, they are grayed-out.

You can use the SCSI/FC Options button (in the View System Data section) to provide read-only access to the SCSI or Fibre Channel host interface settings.

To view the drive settings, go to **Menu** > **SCSI/FC Options** (Figure 5-18). If the library is partitioned, the partition number is also shown.
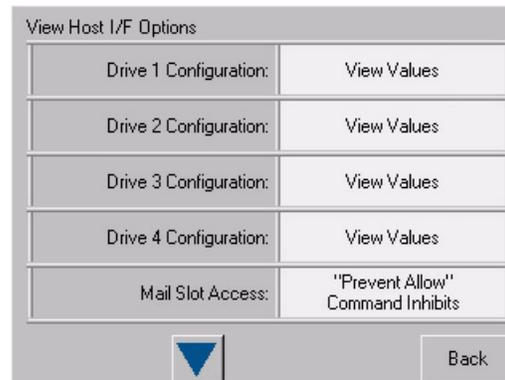
Figure 5-18: View Host I/F Options Initial Screen (FC Drives Installed)

Use the ▲ or ▼ arrows to move between screens. For libraries with Fibre Channel drives, pressing the View Values field for a particular drive displays a second set of data screens.

No modifications can be made on these screens. Refer to "Modifying the Host I/F Options" on page 5-27 for information on changing these settings.

Viewing Network Options

The Network Options button (in the View System Data section) provides read-only access to the network settings. To view the library's network settings, press **Menu** > **Network Options** (Figure 5-19).

The network options consists of three screens of information showing 11 options.
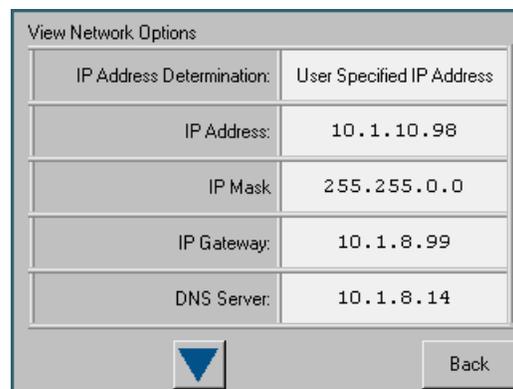
Figure 5-19: View Network Options Initial Screen

Use the ▲ or ▼ arrows to shift between screens. No modifications can be made on these screens. Refer to "Editing the Network Options" on page 5-30 for information on changing these settings.

Viewing Library Info

The Library Info (Information) button (in the View System Data section) provides read-only access to the general information about the NEO 8000e library.

To view the library information, go to **Menu** > **Library Info** (Figure 5-20).
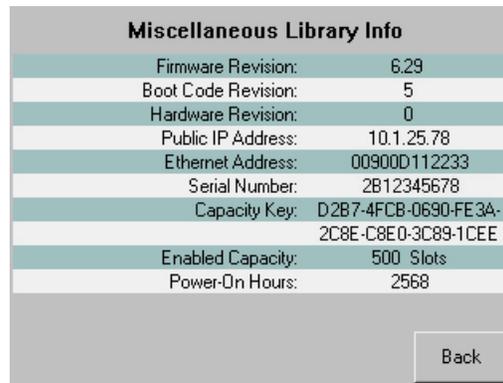
Miscellaneous Library Info

Firmware Revision:	6.29
Boot Code Revision:	5
Hardware Revision:	0
Public IP Address:	10.1.25.78
Ethernet Address:	00900D112233
Serial Number:	2B12345678
Capacity Key:	D2B7-4FCB-0690-FE3A-2C8E-C8E0-3C89-1CEE
Enabled Capacity:	500 Slots
Power-On Hours:	2568

Back

Figure 5-20: Library Info Screen

The Miscellaneous Library Info screen displays the following information:

- The library's firmware revision
- The current boot code revision
- The hardware code revision
- The library's current local IP address
- Ethernet address
- Library serial number
- Capacity key for activating the drawers
- Number of slots enabled by the capacity key
- Number of hours the library has been powered on.

No modifications can be made to the information on this screen.

Viewing Cartridge Map

The Cartridge Map (in the View System Data section) provides a visual indication of where cartridges are present in the library drives and cartridge slots. Drives are listed first, followed by Mail Slots, and then regular slots. Only slots reported to the host are shown. If available, the bar code label is shown for the cartridge (Figure 5-21).

To view the cartridge map, go to **Menu** > **Cartridge Map** (Figure 5-21). If the library is partitioned, the partition number is also shown.

Figure 5-21: Initial View Cartridge Map Screen

Use the ▲ or ▼ arrows to move between screens. The screens loop so you can go in either direction to quickly find a particular slot. No modifications can be made to the information displayed on these screens. Refer to "Moving Media" on page 5-9 for information on changing the location of a cartridge.

Accessing Maintenance Options

The Maintenance button (in the Utilities section) displays a menu of options that address the general library service functions (Figure 5-22). The number and type of options varies depending on the installed options and firmware version. Use the ▲ or ▼ arrows to move up and down one row of buttons.

IMPORTANT: The Maintenance option is intended for use by Overland Authorized Service Technicians and, with a few exceptions (refer to Table 5-3 on page 5-16), is not recommended for access by end users.

To access the Maintenance menu, go to **Menu** > **Maintenance**. The Maintenance Menu is displayed (Figure 5-22).
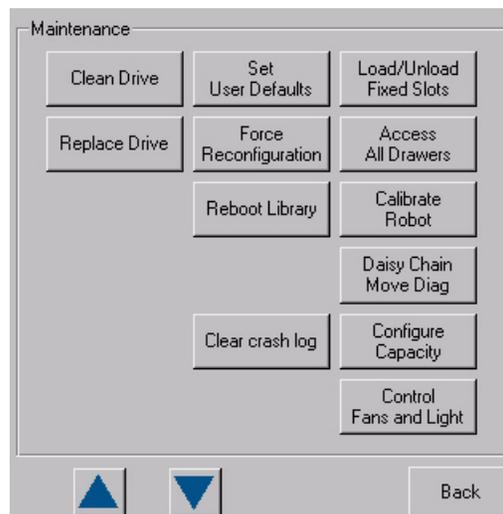
Figure 5-22: Maintenance Menu Screen (Complete)

⚠️ **CAUTION:** When you press any Maintenance button other than Replace Drive, the library is automatically and immediately taken offline. Once the action is completed, the library automatically goes back online. The Replace Drive feature allows the library to remain online while a drive is being replaced.

Table 5-3 describes the maintenance functions that can be accomplished using the Maintenance menu:

Table 5-3: Maintenance Menu Functions

Option	Description
Clean Drive	Using a screen similar to the Move Media screen (Figure 5-14 on page 5-10), selected drives can be cleaned.
Set User Defaults (*Service Only*)	Resets the user defaults to the factory default values stored in non-volatile memory. **NOTE:** The library immediately reboots upon completion. ⚠️ **CAUTION:** This clears ALL customer configured settings such as IP addresses.
Load/Unload Fixed Slots	Moves cartridges between the Fixed Slots and the Mail Slots. See "Load/Unload Fixed Slots Button" below. Disabled if library is partitioned.
Replace Drive (*Service Only*)	Presents a screen with buttons for each drive. Press a drive button to deactivate that drive for removal. If a tape is currently in the drive, you are prompted to move the tape to a different location.
Force Reconfiguration (*Service Only*)	Forces an immediate reconfiguration of the NEO 8000e library to the appropriate settings of Master, Slave, or Standalone. Used whenever a drive or library module is permanently removed. **NOTE:** NEO 8000e libraries automatically reconfigure themselves when a new drive or library module is added.
Access All Drawers	See "Accessing Drawers" on page 5-8 for details.
Reboot Library (*Service Only*)	Forces an immediate reboot of the NEO 8000e library.
Calibrate Robot (*Service Only*)	Runs a program to validate the robotics using touch (fiducial mark) calibration.
Daisy Chain Move Diag (*Service Only*)	Moves cartridges to test the alignment of every enabled slot: • For an empty drawer, insert two cartridges in the first two slots. The test alternately moves the front cartridge to the next empty slot until all slots are checked. • For a full drawer, be sure at least one slot is empty. The test moves each cartridge to the next empty slot until all slots are checked.

Table 5-3: Maintenance Menu Functions(Continued)

Option	Description
Clear Crash Log (*Service Only*)	The non-volatile crash log entries are set when the CPU detects a fatal execution error (such as "divide by 0" or page fault), to provide sufficient information to trace the error back to the offending line of code.
	⚠ CAUTION: Use this clear option only at the direction of an authorized service person.
Configure Capacity	By entering a purchased 32-digit code, disabled drawers and their slots are enabled for use. Contact Overland Storage for information about purchasing codes.
Control Fans and Light (*Service Only*)	Turns the backplane fans and internal light on and off. See "Control Fans and Light Button" below.

Load/Unload Fixed Slots Button. This option displays a menu screen (Figure 5-23) that moves 10 LTO cartridges back and forth between either the front or rear 10 slots of the Fixed Slots and the front 10 slots of the Mail Slot magazine. All 10 **destination** slots must be empty for this option to be used.
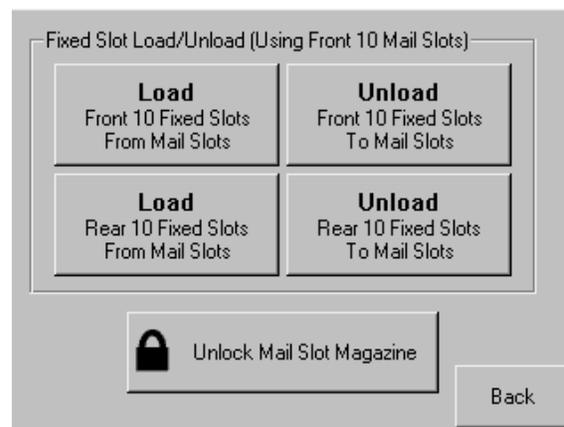
Figure 5-23: Load/Unload Fixed Slots Screen (Maintenance)

Control Fans and Light Button. This option displays a menu screen (Figure 5-24) that provides buttons to turn ON and OFF the primary backplane (BP) fan, secondary BP fan, and interior light. When pressed, the button changes to show that the opposite action is now available for that feature.
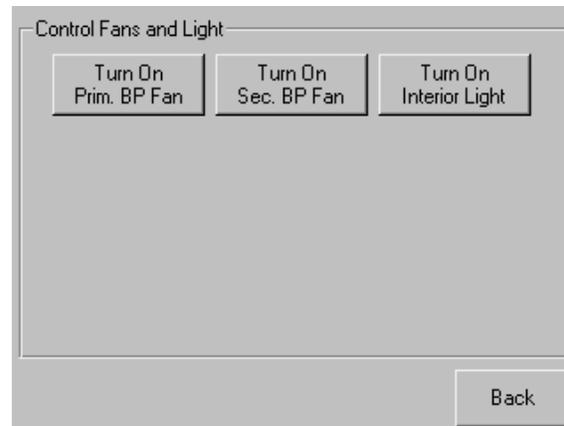
Figure 5-24: Control Fans and Light Screen (Maintenance)

The primary BP fan is the fan located above the primary card cage. The secondary BP fan is located above the secondary card cage.

Running Library Diagnostics

The NEO 8000e provides six user-accessible and three service-only diagnostics that calibrate and exercise the library. All six user diagnostics are available from the front panel by pressing the Diagnostics button (in the Utilities section).

> **IMPORTANT:** The Sensor Test, Tachometer Diagnostic, and Friction Diagnostic options are intended for Authorized Service Personnel only.

The Cartridge Cycle and Drive Cycle diagnostics are also available from the remote access, where they may be specified to run for a specific duration or indefinitely (for details, see "Perform a Timed or Free-Running Library Diagnostic" on page 6-33).

To access the diagnostics functions from the front panel, press **Menu >
Diagnostics**. The Diagnostics Menu screen is displayed (Figure 5-25).
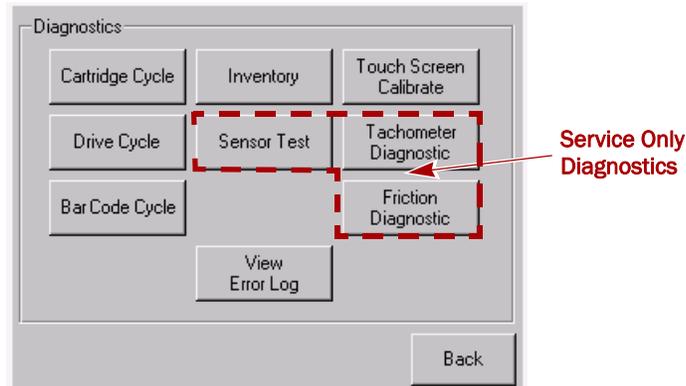
Figure 5-25: Diagnostics Menu Screen

NOTE: We recommend that you set a Service level password for the Diagnostics menu.
For instructions on setting passwords, see "Setting Passwords for Access to
Library Functions" on page 3-10.

Cartridge Cycle Diagnostic

The Cartridge Cycle diagnostic moves cartridges between drawer slots. Selection
of the source and destination slots is random to mimic the action of a typical
external application. The diagnostic reports the total number of bin swaps while
running.

To run the Cartridge Cycle diagnostic, follow these steps:

1. From the Default screen, press **Menu > Diagnostics**.

2. From the Diagnostics menu (as shown in Figure 5-25 on page 5-19), press
Cartridge Cycle.

The Cartridge Cycle screen is displayed (Figure 5-26).

Figure 5-26: Starting the Cartridge Cycle Diagnostic

3. Press **Start**.

The screen now indicates that the cartridge cycle diagnostic test is running (Figure 5-27). The diagnostic reports the total number of bin swaps while running. This diagnostic will continue to run until commanded to stop or a fault is detected.
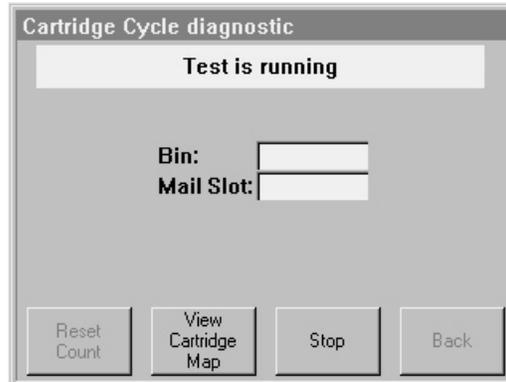
Figure 5-27: Running the Cartridge Cycle Diagnostic

4. When satisfied with the diagnostic, press **Stop**.

You receive the message, "Test has been stopped."

Drive Cycle Diagnostic

The Drive Cycle diagnostic also moves cartridges randomly between bins but inserts a drive stow or fetch operation after every 12th cartridge stow to a drawer. Accumulated slot cycles and drive cycles are reported to the touchscreen display.

Progress is also reported to the browser display if the diagnostic was initiated from that interface (for details, see "Perform a Timed or Free-Running Library Diagnostic" on page 6-33).

To run the Drive Cycle diagnostic, follow these steps:

1. From the Default screen, press **Menu** > **Diagnostics**.

2. From the Diagnostics menu (as shown in Figure 5-25 on page 5-19), press **Drive Cycle**.

The Drive Cycle screen is displayed (Figure 5-26).
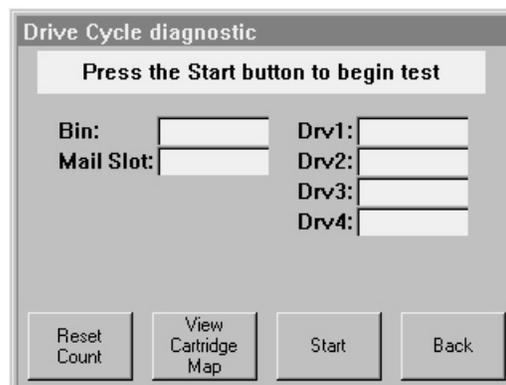
Figure 5-28: Starting the Drive Cycle Diagnostic

3. Press **Start**.

    The screen now indicates that the drive cycle diagnostic test is running. The diagnostic reports the total number of bin swaps and drive swaps while running. This diagnostic will continue to run until commanded to stop or a fault is detected.

4. When satisfied with the diagnostic, press **Stop**.

    You receive the message, "Test has been stopped."

Bar Code Cycle Diagnostic

The Bar Code Cycle diagnostic tests the accuracy and repeatability of the bar code scanner. It performs an initial inventory and records all bar codes present, associating them with specific slots. The diagnostic then re-inventories the library and compares the bar code for each slot to the reference inventory.

To run the Bar Code Cycle diagnostic, follow these steps:

1. From the Default screen, press **Menu** > **Diagnostics**.

2. From the Diagnostics menu (as shown in), press **Bar Code Cycle**.

    The Bar Code Cycle screen is displayed ().
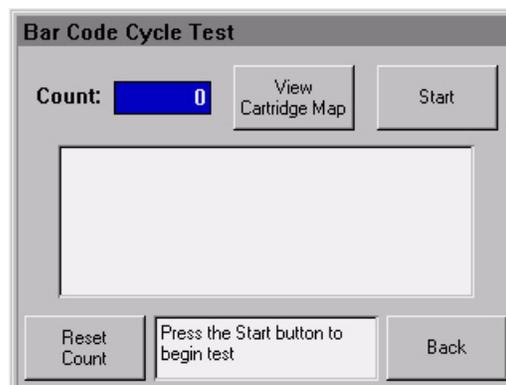
Figure 5-29: Starting the Bar Code Cycle Diagnostic

3. Press **Start**.

    The screen now indicates that the bar code cycle diagnostic test is running. The diagnostic reports the total number of inventory cycles while running. This diagnostic will continue to run until commanded to stop or a fault is detected.

4. When satisfied with the diagnostic, press **Stop**.

    You receive the message, "Test has been stopped."

Inventory Diagnostic

The Inventory diagnostic simply performs an inventory of all activated drawers and updates the cartridge map. The drives are not checked.

To run the Inventory diagnostic, follow these steps:

1. From the Default screen, press **Menu** > **Diagnostics**.

2. From the Diagnostics menu (as shown in Figure 5-25 on page 5-19), press **Inventory**.

   A normal inventory is performed and the databases are updated.

Viewing the Error Log

The View Error Log diagnostic does not perform any physical actions. This non-volatile error log is displayed, showing all the faults posted by the library since SRAM was last initialized.

To view the error log, follow these steps:

1. From the Default screen, press **Menu** > **Diagnostics**.

2. From the Diagnostics menu (Figure 5-25 on page 5-19), press **View Error Log**.

   The most recent error log entries are displayed (Figure 5-30).
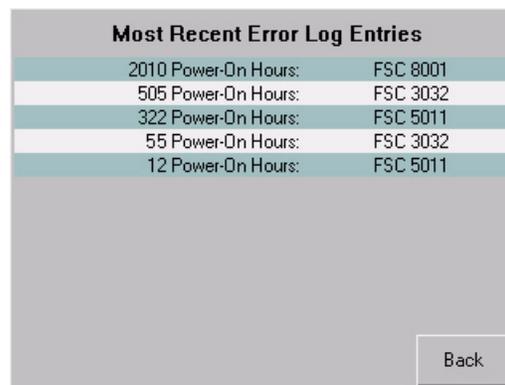
Most Recent Error Log Entries

2010 Power-On Hours:	FSC 8001
505 Power-On Hours:	FSC 3032
322 Power-On Hours:	FSC 5011
55 Power-On Hours:	FSC 3032
12 Power-On Hours:	FSC 5011

Back

Figure 5-30: Library Error Log

The error log lists the Fault Symptom Codes (FSCs) for each error. To identify the FSCs of interest, refer to "Fault Symptom Codes" on page 9-3.

Calibrating the Touchscreen

Touchscreen input devices are separate from the display screens that they overlay. As a result, there is no built-in relationship between the coordinates of a spot on the display screen and the coordinates sensed when someone touches directly over that spot. The software for the touchscreen interface must learn which spots on the touch sensor overlay which spots on the screen.

The library's touchscreen should be calibrated any time the touchscreen is not responding easily or when the touchscreen is serviced or the controller replaced.

To calibrate the touchscreen, follow these steps:

1. From the Default screen, press **Menu** > **Diagnostics**.

2. From the Diagnostics menu (as shown in Figure 5-25 on page 5-19), press **Touch Screen Calibrate**.

   The initial touchscreen calibration screen is displayed (Figure 5-31).
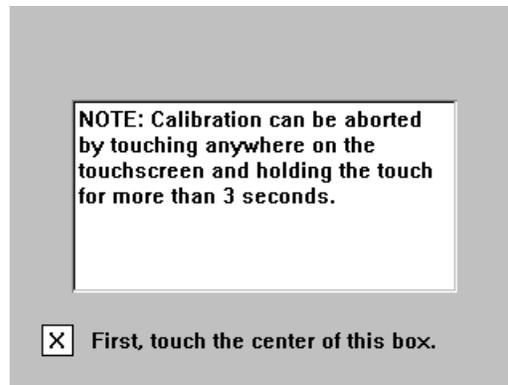
Figure 5-31: Initial Touchscreen Calibration Screen

3. Use a stylus or similar blunt instrument to gently touch the center of the box indicated in Figure 5-31.

The second touchscreen calibration screen is displayed (Figure 5-32).
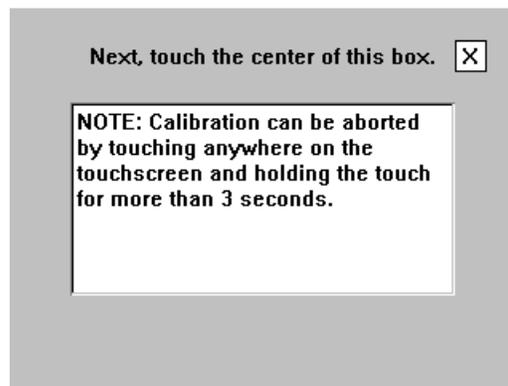
Figure 5-32: Second Touchscreen Calibration Screen

4. Use a stylus to gently touch the center of the box indicated in Figure 5-32.

The final touchscreen calibration screen is displayed (Figure 5-33).
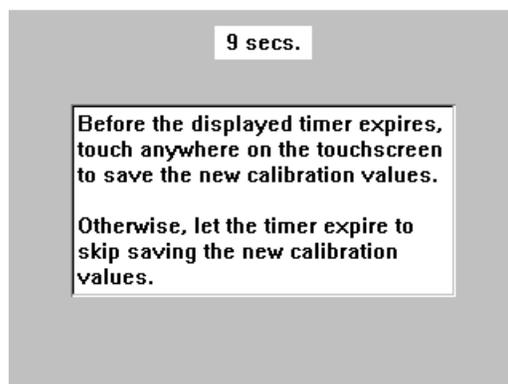
Figure 5-33: Final Touchscreen Calibration Screen

5. Before the timer expires (you have ten seconds), use the stylus to touch anywhere on the touchscreen to save the new touchscreen calibration values.

You receive the message, "Saving new calibration values," and then return to the Diagnostics menu. The library's touchscreen has now been calibrated and will now respond to touch easily and accurately.

Factory (Access) Option

> **IMPORTANT:** The Factory option (in the Utilities section) is intended for use by Overland Factory Technicians only and is not available for access by end users.

Security Level Option

> **IMPORTANT:** The Security Level option (in the Utilities section) is intended for use by Overland Factory Technicians only and is not available for access by end users.

Editing the Library Options

Press the **Library** button (in the Edit Options section) to edit the library's user options (Figure 5-34). Use the ▲ or ▼ arrows to move between screens.
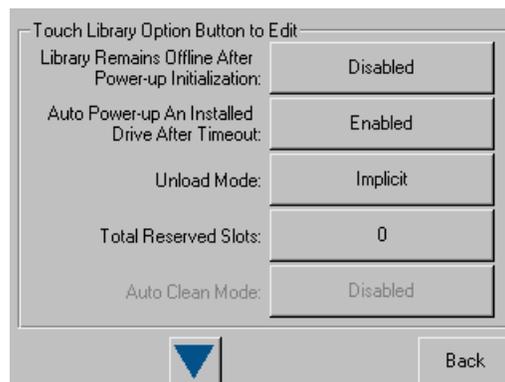
Figure 5-34: Library Edit Options Initial Screen

NOTE: The current library user settings can be viewed in a read-only format when you go to **Menu** > **Library Options.**

Table 5-4 shows the different editable library options available:

Table 5-4: Editable Library Options

Option	Description
Library Remains Offline After Power-up Initialization	Enable or disable whether the library remains offline after power-up initialization. If enabled, you must press the Online button on the Default screen to bring it online. **Default:** Disabled.
Auto Power-up An Installed Drive After Time-out	Enable or disable whether a tape drive automatically powers up after being replaced if it is not turned on manually. There is a short two-second delay before the automatic power up occurs. **Default:** Enabled
Unload Mode	Select either an implicit or explicit tape unload mode for a Move Media command from the host. If **Implicit** is selected, the library unloads a tape drive before attempting to move a cartridge from that drive. If **Explicit** is chosen, the host must issue an Unload command to a tape drive before each Move Medium command. **Default:** Implicit.
Total Reserved Slots	Reserve up to 20 Data slots that are located in the last active drawer. The slots are reserved from the last enabled slot to the end of the drawer. The reserved slots can be used to store cleaning cartridges and are labeled "Clng *n*" on the Status screens. **Default:** Ø
Auto Clean Mode	Enable or disable the automatic cleaning cycle driven by tape drive requests. NOTE: To use this option, you must have reserved one or more slots for a cleaning cartridge using the Total Reserved Slots option. **Default:** Disabled.
Drive and Slot Numbering	Specify whether elements in the library use either Zero-Based or One-Based numbering. This only affects the front panel and remote access displays, not the actual element addresses. For example, the first slot would be either Slot 0 (Zero-Based) or Slot 1 (One-Based). **Default:** One-Based
LCD Contrast Adjust	Permanently increase or decrease the contrast of the LCD display. The incremental steps range from 1 to 32. The Contrast controls on the Default screen only temporarily change the contrast of the display. **Default:** 16

Table 5-4: Editable Library Options(Continued)

Option	Description
Bar Code Label Size	Limit the maximum number of characters reported for the bar code label both to a host and on the Cartridge Map. Possible settings are 1 through 8. This is to accommodate software that requires that bar code labels be less than eight characters. It is used primarily for a Read Element Status command. **Default:** 8
Bar Code Label Alignment	Specify the alignment of a bar code label reported in the response to the Read Element Status command. The options are Left Align or Right Align. When used in conjunction with the label size option, this option strips unwanted trailing characters (left alignment) or leading characters (right alignment). **Default:** Left Align
Bar Code Label Check Digit	⚠ **CAUTION:** Standard bar code labels from Overland do not have a check digit. Enabling this option prevents those labels from being read. Enable or disable the verification of a check digit character in the bar code label. • For bar code labels *without* the check character, select **Disabled**. • For bar code labels *with* the check character, select either **Enable Check, Send** [the check character to the host] or **Enable Check, Don't Send** [the check character to the host]. If disabled and a bar code label with a check character is read, the check character is displayed as part of the bar code. If enabled and a bar code label with no check character is read, the library will indicate No Label Present. **Default:** Disabled
Bar Code Reader	Specify whether the bar code reader will retry reading bar code labels on individual cartridges. **Default:** Retries Enabled
Module Configuration	Specify the Library Module Configuration. Three options are available: • **Standalone** - Used when the library contains a single unit. • **Master** - Used to designate this library as the primary library which controls the XpressChannel® in a multiple module system. • **Slave** - Used to designate this library as a slave library in a multiple module system. **Default:** Standalone

Modifying the Host I/F Options

Press the **SCSI/FC** button (in the Edit Options section) to set or modify the host interface (SCSI or FC) settings for the Library. See Figure 5-35 and Table 5-5 on page 5-27 for the editable SCSI options. For FC configurations, also refer to Figure 5-36 and Table 5-6 on page 5-29 for additional FC options. Use the ▲ or ▼ arrows to move between screens.

NOTE: The options displayed vary based on the type of drives installed in the library. Because SAS drives have no customer adjustable settings, they are grayed-out. If the library is partitioned, the partition number is shown with the drive number.
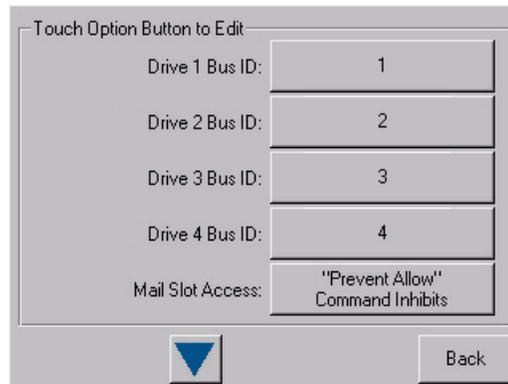
Figure 5-35: SCSI/FC Initial Edit Screen (SCSI Drives)

NOTE: The current library SCSI and FC settings can be viewed in a read-only format when you go to **Menu > SCSI/FC Options.**

Table 5-5 shows the editable SCSI, SAS, and FC options available:

Table 5-5: NEO Library SCSI/FC/SAS Editable Options

Option	Description
Drive *n* Bus ID *(SCSI configuration only)*	Lets you set the SCSI addresses of the drives. The default addresses are:
	Drive 1 = ID 1 Drive 2 = ID 2 Drive 3 = ID 3 Drive 4 = ID 4 Drive 5 = ID 8 Drive 6 = ID 9 Drive 7 = ID 10 Drive 8 = ID 11 Drive 9 = ID 12 Drive 10 = ID 13 Drive 11 = ID 14 Drive 12 = ID 15
	See Figure 1-12 on page 1-11 for a drive numbering diagram.
Drive *n* Configuration *(FC configuration only)*	Press **Set Values** to display additional screens of editable data for Fibre Channel drives.
	See Table 5-6, "NEO Library FC Editable Drive Options," for details.
Drive *n* Configuration *(SAS configuration only)*	Provides access to: • Enable/Disable the Port Control for the drive. • Set a Default or Custom Port ID. **Defaults:** Enable and Default.

Table 5-5: NEO Library SCSI/FC/SAS Editable Options (Continued)

Option	Description
Mail Slot Access	Specify if a host Prevent Allow Medium Removal command inhibits or allows an operator access to the Mail Slot. **Default:** "Prevent Allow" Command Inhibits.
Init Element Status	Specifies the library's response to the Initialize Element Status command. The possible settings are **No Inventory**, **Force Inventory**, and **Force Label Scan**. **Default:** No Inventory.
Product Identification	Specifies the response of the library's robotics to the Product ID field of the SCSI Inquiry command. The choices are NEO Series, LXB, or a custom ID (Vendor Unique). The ID must be exactly 16 characters long, so blanks are appended to the end of a shorter ID. **Default:** NEO Series (*+6 spaces*).
Vendor Identification	Specifies the response of the library's robotics to the Vendor ID field of the Inquiry command. The choices are OVERLAND or a custom ID (Vendor Unique). The ID must be exactly 8 characters long so blanks are appended to the end of a shorter ID. **Default:** OVERLAND.
Post Recovered Errors	Enable or disable the reporting of TapeAlert informational exception conditions with a Recovered Error sense key, when the Method of Reporting Information Exceptions (MRIE) field is set to a value of Øx3 in Mode Page 1Ch, or if the TapeAlert Mode option is set to Rec. Error (cnd). **Default:** Disabled.
TapeAlert Mode	Specifies conditions for logging and reporting the following TapeAlert data options: • **Logging Disabled –** Inhibits the logging feature. • **No Exceptions –** Information exceptions are not reported. • **Generate Unit Attention –** Reports information exceptions with a Unit Attention sense key and an ASC/ASCQ of 5D/ØØ. • **Conditionally Generate Recovered Error –** If Post Recovered Errors is enabled, reports information exceptions with a Recovered Error sense key and an ASC/ASCQ of 5D/ØØ. • **Unconditionally Generate Recovered Error –** Unconditionally reports information exceptions with a Recovered Error sense key and an ASC/ASCQ of 5D/ØØ. • **Generate No Sense –** Reports information exceptions with a No Sense sense key and an ASC/ASCQ of 5D/ØØ. • **Report on Unsolicited Request Sense –** Reports information exceptions with a No Sense sense key and an ASC/ASCQ of 5D/ØØ only in response to an unsolicited Request Sense command. **Default:** Logging Disabled.

Table 5-5: NEO Library SCSI/FC/SAS Editable Options (Continued)

Option	Description
Report Element Type	Determine the method to report the type of library elements installed using the Read Element Status command. The options are **Disabled** or **Enabled**.
	Select **Disabled** for the standard method that uses the DVCID CDB field. Select **Enabled** to use the vendor-specific field in the Element Descriptor.
	Default: Disabled.
Report Binary Device ID for Fibre Channel Drives	Enable or disable the reporting of the World Wide Node Name in the Device ID field of the Read Element Status Data Transfer Element Descriptor.
	When disabled, this option returns the ASCII descriptor (Vendor ID + Product ID + Serial Number).
	Default: Disabled.

For FC configured systems:
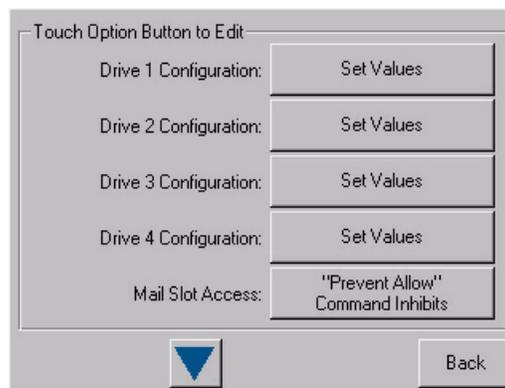
Figure 5-36: SCSI/FC Initial Edit Options Screen (FC Drives)

Pressing Set Values opens a new screen that lets you set the values for the options shown in Table 5-6.

Table 5-6: NEO Library FC Editable Drive Options

Definition	Option and Default Description
Port *n* Control	Specifies the method for setting the AL-PA. The settings are Disable, Soft Address, and Hard Address. When Hard Address is selected, the Port *n* ID button is enabled to select a valid Loop ID. Only one port at a time can be used.
	Default: Soft Address.
Port *n* Loop ID	Specifies the Loop ID that the tape drive uses to determine the AL-PA for Port *n*. The possible settings are 1-125.
	NOTE: This option requires Hard Address to be selected in the Port *n* Control option.
	Default: 1.

Table 5-6: NEO Library FC Editable Drive Options(Continued)

Definition	Option and Default Description
World Wide Port *n* Name	Select either a Default or Custom WWPN. The Default setting uses the factory-configured WWPN while Custom allows you to create a unique name for Port *n*. **Default:** Default.
World Wide Node Name	Select either a Default or Custom WWNN. The Default setting uses the factory-configured WWNN while Custom allows you to create a unique name for the device. **Default:** Default.
Topology	Specifies the topology used by the Fibre Channel ports. The four options are Use Loop, Allow Point-to-Point; Use Point-to-Point, Allow Loop; Force Loop; or Force Point-to-Point. **Default:** Use Loop, Allow Point-to-Point.
Speed	Sets the link speed in gigabits used by the Fibre Channel ports. The options are **Auto, 1 Gb/sec., 2 Gb/sec., 4 Gb/sec.,** or **8 Gb/sec.** (depending on the drives installed). In Auto mode, the drive negotiates the speed with the host. **Default:** Auto.

Editing the Network Options

The **Network** button (in the Edit Options section) is used to set or modify the library's network settings (Figure 5-37). Use the ▲ or ▼ arrows to move between screens.

Figure 5-37: Network Edit Options Initial Screen

NOTE: The current library network settings can be viewed in a read-only format when you go to **Menu** > **Network Options.**

Table 5-7 shows the editable network options that are available:

Table 5-7: Network Editable Options

Option	Description
IP Address Determination	Select the method for setting the IP address of the library's embedded remote access utility/protected Internet site. The settings are **Obtain IP Address From a DHCP Server** or **User Specified IP Address**. **Default:** Obtain IP Address From a DHCP Server.
IP Address*	Enter a valid IP address for the remote access using the numeric keypad. **Default:** 255.255.255.255
IP Mask*	Enter a valid Subnet Mask address for the remote access using the numeric keypad. **Default:** 255.255.Ø.Ø.
IP Gateway*	Enter a valid Gateway IP address for the remote access using the numeric keypad. **Default:** 255.255.255.255.
DNS Server*	Enter a valid DNS server address using the numeric keypad. Default: 255.255.255.255.
Web Level 1 and FTP Login	Enter up to 15 alphanumeric characters as a password for Level 1 access via the remote access. **Default:** 1.
Web Level 2 Login	Enter up to 15 alphanumeric characters as a password for Level 2 access via the remote access. **Default:** 2.
Enable Web Secure Login	Select to encrypt the password entered at the remote access login screen. The options are Yes or No. Select Yes when the Java Console is enabled; otherwise, select No. **Default:** Yes.
Disable Web Level 2 Access	Lets you control the level of access that users have to the remote access. The options are Yes or No. • **Yes** – allows only **Level 1** access which only permits access to the Status screen (library and drive status information) and the History screen (view or download library trace logs). • **No** – allows full **Level 2** access to the Status screen and the Move Media, Setup, Functions, and History menus. **Default:** No.

Table 5-7: Network Editable Options(Continued)

Option	Description
Library Name	Enter a custom library name that is displayed at the top the remote access page under the navigation buttons. Up to 100 alphanumeric characters can be entered. **Default:** NEO Series.
Disable FTP Server	Disables FTP access to the library. This option is normally used for uploading drive or library firmware or downloading log files. **Default:** No.

* These options are only valid if the *IP Address Determination* option is set to **User Specified IP Address**. Otherwise, they are greyed out.

Editing Passwords

You can use the Passwords button (in the Edit Options section) to change the passwords for either the front panel or the remote access utility.

Front Panel Touchscreen Passwords

NEO 8000e passwords to access the front panel are represented by four decimal digits that are stored in NVRAM (non-volatile memory) in a range of 0001 to 9999. To create or change a password used to access the front panel options, use the **Passwords** virtual button:

1. From the Default screen, press **Menu** > **Passwords**.

   The screen for setting library passwords is displayed (Figure 5-38).

Figure 5-38: Screen for Setting Library Passwords

2. In the Security Level section, select the password level you wish to set by pressing the appropriate button (**User Level 1**, **User Level 2**, or **Service**).

3. In the **New Level *n* Password** input box, enter one to four digits using the decimal keypad.

   NOTE: While the input box allows for 5 digits, the passwords are limited to only 4 digits.

Each password is represented by four decimal digits that are stored in NVRAM (non-volatile memory) in a range of 0001 to 9999. To disable password verification for a level, enter 0000 as the new password.

4. Touch the **Reenter New Level *n* Password** input box to activate it.

5. Reenter the same password number you entered in Step 3.

6. Press **Save**.

    You receive the following confirmation message:

    The new <type> *password was successfully saved.*

7. Press **OK**.

> **IMPORTANT:** To disable password verification for a Level 1, Level 2, or Service password, follow the procedure above and enter **0000** as the new password.

Remote Access Passwords

Access to the various remote access web pages is controlled by the level of security set when initially logging into the remote access:

*   Web Level 1 (User) access – View Status and History screens only (default: "1").
*   Web Level 2 (Administrator) access – View, configure, and move media; set or change the user-level password; and use all remote access functions (default: "2"). Prevents others from initiating Level 2 options (except for Reboot to regain control).

To change the remote access passwords:

1. At the front panel, press **Menu** > **Network**.

2. Press the **down-arrow** (▼) once.
    The Web Level options are shown.

3. Press **Web Level 2 Login**.

4. At the Web Level 2 Login screen (Figure 5-39), enter the **new password** in the Enter Login field.
    Use Alpha/Numeric and Shift Up/Down to select the appropriate keyboard.
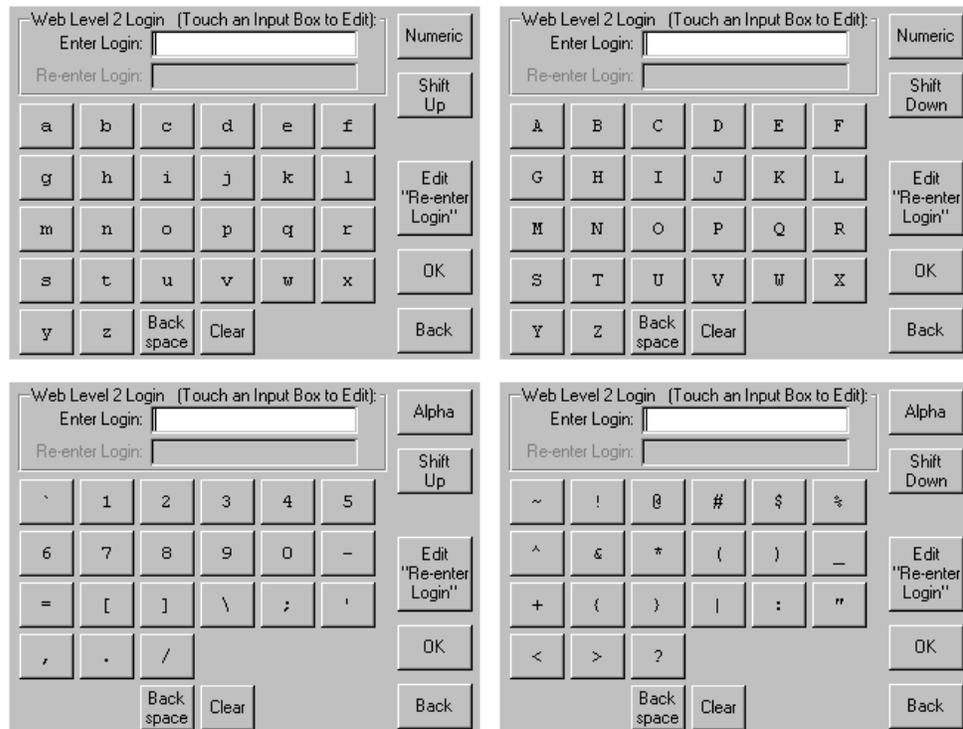
Figure 5-39: Setting Remote Access Level 2 Passwords

5. Press **Edit "Re-enter Login"** and retype the password in the Re-enter Login field.

6. Press **OK**.

7. Press **Save**, then **OK** to confirm.

8. From the Menu screen, press **Maintenance > Reboot Library**.

    The remote access password change becomes effective after the library reboots.

Accessing the Library Remotely

The Web Management Interface utility for remote access is built into the Library Controller card and can be accessed through the card's Ethernet port. It hosts a dedicated, protected web site that can be accessed by a web browser using the IP address assigned to the NEO 8000e library. Access is available either from a computer connected to your network or via the Internet using the default HTTP port 80.

> **NOTE:** If connecting a computer directly to the library to access the Web Management Interface site, use either a auto-MDIX port or crossover Ethernet cable plugged into the Ethernet port.

The default login page uses Java-based encrypted HTTP authentication that encrypts the password sent to the unit. The Web Management Interface firmware uses standard HTML-based pages that are served to a web browser. The password used to log in determines the level of access permitted.

> **NOTE:** Physical options, such as tape removal, can only be accessed using the library's front panel (Chapter 5, "Using the Front Panel Interface").

System Requirements

The remote access interface uses interactive buttons to access different web pages for configuring the library. In order to use the Web Management Interface, you must have the following available:

- 10/100/1000BASE-T Ethernet network
- NEO 8000e IP address
  (Default setting = "Obtain IP Address From a DHCP Server")
- Computer on the same network with an Ethernet port
- Internet Explorer (3.0 or higher), Firefox (1.0 or higher), or Netscape (3.0 or higher) browser with Java and FTP configured.

Setting Up the Remote Access

To set up the remote access, you only need to set the IP addresses from the front panel under Network (Edit Options). To set up IP addressing:

1. Press **Menu > Network**.

   The initial Network configuration dialog box appears (Figure 6-1):

   Figure 6-1: Network Configuration Dialog: IP Addresses

   The first field in this dialog box is the **IP Address Determination** field, which is set by default to **Obtain IP Addresses From a DHCP Server**.

2. Select one of the following methods of determining the library's IP address:

   - To set the IP addresses automatically, accept the default **Obtain IP Addresses From a DHCP Server**. Make a note of the IP address in the field below (grayed-out) and exit.

   - To set IP addresses manually, press the **IP Address Determination** field.

     The following screen is displayed (Figure 6-2):

   Figure 6-2: Setting User-Specified IP Addresses

3. Press **User Specified IP Address**.

   "User Specified IP Address" is now displayed in the New field.

4. To accept this setting, press **OK**.

   You return to the initial Network configuration dialog, but now the fields for setting the IP Address, IP Mask, IP Gateway, and the DNS Server are enabled (Figure 6-3 on page 6-3).

Figure 6-3: Setting User-Specified IP Addresses

5. Select each field in turn, enter the required IP addressing information, then press **OK**.

6. Press **Save** to lock in your settings.

Tip: *Once you have configured the IP addressing for remote access, we recommend that you change the Web Management Interface passwords from their default settings and then reboot the library to activate those changes ("Changing Web Management Interface Passwords" on page 6-5).*

Locating the Library's Local IP Address Set by DHCP

If you configure the library to obtain the library's local IP address from a DHCP server, each time you power up or reboot the library, a new local IP address may be assigned. To locate that newly assigned local IP address in order to log in to the Web Management Interface, do the following:

From the Default screen, press **Menu** > **Library Info** (Figure 6-4). Write down the Local IP Address.

Figure 6-4: Current Local IP Address Displayed

Accessing the Web Management Interface

To access the Web Management Interface, follow these steps:

NOTE: The library must be in the ready mode to establish communications with the Web Management Interface. If you are unable to access the library with your browser, verify that it is not offline.

1. Type the Web Management Interface **unique IP address** in the URL field of your browser, and press **Enter**.

2. At the Login **screen** (Figure 6-5):
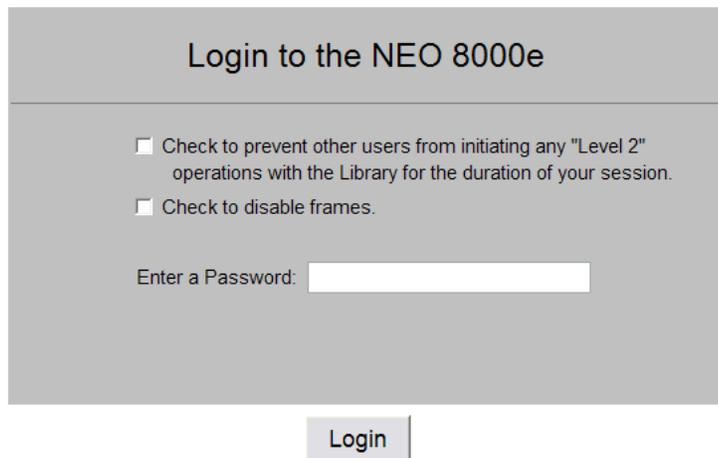
Figure 6-5: Web Management Interface Login Screen

   a. If desired, check **one** or **both** of the following options:

   • If you want to lock out others from accessing this library and making changes, check the **first** option ("Check to prevent other users...").

   NOTE: This locks out all Level 2 operations except Reboot. That way, another user can gain control if needed (if they know the Level 2 password).

   • If you want to disable frames in the Web Management Interface, check the **second** option ("Check to disable frames."). This causes the navigation buttons to be shown in the same frame as the options.

   b. Enter either a Web Level 1 (User) or Web Level 2 (Administrator) security password to set the level of access.

   The default passwords are:

   • Level 1 password = **1**

   • Level 2 password = **2**

   NOTE: The Web Management Interface passwords are case sensitive and must be entered accurately (to set new passwords, see the next section, "Changing Web Management Interface Passwords").

3. Click **Login**.

   The Web Management Interface is displayed. The Status screen is displayed by default (Figure 6-7 on page 6-7). Use the buttons and links to navigate.

NOTE: After 15 minutes of inactivity, the web session is automatically logged out and the security level is reset to off. However, if an auto-refresh time is selected on the Status screen, the session will continue to stay active until you either log out or you view a different page for more than 15 minutes without activity.

## Changing Web Management Interface Passwords

Access to the various Web Management Interface web pages is controlled by the level of security set when initially logging into the Web Management Interface:

- Web Level 1 (User) access – View Status and History screens only.
- Web Level 2 (Administrator) access – View, configure, and move media, set or change the user-level password, and use all remote access functions.

To change the passwords:

NOTE: The Web Management Interface passwords cannot be changed using the Web Management Interface utility.

From the NEO 8000e front panel:

1. Go to **Menu > Network**.

2. Press the **down-arrow (▼)** once.
   The "Web Level 1 and FTP Login" and "Web Level 2 Login" options are shown.

3. Press a **login option** to edit the desired remote access password.

4. At the Web Level Login screen, enter the **new password**.

5. To confirm the new password, press **Re-Enter Login.**
   The Re-enter Login field appears.

6. Enter the **new password** again, then press **OK**.

7. Press **Save**, then **OK** to confirm.
   The password change becomes effective when you **reboot** the library.

Interface Navigation

IMPORTANT: Do not use the browser's Back button to return to a previous screen. Always use the navigation buttons to ensure the dynamic data is refreshed and displayed correctly.

Each Web Management Interface page consists of two frames—a navigational frame on the top that contains the navigational buttons shown in Figure 6-6, and a lower data frame, which displays the options available under the function selected.
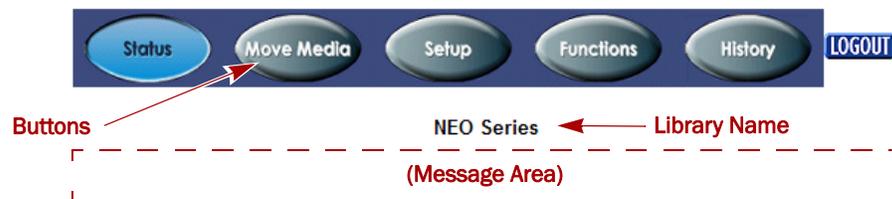
Figure 6-6: Web Management Interface Navigation Bar

The Web Management Interface navigation bar in the top frame provides easy access to web pages for viewing information and configuring options.

The library name is displayed directly below the navigation buttons. The default library name is "NEO Series." For information on changing the library name, see "Editing the Library Options" on page 5-24.

> **NOTE:** If the library is busy, a message is displayed in the lower data frame below the navigation buttons and library name.

Navigation and Security Access

Table 6-1 shows what options are available and the security levels required for accessing them.

Table 6-1: Navigation Descriptions and Security Access

Options	Functionality	Access
Status Button	Displays visual representations of the drives and drawers, library status chart, and drive status charts. In most browsers, holding the mouse over a media icon temporarily displays the bar code information. A drop-down list provides access to detailed drive and library data.	All Levels
Move Media Button	Lets you load or remove media from a tape drive, or move media to different slots within the library.	Web Level 2 only
Setup Button	Provides access to most library configuration parameters.	Web Level 2 only
Functions Button	Offers maintenance and diagnostic options for the library. Reboot and Reconfigure buttons are available on this screen.	Web Level 2 only
History Button	Gives you access to view or download library trace logs.	All Levels
Logout Button	Disconnects from the Web Management Interface and resets the security level to off.	All Levels

General Usage Process Steps

To change the Web Management Interface settings, follow these general steps:

1. Click the appropriate **navigation button** to display the item to be configured.

   > ⚠ **CAUTION:** Clicking a button may cause the library to go offline, possibly interrupting host requests. Once you exit the menu item you selected, the library automatically goes back online.

2. If the **Library to go Offline message** screen is displayed, do the following:

   a. If desired, check **one** or **both** of the following options:

   - If you no longer want this message prompt to appear, check the **first** option ("Check to discontinue this prompt…").

- If you want the function to be executed even if the library is busy, check the **second** option ("Check to execute the operation..."). This is not recommended while the host software is active.

    b. To continue, click **Confirm** (or click **Cancel** to terminate the process).

3. Follow the onscreen instructions. In most cases, when you are done, click **Submit**.

If necessary, click a button on the main page to access a subpage of options.

To go back to the main menu page, click the **same navigational button** again.

Status Button

The Status button displays a visual representation (Figure 6-7) of components, general information, statuses, and reports about the library. When necessary, scroll down to view all the information. Clicking a drive graphic at the top takes you to the appropriate summary section at the bottom of the screen.
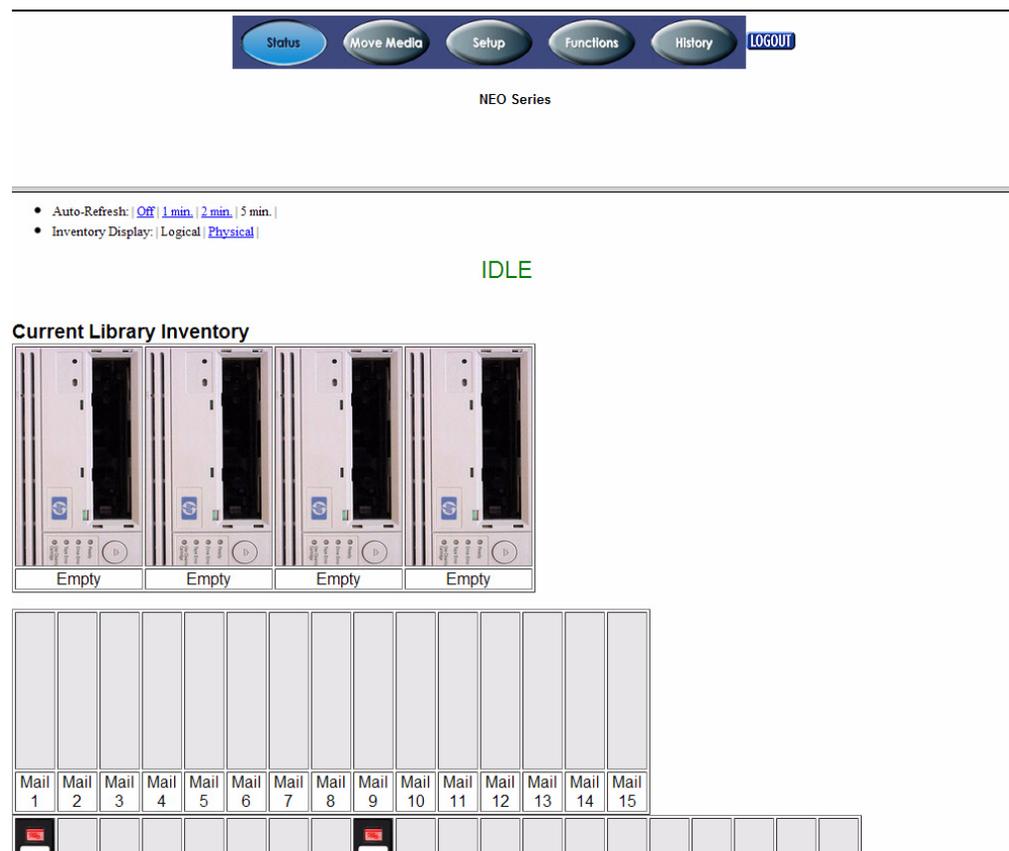
Figure 6-7: Status Screen (Top; Unpartitioned)

Table 6-2 provides details on the information presented on the Status screen:

Table 6-2: Status Screen Features

Status	Description
Auto-Refresh Options	You can configure an automatic refresh setting for the Status screen. Options of 1-, 2-, or 5-minute refreshes are available. **Default:** Off
Inventory Display	You can configure the style of media display. Select **Logical** to show all the slots in order or **Physical** to shown the slots based on drawers and positions. **Default:** Logical
Current Library Inventory	Visual display of the drawers and drives showing the locations of the tape media. In some browsers, holding the mouse over the tape icon temporarily displays the actual bar code.
Library Status	Shows general information about the library and its firmware. See **"Library Status Information"** for more information.
Drive Status Summary	Displays a summary of key drive information for each drive. See **"Drive Status Summary Table"** for more information.

Library Status Information

After the slot information, the Library Status table is shown and includes the current library state (Figure 6-8).

Figure 6-8: Status Screen (Library Status Section Near Bottom)

Drive Status Summary Table

Figure 6-9 shows the Drive Status (Summary) tables on the Status page.

Drive 1 Status (Summary)	
Drive Type	HP LTO5
WW Node Name	50:01:10:A0:01:30:CC:92
WW Port 0 Name	50:01:10:A0:01:30:CC:90
Compression On?	YES
Drive State	Loaded
Tape Format	LTO-3
Write Protected?	YES
ADI Bridge	Enabled

Drive 2 Status (Summary)	

Figure 6-9: Drive Status Tables (FC Drive)

NOTE: The information displayed in the Drive Status Table varies with the type of drive installed in the library.

Full Drive Status

To get a complete status on a drive in the library:

1. Log into the Web Management Interface, and click **Status**.

   At the bottom of the Status screen, you will see the Full Drive Status button (Figure 6-10).

WW Port 0 Name	50:01:10:A0:01:30:C0:34
WW Port 1 Name	50:01:10:A0:01:30:C0:35
Compression On?	YES
Drive State	No Tape
Tape Format	--
Write Protected?	--

FULL DRIVE STATUS

Click for Full Drive Status Report
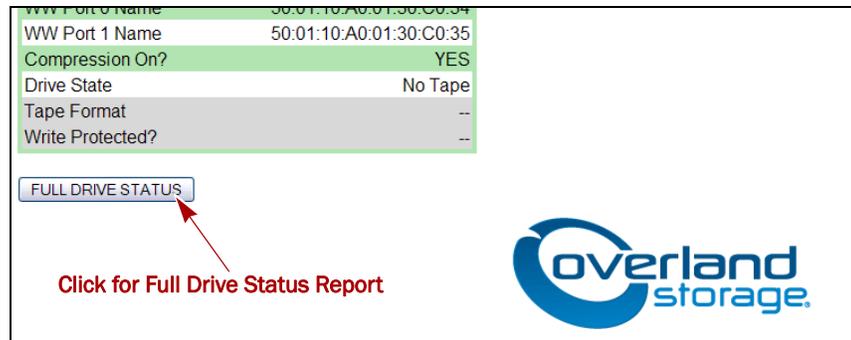
Figure 6-10: Full Drive Status Button on Status Screen (Bottom)

2. Click **Full Drive Status**.

3. From the Select Drive drop-down list (Figure 6-11), select a drive number, then click **Select Drive**.

Select a drive for status display.
1   Select Drive

Figure 6-11: Select a Drive for Full Report

The Full Drive Status table for the selected drive is displayed (Figure 6-12).

Drive 1 Status (Complete)	
Drive Identification	
Drive Type	HP LTO5 fibre channel
Serial Number	HU19487UA0
Vendor ID	HP
Product ID	Ultrium 5-SCSI
Revision Level	I33H
Firmware Version	014.307
World Wide Node Name	50:01:10:A0:01:30:CC:92
World Wide Port 0 Name	50:01:10:A0:01:30:CC:90
Drive Status	
Media Status	Loaded
Activity	Loaded
Cleaning Status	None
Write Protected	Yes
Compression	Enabled
Media Removal	Allowed
Error Condition	No

There were 12 drives detected
Select another drive for examination
1 ▾ [Select Drive]

Figure 6-12: Sample Full Drive Status Table (FC)

The list of possible drive activity states are described in Table 6-3.

Table 6-3: Tape Drive Activity Summary

Status	Description
Active	Other medium activity.
Calibrating	Calibrating medium.
Cleaning	Cleaning operation in progress.
Communication Error	Error communicating with the drive.
Erasing	Erasing medium.
Formatting	Formatting medium.
Hardware Error	There is an error in the drive hardware.
Idle	The drive is idle.
Initializing	The drive is initializing.
Loaded	Medium is in the drive and ready.
Loading	Medium is being loaded into the drive.
Locating	The drive can be instructed to space n data blocks or file marks without host intervention to reach a desired piece of data quickly.
Media Error	There is a pending error on the loaded medium.
No Tape	No tape inserted.
Not Installed	No drive is present.
Rd Encrypt	Reading encrypted data.

Table 6-3: Tape Drive Activity Summary (Continued)

Status	Description
Reading	Reading from medium.
Rewinding	Rewinding medium.
Unknown	Undefined drive activity.
Unloading	Medium is being unloaded from the drive.
Updating Code	Drive firmware is being flashed to the drive.
Uploading code	The drive has its own firmware, which is maintained by the drive manufacturer. This status indicates that the drive firmware is being uploaded to the drive. This is the status from running **Functions** > **Drive Flash Operation**.
Wr Encrypt	Writing encrypted data.
Writing	Writing to medium.

To view the full status of another drive, select its number from the drop-down list at the bottom and click **Select Drive**.

Move Media Button

⚠ CAUTION: Do not move tape cartridges while the Library Applications Software is running. Fatal software faults may occur!

NOTE: Web Level 2 security is required to access the Move Media screen.

The Move Media button lets you move a selected cartridge to a target drive or cartridge slot using drop-down lists showing available sources and destinations.

Moving a Tape Cartridge (No Partitioning)

To move a tape cartridge in a library with no partitioning:

1. Access the **Web Management Interface**.
2. Select the **Move Media** button.

   Figure 6-13 shows the Move a Tape Cartridge dialog:
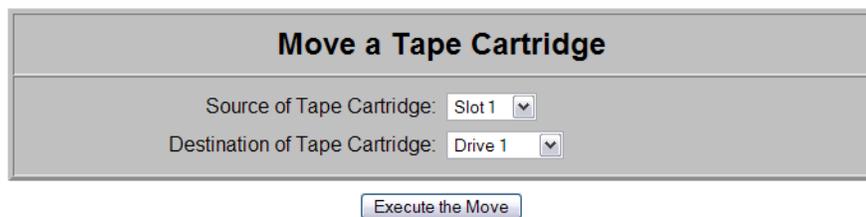
Figure 6-13: Move a Tape Cartridge (No Partition) Dialog Box

3. Select the **Move a Tape Cartridge** options:

    a. From the **Source** drop-down list, choose the slot or drive where the source tape cartridge is currently located.

    b. From the **Destination** drop-down list, choose the destination slot or drive.

4. Click **Execute the Move**, then click **Confirm**.

During the move operation, updates are displayed every five seconds. After the move is completed, a final status message is displayed:

"The cartridge move operation was completed successfully."

5. Click the **Status** button to view the results of the move operation or **Move Media** to move another tape.

Moving a Tape Cartridge (Partitioned)

To move a tape cartridge in a library with partitioning configured:

1. Access the **Web Management Interface**.

2. Select the **Move Media** button.

Figure 6-14 shows the Move a Tape Cartridge dialog:

Figure 6-14: Move a Tape Cartridge (Partitioned) Dialog Box

3. Select a partition number from the drop-down list, then click **Select Partition**.

The Move a Tape Cartridge in Partition n dialog box appears, where n is the number of the partition selected in Step 3 (Figure 6-15).

Figure 6-15: Move a Tape Cartridge in Partition Dialog Box

4. From the **Move a Tape Cartridge in Partition n** dialog box:

    a. From the **Source** drop-down list, choose the slot or drive of the source tape cartridge.

    b. From the **Destination** drop-down list, choose the slot or drive for the tape cartridge's destination.

5. Click **Execute the Move**, then click **Confirm**.

During the move operation, updates are displayed every five seconds. After the move is completed, a final status message is displayed:

"The cartridge move operation was completed successfully."

6. To view the results of the move operation, click the **Status** button.

Setup Button

> NOTE: Web Level 2 security is required to access the Setup screens.

The **Setup** button launches the Configuration Menu that is used to configure these nonvolatile library options:

- Library Configuration
- Partition Configuration/Disable Partitioning
- SCSI Configuration
- Drive Configuration
- Capacity Configuration
- Notification Registration
- Remote FTP Configuration

Web Management Interface Configuration Menu

To access the Configuration menu:

1. Log into the Web Management Interface and click **Setup**.

The Configuration Menu is displayed (Figure 6-16 on page 6-14).

The library configuration options and settings correspond to the options and settings available through the front panel when you go to **Menu**.

Figure 6-16: Setup Menu Screen

NOTE: The second item, Partition Configuration, changes based on whether the partitioning configuration is active or not (see Figure 6-17 and Figure 6-18).

Figure 6-17: Partial Configuration Menu (Partitioning Feature Key Entered)

Figure 6-18: Partial Configuration Menu (Partitioning Configured)

2. Click one of the configuration **buttons** on the menu to open a configuration subpage to view or change parameters.

> **IMPORTANT:** Some changes automatically cause the library to reboot. If any other changes are made that specify that they are **not effective** until the library is rebooted, you must reboot the library manually. Use the **Reboot Library** button at the bottom of the Functions page.

NOTE: If you have not disabled the Offline Confirmation prompt, it will appear the first time you access any of the configuration options under Setup. Click **OK** to continue.

Library Configuration

To configure the library settings:

1. Log into the Web Management Interface and click **Setup**.
    The Configuration menu is displayed.

2. Click **Library Config**.
    The Library Configuration menu is displayed (Figure 6-19).

Figure 6-19: Library Configuration Screen (No Partitions)

If partitioned, some items are not shown or not available (Figure 6-20).

Figure 6-20: Library Configuration Menu (Partitioned)

3. Change the library settings as necessary. When satisfied with the changes, click **Submit**.

The library reboots. Wait for POST to complete.

> **IMPORTANT:** If the Web Management Interface is configured to obtain an IP address from a DHCP server, note the new IP address (press Menu > Library Info), then log in to the Web Management Interface again.

Table 6-4 below describes the library configuration options available:

Table 6-4: Setup Library Configuration Options

Library Option	Description
Auto Clean Mode	Select either **Enabled** or **Disabled** from the drop-down list to activate this feature. A cleaning cartridge must be in a reserved slot for this feature to function. **Default:** Disabled

Table 6-4: Setup Library Configuration Options (Continued)

Library Option	Description
Reserved Slots	**NOTE:** If the library is to be partitioned, the reserved slots must be configured before partitioning. You can reserve up to 20 slots. The slots are reserved using the Fixed Slots from the last slot forward, and are numbered with a *Clng* prefix (Cleaning) on the Status page physical inventory display. For a multi-module system, only the Master Fixed Slots are used. The reserved slots can be used to either store cleaning cartridges or reduce the number of active slots to meet host software requirements since they are not visible to the host. If reserved cleaning slots are configured for a partitioned library, they can be accessed by any partition. Regular tape cartridges can be transferred between partitions using a reserved cleaning slot as an intermediary. Reserved slots do not appear in the Logical Status view. Moves must be done manually using either the front panel or the remote access. **Default:** 0
Unload Mode	Choose from either **Implicit** (no *Unload* command) or **Explicit** (separate *Unload* command to drive) to match the host application. **Default:** Implicit
Auto-Install a Drive	Permits automatic installation of new drives as they are detected. If disabled, new drives can be explicitly installed using the front panel. Choose from either **Enabled** or **Disabled**. **Default:** Enabled
Drive and Slot Numbering	Determine if the drives and slots are numbered starting at either one or zero. **Default:** One Based
Barcode Label Size	Choose the number of characters from the barcode labels actually used by the library. The range is 1–8 characters. Library reboots automatically when Submit is clicked. **Default:** 8 Chars
Barcode Label Alignment	Specify **Left Aligned** or **Right Aligned** barcode label alignment. If there are more characters in the bar code than configured as the maximum number, only the specified number of characters are reported as read from either the left or right end of the bar code based on this setting. Library reboots automatically when Submit is clicked. **Default:** Left Align
Barcode Label Check Digit	Choose one of these settings for the barcode check digit: • Disabled • Enable Check, Send • Enable Check, Don't Send Library reboots automatically when Submit is clicked. **Default:** Disabled

Table 6-4: Setup Library Configuration Options (Continued)

Library Option	Description
Barcode Reader	Select to either enable or disable the barcode reader from retrying to read a bar code label. Library reboots automatically when Submit is clicked. **Default:** Retries Enabled
Drive Used for Bridging	**NOTE:** This option is not available on single-drive or partitioned libraries. Select the drive in a multi-drive system that is used for LUN 1 bridging of the library robotics controller to the host system. **Default:** 1

Partition Configuration/Disable Partitioning

This button changes based on whether the library is partitioned or not.

Refer to Chapter 8, "Partitioning," for detailed information on adding and removing partitions.

SCSI Configuration

The SCSI Configuration parameters (Figure 6-21) are equivalent to the ones found on the SCSI/FC (Edit Options) screens available at the front panel.

Figure 6-21: SCSI Configuration Screen (No Partitions)

Figure 6-22: SCSI Configuration Screen (Partitioned)

To view or modify the SCSI configuration settings:

1. Log into the **Web Management Interface** and click **Setup**.
    The Configuration Menu is displayed.

2. Click **SCSI Config,** then click **Confirm** if the Offline message is shown.
    The SCSI Configuration screen is displayed.

3. Make any necessary configuration changes, then click **Submit**.

Table 6-5 describes the SCSI setup options available:

Table 6-5: SCSI Configuration Options

Component	Description
Mail Slot Access	Determine whether a host **Prevent Allow Medium Removal** command inhibits or allows an operator access to the Mail Slot magazine. You can set it to inhibit access or to be ignored. **Default:** "Prevent Allow" Command Inhibits
Vendor Identification	Specifies the response to the Vendor ID field of the SCSI INQUIRY command. The choices are OVERLAND or a custom ID (Vendor Unique).
Custom Vendor Identification	The custom vendor ID is entered in the second field. The vendor ID must be exactly eight (8) characters long. Spaces are appended to the end of a shorter ID. **Default:** OVERLAND

Table 6-5: SCSI Configuration Options (Continued)

Component	Description
Product Identification	Specifies the response to the product ID field of the SCSI INQUIRY command. The choices are NEO Series, LXB, or a custom ID (Vendor Unique).
Custom Product Identification	The custom product ID is entered in the second field. The product ID must be exactly 16 characters long. Spaces are appended to the end of a shorter ID. **Default:** NEO Series
Device Capability Page Length	Choose between Short (14 bytes) and Long (18 bytes) lengths of the Mode Sense/Select Device Capabilities Page (SCSI page 1Fh) to accommodate different SCSI device implementations. **Default:** Short (14 bytes)
Init(ialize) Element Status	Specifies the library's response to the SCSI Initialize Element Status command. The possible settings are **No Inventory**, **Force Inventory**, and **Force Label Scan**. No Inventory option sends the inventory data currently stored in the controller memory. **Default:** No Inventory
Abort Move Status	(Partitioned libraries only.) Reports either "Busy" or "Not Ready" back to the host through the bridge drive when a cartridge move command has been aborted by a SCSI host command. When the robot has finished aborting the command, it resumes reporting "Ready" to new move commands. **Default:** Busy
SCSI Transport Element	Reports either a Single or Multiple transport element. **Default:** Single
Report Element Type	Determines the method to report the type of library elements installed (LTO drives) using the SCSI Read Element Status command. The options are **Disabled** or **Enabled.** Select Disabled for the standard method that uses the DVCID CDB field. Select Enabled to use the vendor-specific field in the Element Descriptor. **Default:** Disabled

Table 6-5: SCSI Configuration Options (Continued)

Component	Description
Post Recovered Errors	Enable or disable the reporting of TapeAlert informational exception conditions with a Recovered Error sense key, when the Method of Reporting Information Exceptions (MRIE) field is set to a value of 0x3 in Mode Page 1Ch, or if the TapeAlert Mode option is set to Rec. Error (cnd). **Default:** Disabled
TapeAlert Mode	Specifies conditions for logging and reporting the following TapeAlert data options: • **Logging Disabled –** Inhibits the logging feature. • **No Exceptions –** Information exceptions are not reported. • **Generate Unit Attention –** Reports information exceptions with a Unit Attention sense key and an ASC/ASCQ of 5D/00. • **Conditionally Generate Recovered Error –** If Post Recovered Errors is enabled, reports information exceptions with a Recovered Error sense key and an ASC/ASCQ of 5D/00. • **Unconditionally Generate Recovered Error –** Unconditionally reports information exceptions with a Recovered Error sense key and an ASC/ASCQ of 5D/00. • **Generate No Sense –** Reports information exceptions with a No Sense sense key and an ASC/ASCQ of 5D/00. • **Report on Unsolicited Request Sense –** Reports information exceptions with a No Sense sense key and an ASC/ASCQ of 5D/00 only in response to an unsolicited Request Sense command. **Default:** Logging Disabled

Drive Configuration

> **NOTE:** There are no configuration settings for SAS drives.

To view or modify the drive configuration settings:

1. Log into the **Web Management Interface** and click **Setup**.
   The Configuration Menu is displayed.

2. Click **Drive Configuration**, then click **Confirm** if the Offline message is shown.
   The Configure a Tape Drive screen is displayed (Figure 6-23).

Figure 6-23: Drive Selection Screen for Setup

3. Choose a drive number from the list and click **Select the Drive to be Configured**.

- If the drive to be configured is a **SCSI drive**, the screen shown in Figure 6-24 is displayed. From the SCSI ID drop-down list, select the SCSI ID number, then click **Submit**.

Figure 6-24: SCSI ID Drive Configuration Screen

- If the drive to be configured is a **Fibre Channel drive**, the screen shown in Figure 6-25 is displayed. Enter the configuration information for each field, then click **Submit**.

Figure 6-25: Fibre Channel Drive Configuration Screen

The Drive Configuration parameters are equivalent to ones found on the front panel. Refer to Table 6-6 below for information on the Fibre Channel drive options available and their functionality.

Table 6-6: Fibre Channel Drive Configuration Options

Option	Description
Port *n* Control (*n=0 or 1*)	Specifies the method for setting the AL-PA. The settings are Disable, Soft Address, and Hard Address. When Hard Address is selected, the Port *n* Hard Loop ID is enabled to select a valid Loop ID. **Default:** Soft Address
Port *n* Hard Loop ID (*n=0 or 1*)	Specifies the Loop ID that the tape drive uses to determine the AL-PA hard address for Port *n*. The possible settings are 1-125. **NOTE:** This option requires Hard Address to be selected in the Port 0 Control option. **Default:** 1
World Wide Port *n* Name (*n=0 or 1*)	Select Default or Custom to set the World Wide Port Name (WWPN). The Default setting uses the factory-configured WWPN while Custom allows you to create a unique name for Port *0* using the Custom WW Port *n* Name option. **Default:** Default
Custom WW Port *n* Name (*n=0 or 1*)	Create a unique World Wide Port Name for Port *n*. To use this option, World Wide Port *n* Name must be set to Custom. Used to allow the WWPN from a removed or replaced drive to be reused to save configuration time. **Default:** 00:00:00:00:00:00:00:00
World Wide Node Name	Select Default or Custom to set the World Wide Node Name (WWNN). The Default setting uses the factory-configured WWNN while Custom allows you to create a unique name for the drive. **Default:** Default
Custom WW Node Name	Create a unique World Wide Node Name for Port 0. To use this option, World Wide Node Name must be set to Custom. Used to allow the WWNN from a removed or replaced drive to be reused to save configuration time. **Default:** 00:00:00:00:00:00:00:00
Topology	Specifies the topology used by the Fibre Channel ports. The four options are: **Use Loop**, **Allow Point-to-Point**; **Use Point-to-Point**, **Allow Loop**; **Force Loop**; or **Force Point-to-Point**. **Default:** Use Loop, Allow Point-to-Point
Speed	Sets the link speed in gigabits per second used by the Fibre Channel ports. The options are: **Auto**, **1 Gb/sec.**, **2 Gb/sec.**, **4 Gb/sec.**, or **8 Gb/sec** (depending on drive types installed). In Auto mode, the drive negotiates the speed with the host. **Default:** Auto

Capacity Configuration

The Capacity Configuration parameters (Figure 6-26) are equivalent to ones found on the front panel.

Figure 6-26: Capacity Configuration Screen

To view or modify the library capacity settings:

1. Log into the **Web Management Interface** and click **Setup**.

    The Configuration Menu is displayed.

2. Click **Capacity Config**, then click **Confirm** if the Offline message is shown.

    The Capacity Configuration screen is displayed.

3. Enter the **Capacity Key** in the field provided.

    You must enter the full 32-digit key; hyphens and spaces are ignored. It is recommended that the key be cut and pasted from the notification e-mail.

4. Click **Submit**.

    The feature is enabled on your library and the library is automatically rebooted.

Notification Registration

> **IMPORTANT:** Simple Network Management Protocol (SNMP) trap addresses and e-mail settings are network specific. Contact your network system administrator for the appropriate values.

Clicking the Notifications button in the Setup menu displays a screen (Figure 6-27 on page 6-25) to configure the library for sending out e-mail messages and significant system event notifications to the network management system (NMS). You can control the SNMP protocol used and the scope of the events that trigger the messages. Changes take place immediately.

E-mail Addresses

Enter the e-mail server address as a name (xyz.com) or as an IP address (www.xxx.yyy.zzz).

Enter e-mail addresses as ASCII strings (myname@mydomain.com).

Server Address:

E-mail Address 1:

**Placeholder Address
(New Address Required)**   E-mail Address 2:

E-mail Address 3:

E-mail Address 4:

Return Address: user@domain

SNMP Configuration

Enter trap addresses as IP address strings (www.xxx.yyy.zzz).

SNMP Trap Address 1:	255.255.255.255
SNMP Trap Address 2:	255.255.255.255
SNMP Trap Address 3:	255.255.255.255
SNMP Trap Address 4:	255.255.255.255
SNMP Version:	SNMPv1
Trap Filter:	Informational, Warning and Critical
Trap Community Name:	private-traps
Get Community Name:	public
Set Community Name:	private

Submit   Reset

Figure 6-27: Notification Registration Screen

To set up notification registration settings:

1. Log into the **Web Management Interface** and click **Setup**.
   The Configuration Menu is displayed.

2. Click **Notification Registration**, then click **Confirm** if the Offline message is shown.
   The Notification Registration screen is displayed.

3. Make any necessary configuration changes, then click **Submit**.
   Refer to Table 6-7 below for detailed information on the notification registration options.

4. To **test** the warning level and e-mail settings, open and close the Mail Slot.

    E-mails are generated and should appear in the Inbox of the address configured to receive notices and event messages.

Table 6-7 describes the Notification Registration options.

Table 6-7: Notification Registration Options

Option	Description
Server Address	Enter the address of the SMTP mail server either as a hostname or an IP address. **Default:** <blank>
E-mail Address *n* *(n=1 to 4)*	Enter up to four addresses to receive e-mail event messages. **Default:** <blank>
Return Address	Enter the e-mail address that will be used as the return address for the event messages and e-mails. **Default:** user@domain.
SNMP Trap Address *n* *(n*=1 to 4*)*	Enter the IP addresses of up to four hosts that can receive SNMP traps. **Default:** 255.255.255.255
SNMP Version	Select the trap protocol of **SNMPv1** or **Disabled** from the drop-down list. **Default:** SNMPv1
Trap Filter	Select the level of severity filter for the notifications from the drop-down list. The selections are: • Informational, Warning and Critical • Warning and Critical • Critical Only. **Default:** Informational, Warning and Critical
Trap Community Name	Enter the authentication for using Trap commands. **Default:** private-traps
Get Community Name	Enter the authentication for using Get commands. **Default:** public
Set Community Name	Enter the authentication for using Set commands. **Default:** private

Remote FTP Configuration

The Remote FTP Configuration parameters (Figure 6-28) allow you to set the FTP connection options needed to access NEO 8000e files from the Overland FTP web site.

Figure 6-28: Remote FTP Configuration

To configure the remote FTP settings:

1. Log into the **Web Management Interface** and click **Setup**.
    The Configuration Menu is displayed.

2. Click **Remote FTP**, then click **Confirm** if the Offline message is shown.
    The Remote FTP Configuration screen is displayed.

3. Make any necessary configuration changes, then click **Submit**.

Table 6-8 describes the remote FTP options.

Table 6-8: Remote FTP Options

Option	Description
FTP Server Address	Shows the IP address of the remote Overland FTP server. This should not be changed unless instructed to do so. **Default:** ftp.overlandstorage.com
FTP User ID	Shows the remote FTP user name. This should not be changed unless instructed to do so. **Default:** ftp_user
FTP Password	Used for the remote FTP password. The current password is hidden. This should not be changed unless instructed to do so. **Default:** ••••••••
FTP Initial Directory	Shows the remote FTP default folder. This should not be changed unless instructed to do so. **Default:** /outgoing/NextGen

Functions Button

NOTE: If you have not already disabled the Confirmation prompt, it will appear every time you make changes to any of the configuration options under Functions.

The Functions button provides controls for these maintenance functions:

- Activate Drives Operation
- Deactivate Drives Operation
- Inventory Library Operation
- Library or Drive Flash Operation
- Perform a Drive Cleaning Operation
- Perform a Timed or Free-Running Library Diagnostic
- Reboot Library
- Reconfigure Library

> **IMPORTANT:** The Diagnostics tests are designed for use by Overland Authorized Service Technicians and is not recommended for access by end users.

NOTE: If one person logged in remotely, and another needs access, they can log in remotely using Web Level 2 and reboot the library to gain access.

Activate Drives Operation

This option (Figure 6-29) is used to activate any drive that was added or deactivated.

Activate Drives Operation

Partition Number: 1

Select the partition to activate drives

Figure 6-29: Functions' Activate Drives Operation Option (Partial Screen)

1. If partitioned, select **Partition Number**.
2. Click **Activate Drives Operation**.
3. Select the **drive number** from the Drive to Activate drop-down list.
4. Click **Execute the Activate Drive Operation**.

Deactivate Drives Operation

This option (Figure 6-30) is used to deactivate any drive for replacement or removal.
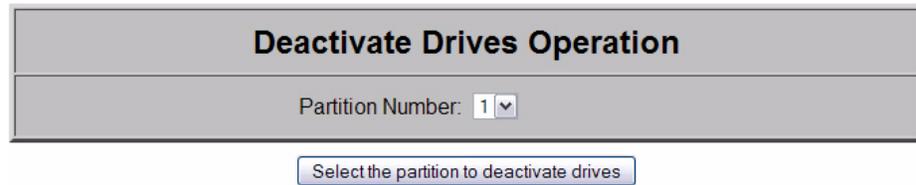
Figure 6-30: Functions' Deactivate Drives Operation Option (Partial Screen)

1. If partitioned, select **Partition Number**.
2. Click **Deactivate Drives Operation**.
3. Select the **drive number** from the Drive to Deactivate drop-down list.
4. Click **Execute the Deactivate Drive Operation**.

Inventory Library Operation

This option (Figure 6-31) is used to force a library inventory to refresh the databases.

Figure 6-31: Functions' Inventory Library Operation Option (Partial Screen)

Click **Start the Inventory** to begin.

Library or Drive Flash Operation

This section covers *both* the Library Flash Operation and the Drive Flash Operation.

The library and drive flash operations provide a way to update a library's or drive's firmware.

Flashing Library Firmware

To install the latest **library** firmware update on your NEO 8000e library:

1. Log into the **Web Management Interface**, then click **Functions**.

   The Library Flash Operation dialog box is displayed on the screen (Figure 6-32). You may have to scroll down to see it.

Library Flash Operation

Flash Operation: Flash Library from Local File ▾

Start the Flash

Figure 6-32: Updating Library Firmware

2. From the Flash Operation drop-down menu, select **Flash Library from Local File**.

The upgrade file needs to be manually uploaded into the NEO 8000e via FTP (see "Downloading and Flashing Local Firmware" on page 6-31). If necessary, contact Overland Technical Support for assistance.

NOTE: If Local file is selected and no file is present, an error message is displayed. The Local file is automatically deleted after use to conserve space.

3. Click **Start the Flash**.

4. Click the appropriate file, and then click **Confirm**.

The library reboots after the firmware update has successfully completed.

Flashing Drive Firmware

The Drive Flash Operation provides options to either update each drive individually or lets you update all of the drives at once.

To download the latest firmware for the drives in your NEO 8000e library:

1. Log into the **Web Management Interface,** then click **Functions**.

The Drive Flash Operation dialog box is displayed on the screen (Figure 6-33). You may have to scroll down to see it.

Drive Flash Operation

Flash Operation: Flash Drive 1 (HP LTO Gen. 5) from Local File ▾

Start the Flash

Figure 6-33: Updating Drive Firmware

2. From the **Drive Flash Operation** drop-down menu, select to update either a single drive or all drives (only if all drives are the same type).

The upgrade file needs to be manually uploaded into the NEO 8000e via FTP (see "Downloading and Flashing Local Firmware" on page 6-31). If necessary, contact Overland Technical Support for assistance.

NOTE: If Local file is selected and no file is present, an error message is displayed. The Local file is automatically deleted after use to conserve space.

3. Click **Start the Flash**.

Downloading and Flashing Local Firmware

Firmware for both the library and the tape drives is located in:

ftp://ftp.overlandstorage.com/Firmware/

- The **library** firmware is located in:

   ftp://ftp.overlandstorage.com/Firmware/Neo_Series/NeoE/Neo8000E

- The **tape drive** firmware is stored in specific directories in the Firmware directory for each model (for example, *HP_LTO4_Drive*) and interface type (such as, *Fibre*). The file naming convention for all tape drive firmware files is "*M##*H.E" where *M##* = Drive Model Code (M) and Version Number (##).

   NOTE: The "FRM" file is used for a different program. Do not download this file.

Follow these steps to download either of the firmware for use as a Local File:

1. Connect to the Overland Storage **FTP site** as detailed above.

2. Locate the proper tape drive or NEO 8000e **directory**.

3. Using your preferred browser or FTP client, **download** the firmware to your **local computer**, saving it in an easy-to-find location.

    NOTE: If blocked by a firewall, you need to obtain access elsewhere and then load the file on a local computer.

4. Using your preferred browser or FTP client, **upload** the firmware to the **library**.

    NOTE: To FTP into the NEO library, you must use the Level 1 password that has been set for the library (the default password = 1).

    - If using a **browser**, use this address:

         ftp://*<user_name>*:*<L1_password>*@*<neo_ip_address>*/upload

      and follow the prompts.

    - If using the DOS command line **FTP client** on a Windows system, follow this procedure:

      ```
      ftp <neo_ip_address>
      (Login:) guest
      (Password:) 1 (or new_password)
      cd /upload
      bin
      put M##H.E (where M## is the model and version)
      bye
      ```

5. Using your preferred browser, update the library or drive **flash**:

    IMPORTANT: If using Microsoft Internet Explorer 8, you must change the Advanced Internet Options by deselecting the "Use Passive FTP (for firewall and DSL modem compatibility) option. If this is not possible, enter the FTP address directly into Windows Explorer file manager.

    a. Using a Level 2 password (default password = 2), log into the **Web Management Interface**.

    b. Click **Functions**.

    c. From the flash operation drop-down menu, select to flash from the **Local File**.

    d. Click **Start the Flash**, select the firmware file name, and click **OK**.

       When the flash operation is finished, the interface displays a completion message.

Perform a Drive Cleaning Operation

You can either store a cleaning cartridge in a reserved slot or insert one in the Mail Slot when needed. If no reserved slots are configured, a cleaning cartridge can be stored in a regular slot.

⚠ **CAUTION:** Perform a Clean Drive option **ONLY** when the library displays a message informing you that a drive needs cleaning. Because a cleaning cartridge is abrasive, excessive cleaning can shorten the life of a drive.

NOTE: The drive being cleaned must be empty of any tape cartridges before cleaning the drive.

1. If necessary, remove the **media** from the drive to be cleaned.

2. Verify that a **cleaning cartridge** is loaded in the library.

3. Log into the **Web Management Interface**, then click **Functions**.

4. If the library is partitioned, select the partition number, then click **Select the Partition for the Clean** (Figure 6-34).

Figure 6-34: Perform a Drive Cleaning Operation Partition Selection

5. Specify the **source** of the cleaning tape and **destination** drive (Figure 6-35).

Figure 6-35: Perform a Drive Cleaning Operation Dialog Box

- From the **Source of Cleaning Tape** drop-down list, select the slot where the cleaning tape is located.

- From the **Drive to Clean** drop-down list, select the drive to be cleaned.

6. Click **Execute the Clean**, then click **Confirm**.

    When the cleaning cycle is finished, the library returns the cleaning cartridge back to its original slot.

Perform a Timed or Free-Running Library Diagnostic

The Library Diagnostics test the library's operational mechanisms to make sure they are running and operating properly. Two library diagnostic tests are available:

- **Cartridge Cycle**: Randomly fetches cartridges from slots and stows them in different slots.
- **Drive Cycle**: Randomly fetches cartridges from slots and inserts them into a drive.

After running either of the library diagnostics, the library performs an inventory to update the library's cartridge map.

To run a library diagnostic:

1. Log into the **Web Management Interface**, then click **Functions**.

    The Library Diagnostic dialog box is displayed (Figure 6-36).

Perform a Timed or Free-Running Library Diagnostic

Diagnostic to Run: Cartridge Cycle ⌄

Time to Run: 1 minute ⌄

Start the Diagnostic

Figure 6-36: Library Diagnostic Dialog Box

2. From the drop-down menu, select which diagnostic to run (**Cartridge Cycle** or **Drive Cycle**).

3. Specify the time to run the diagnostic.

    The **Time to Run** options you can select are:

    - 1 minute (the default)
    - 5 minutes
    - 10 minutes
    - 30 minutes
    - 1 hour
    - 2 hours
    - 5 hours
    - No Time Limit

4. Click **Start the Diagnostic**.

    - When a timed diagnostic is finished running, you receive the following message: "The Cartridge/Drive Cycle diagnostic has successfully run to completion."
    - For a free-running diagnostic, it will continue until you click the displayed **Stop the Diagnostic** button.

Reboot Library

This button is located at the bottom of the Functions page (Figure 6-37). When you choose to reboot the library, the library performs a full, normal reboot after completing any cartridge move that was in progress:
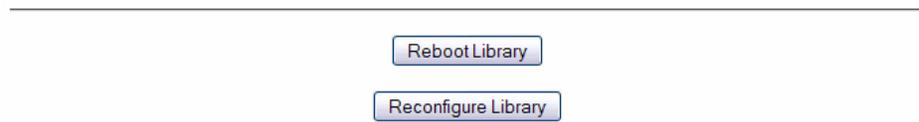
Figure 6-37: Reboot and Reconfigure Buttons on Functions Page

1. Log into the **Web Management Interface**, then click **Functions**.
2. Click **Reboot Library**.
   The Reboot Library button is located at the bottom of the Functions page.

Reconfigure Library

The Reconfigure Library button appears at the bottom of the Functions page only if the library is:

• A Master in a multi-module configuration.
• A Standalone configuration which has been partitioned.

Unpartitioned Standalone units do not show the button.

The button is used to reset the library configuration after permanently removing a drive or library module.

> **NOTE:** NEO 8000e libraries automatically reconfigure themselves when a new drive or library module is added. For a partitioned library, you must disable partitioning, add the drive or library module, and then reconfigure partitioning to add the drive or module to the correct partition.

When you choose to reconfigure the library, the library performs a full, normal reboot after completing any cartridge move that was in progress.

To reconfigure the library:

1. Log into the **Web Management Interface**, then click **Functions**.
2. At the bottom of the Functions page, click **Reconfigure Library**.
   The library reboots.

History Button

The History button provides access to service-related options such as viewing the library trace logs. The trace log options (Figure 6-38) let you either view a trace log on-screen or download it as a BIN file.

> **IMPORTANT:** A Library Trace log should be saved every time changes are made to the configuration in the event the information is needed, particularly should the chassis or controller card be swapped out.

Display a Library Trace Log

| Library Special Trace ⌄ | Display Trace |

Download a Binary File (.bin) from the Library to Your Hard Drive

Library Trace file (60024 bytes)

Library Non-Volatile Trace file (60472 bytes)

Library Special Trace file (416668 bytes)

Library Servo Trace file (28836 bytes)

Library Diagnostic Trace file (96216 bytes)
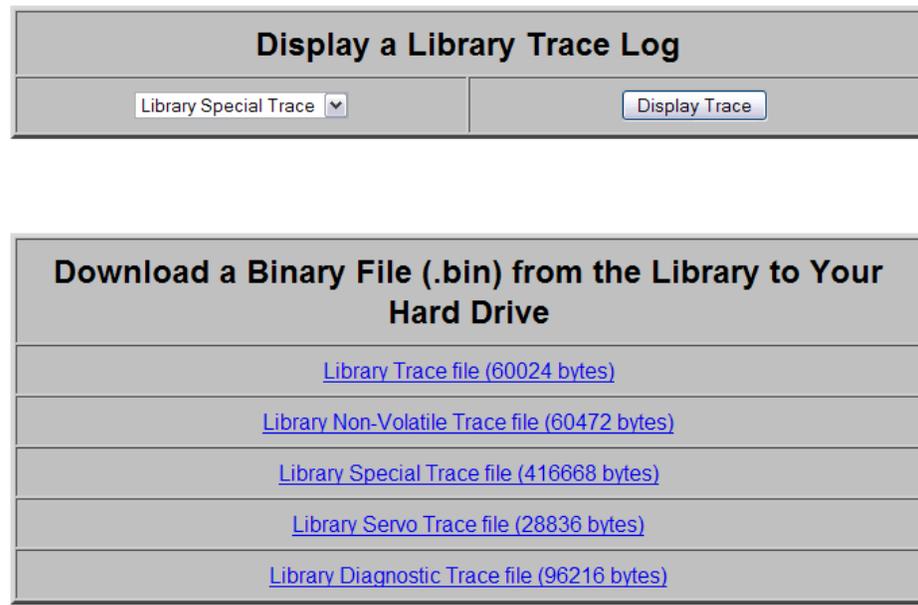
Figure 6-38: History Screen

Display a Library Trace Log

To display a library trace file in your web browser:

1. Log into the **Web Management Interface**, then click **History**.
    The History options are displayed.

2. Click **Display Trace**.
    A full trace file is created and displayed in the web browser. Use the web browser's Print option to make a hard copy of the information.

Download a Full Binary Trace File

With this option, you can download a full library trace file in binary format to your computer.

To download a full library trace file:

1. Log into the **Web Management Interface**, then click **History**.

2. Click the **type of trace file** you want to download.
    A Save As window appears, letting you select a network destination for the download.

Logout Button

LOGOUT

The Logout button provides an easy egress from the Web Management Interface by shutting down the secure link. It is also recommended that you close your browser to clear all temporary caches.

Cleaning Library Tape Drives

> ⚠ **CAUTION:** Perform a Clean Drive option **ONLY** when the library displays a message informing you that a drive needs cleaning. Because a cleaning cartridge is abrasive, excessive cleaning can shorten the life of a drive.

While most backup software now manages the automatic cleaning of library tape drives as a normal part of operations, it is recommended to use either the Manual or Automatic NEO 8000e tape drive cleaning option. The NEO 8000e options are based on actual need rather a time period resulting in less wear on the drives.

> ➡ **IMPORTANT:** The Maintenance option is designed for use by Overland Authorized Service Technicians. With the exception of Clean Drive, it is not recommended for access by end users.

There are two ways to manage the cleaning of the installed tape drives:

- Manually:
    - At the front panel, press **Menu > Maintenance > Clean Drive**.
    - Using the remote access, select **Functions > Perform a Drive Cleaning Operation**.
- Automatically (by enabling Auto Clean Mode):

    > ➡ **IMPORTANT:** Auto Clean Mode is NOT available for partitioned libraries that are configured for virtual mail slots.

    - From the front panel, go to **Menu > Library Options > Auto Clean Mode**.
    - From the remote access, go to **Setup > Library Config > Auto Clean Mode**.

    NOTE: The Auto Clean Mode requires a minimum of one reserved slot for storing the cleaning tape.

Manually Running a Cleaning Cartridge

A cleaning cartridge can be installed and run from one of three locations:

- *Mail Slot*: This location has the advantage of not needing to use a data cartridge slot or to reserve a cleaning cartridge slot.
- *Data Cartridge Slot*: This location requires inserting a cleaning cartridge into a data cartridge slot and then removing it after cleaning.
- *Reserved Slot*: This location requires reserving a Data Cartridge Slot for exclusive use as a cleaning cartridge slot. The advantage with this method is that the cleaning cartridge is stored in the library and is always available for use. It only needs to be handled when the cartridge needs to be replaced. Also, by having multiple cleaning cartridges in several slots, the Auto Clean option will check each one until it finds an unexpired tape (or comes to the end or empty slot). See "Setting Up Reserved Slots" on page 3-7 for more information.

NOTE: When pressing the Source or Cleaning locations, you can repeatedly press the **Element Type** button to cycle through all the available choices. You can also use the decimal keypad to enter the choice number directly into the field.

Running a Cleaning Cartridge from the Mail Slot

To run a cleaning cartridge from the Mail Slot:

1. Install a cleaning cartridge into a Mail Slot.

2. Go to the **Cleaning** option:
   - From the front panel, press **Menu > Maintenance > Clean Drive**.
   - From the remote access, select **Function > Perform a Drive Cleaning Operation**

3. Choose the **Source**:
   - From the front panel, press the **Source** select field, and then press **Mail Slot**.
   - From the remote access, select **Mail Slot** from the drop-down list.

4. Select the **Drive**:
   - From the front panel, press the **Cleaning** select field, and press **Drive** in the Destination Element Type area until the drive needing cleaning is shown.
   - From the remote access, select the specific **Drive** from the drop-down list.

5. Press/click **Execute (the) Clean**.
   When the cleaning cycle completes, the library returns the cleaning cartridge back to the Mail Slot and the display returns to the Maintenance options screen.

6. If using the front panel, press **Back** twice to return to the Default screen.

7. Use the front panel's **Mail Slot Access** option, remove the cleaning cartridge.

Running a Cleaning Cartridge from a Data Cartridge Slot

To run a cleaning cartridge from a data cartridge slot:

1. Install a **cleaning cartridge** into a data cartridge slot (Slot 4, for example).

2. Go to the **Cleaning** option:
   - From the front panel, press **Menu > Maintenance > Clean Drive**.
   - From the remote access, select **Function > Perform a Drive Cleaning Operation**

3. Choose the **Source**:
   - From the front panel, press the **Source** select field, and then press **Slot** until the slot with the cleaning tape is shown.
   - From the remote access, select the appropriate **Slot** from the drop-down list.

4. Select the **Drive**:
   - From the front panel, press the **Cleaning** select field, and press **Drive** in the Destination Element Type area until the drive needing cleaning is shown.
   - From the remote access, select the specific **Drive** from the drop-down list.

5. Press/click **Execute (the) Clean**.

   When the cleaning cycle completes, the library returns the cleaning cartridge back to the drawer slot and the display returns to the Maintenance options screen.

6. If using the front panel, press **Back** twice to return to the Default screen.

7. Use either the front panel **Drawer Access** option or the remote access **Move Media** option, remove the cleaning cartridge.

Running a Cleaning Cartridge from the Cleaning Cartridge Slot

To run a cleaning cartridge from the cleaning cartridge slot:

1. Reserve one or more cleaning cartridge slots:
   - From the front panel, use **Menu > Library > Total Reserved Slots**.
   - From the remote access, select **Setup > Library Config > Reserved Slots**.

2. Install a **cleaning cartridge** into a reserved slot.

3. Go to the **Cleaning** option:
   - From the front panel, press **Menu > Maintenance > Clean Drive**.
   - From the remote access, select **Function > Perform a Drive Cleaning Operation**

4. Choose the **Source**:
   - From the front panel, press the **Source** select field, and then press **Cleaning Slot**.
   - From the remote access, select **Cleaning Slot** from the drop-down list.

5. Select the **Drive**:
   - From the front panel, press the **Cleaning** select field, and press **Drive** in the Destination Element Type area until the drive needing cleaning is shown.
   - From the remote access, select the specific **Drive** from the drop-down list.

6. Press/click **Execute (the) Clean**.

   When the cleaning cycle completes, the library returns the cleaning cartridge back to the cleaning cartridge slot and the display returns to the Maintenance options screen.

7. If using the front panel, press **Back** twice to return to the Default screen.

Automatically Running a Cleaning Cartridge

You can configure the library to automatically run the cleaning cartridge mode. If a tape drive needs cleaning, after it completes an unload operation, it sends a cleaning needed message to the library. This activates the automatic cleaning cycle provided a cleaning cartridge slot has been reserved and contains a cleaning tape.

To automatically run a cleaning cartridge using Auto Clean Mode:

1. **Reserve** one or more cleaning cartridge slots:
   • From the front panel, use **Menu > Library > Total Reserved Slots**.
   • From the remote access, select **Setup > Library Config > Reserved Slots**.

2. Install one or more **cleaning cartridges** into the reserved slots.

3. **Enable** automatic cleaning:
   • From the front panel, use **Menu > Library > Auto Clean Mode > Enabled**.
   • From the remote access, select **Setup > Library Config > Auto Clean Mode > Enabled**.

Replacing a Cleaning Cartridge in a Reserved Slot

When a tape drive detects an expired or defective cleaning cartridge, a message appears on the front panel display. It is then necessary to replace the cleaning cartridge:

NOTE: Under normal conditions, a cleaning tape can be used up to 50 times.

1. Use the **Status** screen to verify that the cleaning cartridge has been unloaded from the tape drive.

   If necessary, unload it using the Move Media menu option.

2. Move the expired cartridge to the **Mail Slot Magazine**.

3. Press **Mail Slot Access** to remove the cleaning cartridge.

4. Mark it "**EXPIRED**," and then properly dispose of it.

5. Place a **new cleaning cartridge** in the Mail Slot.

6. Use **Move Media** to move it to its proper place.

CHAPTER 8

Partitioning

Partitioning is a method in which cartridges, drawers, and LTO drives can be grouped in a virtually autonomous way for the convenience or use of the host or host software, thus creating "virtual libraries." This allows different servers to use the same physical library while maintaining control of their allocated resources because, to the host, each partition looks like a separate tape library.

Partitioning can only be configured using the Web Management Interface remote access; it is not configurable from the front panel touchscreen.

There can be a maximum of four partitions. At a minimum, each partition consists of one drive and one drawer. The drawers are considered separately from the drives and during configuration each partition starts with the first available drawer and first available drive. Numbering of drives, Mail Slots, and regular media slots start at 1 for each partition (each partition labeled Pn where n=1 to 4). Any drives and drawers not assigned to a partition are no longer accessible by the library as long as it is partitioned.

Overview

The NEO 8000e drawers can be partitioned in several different ways depending on the number of drawers activated. Figure 8-1 shows some examples of 6-drawer library configurations:
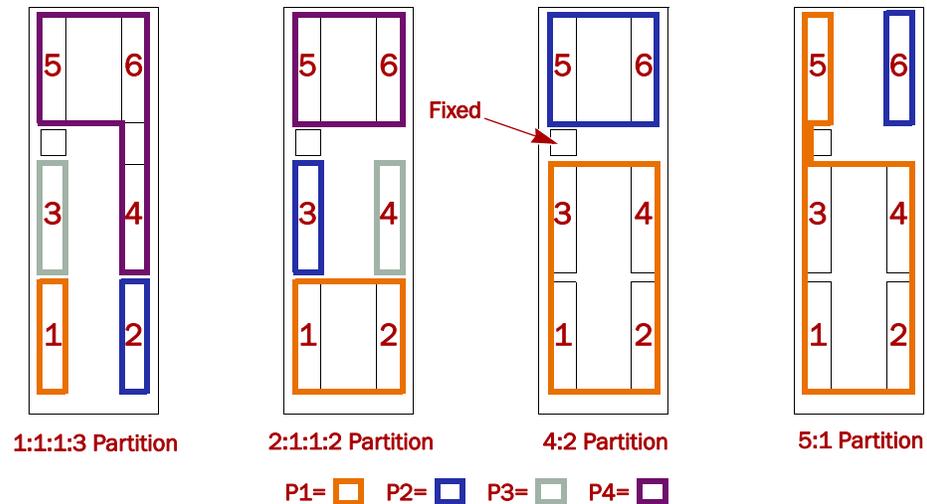

Figure 8-1: Examples of NEO 8000e 6-Drawer Partition Options

Slot Options for Partitions

Both Fixed Slots and Mail Slots behave differently when the library is partitioned.

Mail Slot Options

When a NEO 8000e is configured for partitions, the first 15 slots of the Fixed Slots are reserved for "virtual Mail Slots." The remaining 5 slots are not used. Any combination of slots up to 15 can be configured for a partition and are not available for the remaining partitions. For example, if you configure 8 slots for P1, only 7 slots remain to be configured for all the other partitions.

The Mail Slot magazine is used as a conveyance for the tapes. The tapes are loaded into any slots in the Mail Slot magazine, the magazine is reinserted into the library, and the tapes are automatically moved over to the virtual Mail Slots in the Fixed Slots. Any extra tapes in the Mail Slot magazine are ignored.

Reserved Slots

> ⚠ **CAUTION:** Reserved slots must be configured **before** a library is partitioned. If partitions in a single-module library are configured to share the mail slots (virtual mail mode), the reserved cleaning slot count is automatically reset to zero. See "Automatically Running a Cleaning Cartridge" on page 7-4 for details.

Reserved slots are taken from the last fixed slots in the system. For a multi-module system (Master/Slave), this would be the Slave's fixed slots. The slots are set aside either for storing cleaning tapes or as a slot-reduction method to meet

host software requirements. These slots are not part of any partition but are accessible by **all** partitions. If all drawers are used in the partitions, the slot count of the last partition is reduced by number of slots that have been reserved.

Drive Assignments

> ➡ **IMPORTANT:** At least two drives must be installed in the library system to enable partitioning. Any drives (or drawers) that are NOT included in a partition are no longer accessible by the library while it is partitioned.

Each partition must have at least one of the library drives assigned to it. As such, in a library with fewer than four drives, the maximum number of partitions is equal to the total number of drives in a library.

Drive Usage in Partitions

Drives should be installed starting in drive bay 1 and continuing in order. The last drive bay used determines the number of drives in the library. For example, if bay 6 is the highest numbered bay used, the library assumes there are six (6) drives. If a drive is removed for any reason, during partition configuration, that drive will remain available for use with a partition. That way, when the drive is reinstalled, it can be used without repartitioning the library.

For a NEO 8200 dual-library system, the system adds the number of drives together using the last occupied bay calculation. So if the Master library has six drives (bays 1–6) and the Slave has four (bays 1–4), the partitioning configuration will show 10 drives available. Again, if a drive is removed, the drive will still be included in the partition configuration options.

Standalone vs. Multi-Module

When two NEO 8000e libraries are hooked up together via a PassThru HRA to create a multi-module system, if one library is a NEO 8000e, the other must also be an E-Series library. Older libraries can be upgraded using the *NEO 8000 to 8000e Upgrade Kit* available separately.

A multi-module system uses the drives and drawers of both systems for partitioning. Any drives and drawers of either library not assigned to a partition are no longer accessible by the multi-module system while it is partitioned.

The other slot parameters for partitioned libraries hold true here as well except for Mail Slots. Mail Slots are assigned to partitions directly; there are no virtual Mail Slots. None, one, or both Mail Slots can be assigned to a partition. If just one is assigned, the other is available for a different partition. If not assigned, it is no longer available to the system.

NEO 8000e Partition Setup

> **NOTE:** To cancel the partitioning any time before completion, click the Setup button.

To configure partitions on your **NEO 8000e** library:

1. Login to the **Web Management Interface** using Administrator (User Level 2) security.

2. Click **Setup > Partition Configuration**.

   The first Partition 1 configuration screen is displayed (Figure 8-2).

Figure 8-2: First Partition Configuration Screen

3. Using the drop-down menus, enter the **options** for Partition 1:

   • Select 1 or more drawers.

   • Select 1 or more drives.

4. Click **Continue**.

   The second Partition 1 configuration screen is displayed (Figure 8-3). It shows the items configured for Partition 1 and the remaining unused drawers and drives.

Figure 8-3: Second Partition 1 Configuration Screen

5. Using the drop-down **menus**, choose the remaining Partition 1 options:

- If desired, add **Mail Slots** to the partition:
  - For **Standalone** libraries, add virtual Mail Slots (up to 15)
  - For **Multi-Module** systems, add one or two Mail magazines to the partition.
- Select the **Partition 1 drive** that will be the partition bridge to the host network.

6. Click the appropriate **button** to continue:

- If you are done partitioning the library (even though drawers or drives remain unused), click **Done Configuring Partitions** and continue with Step 8.
- If all the drives or drawers have been assigned to partitions, click **Submit** and continue with Step 8.
- Otherwise, click **Continue**.

  The first configuration screen for the next partition is displayed (Figure 8-4).

Current Partition Settings

Partition 1		Partition 2		Partition 3		Partition 4	
Number of Drawers	1	Number of Drawers	5	Number of Drawers	0	Number of Drawers	0
Number of Mail Slots	4	Number of Mail Slots	0	Number of Mail Slots	0	Number of Mail Slots	0
Number of Drives	1	Number of Drives	5	Number of Drives	0	Number of Drives	0
Bridge Drive Number	1	Bridge Drive Number		Bridge Drive Number		Bridge Drive Number	

Partition 2 Configuration

Drawers and Drives Configuration

Select Number of Drawers:	1 Drawer ▾	Select number of drawers for partition 2. (This includes all mail slots/mail magazines)
Number of Drives:	1 Drive ▾	Select number of drives for partition 2.

Continue   Reset

Figure 8-4: First Configuration Screen for Partition 2

7. Repeat Steps 3–6 for **each remaining partition** being created.

8. After configuring the final partition, click **Submit** (or **Done Configuring Partitions**).

The library automatically reboots. A screen (Figure 8-5) showing the new configuration is displayed for a minute before switching to the login screen.

Partition configuration update was successfully completed

The library is being rebooted; execution completes in approximately 10 seconds.

You may then re-login to the Remote Management Interface.

Current Partition Settings

Partition 1		Partition 2		Partition 3		Partition 4	
Number of Drawers	1	Number of Drawers	2	Number of Drawers	2	Number of Drawers	1
Number of Mail Slots	4	Number of Mail Slots	4	Number of Mail Slots	4	Number of Mail Slots	3
Number of Drives	1	Number of Drives	2	Number of Drives	2	Number of Drives	1
Bridge Drive Number	1	Bridge Drive Number	3	Bridge Drive Number	4	Bridge Drive Number	6

Click this link to immediately display a Login screen.
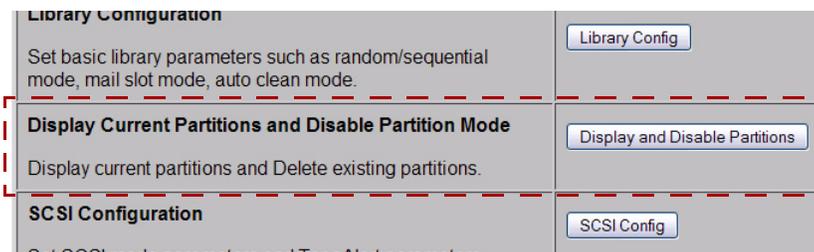
Figure 8-5: Partition Final Configuration Screen

> **IMPORTANT:** To change any partition settings, you must disable partitioning (using the Setup menu) first to clear all old data.

Display and Disable Partitioning

Once a library has been configured as partitioned, the second Setup menu option changes to **Display Current Partitions and Disable Partition Mode** (Figure 8-6).

Figure 8-6: Partial Configuration Menu (Partitioning Configured)

To view the library's current partition configuration:

1. Log into the **Web Management Interface** and click **Setup**.

    The Configuration menu is displayed.

2. Click **Display and Disable Partitions** (clicking OK at the offline message if it is displayed).

    The Current Partition Settings screen is displayed (Figure 8-7).

Current Partition Settings

Partition 1		Partition 2		Partition 3		Partition 4	
Number of Drawers	1	Number of Drawers	2	Number of Drawers	2	Number of Drawers	1
Number of Mail Slots	4	Number of Mail Slots	4	Number of Mail Slots	4	Number of Mail Slots	3
Number of Drives	1	Number of Drives	2	Number of Drives	2	Number of Drives	1
Bridge Drive	Master, Drive 1	Bridge Drive	Master, Drive 3	Bridge Drive	Master, Drive 4	Bridge Drive	Master, Drive 6

You are about to disable the partition mode. The library will reboot immediately after its configuration is updated.

Click Confirm to proceed with the requested operation, otherwise click Cancel.

Confirm   Cancel

Figure 8-7: Current Partitions Settings Screen

3. Do **one** of the following:

- To **keep** the partitions, click **Cancel**.

  A cancelled message is shown. Click any menu button to continue.

- To **remove** the current partition configuration, click **Confirm**.

  Partitioning is removed from the library's configuration and the library is rebooted immediately.

Troubleshooting

Introduction

This chapter describes the error messages and descriptions that may be displayed when there is a possible malfunction, including:

- Platform Problems
- Host Lock Out
- Error Recovery
- Fault Symptom Codes

Platform Problems

An incorrect installation or configuration can cause platform problems. In this case, the library appears to be operating normally, but no data can be interchanged. You also might or might not get an error code on the front panel. To identify an error caused by this type of problem, check your installation and configuration setup. See the *NEO 8000e Quick Start Guide* for information on how to correctly install and configure the library.

General drive errors usually result from a miscommunication between the library and the tape drive or a mechanical malfunction within the library. Both platform problems and general drive errors display an error message and a Fault Symptom Code (FSC) on the front panel. Use an FSC to report errors to your service provider, or in some cases, to determine a recovery procedure.

Host Lock Out

Access to the library's media and drawers can be locked by the backup software running on the host (for example, Symantec's Backup Exec). The library provides no front panel override for this condition (FSC 200F). Exiting the host software also locks media access.

Tip: *If you are unable to access the library's drawers or media, check to see if the host backup software has blocked access to the NEO 8000e library.*

NOTE: If in a locked status, media access can be restored by cycling the library power.

Error Recovery

Figure 9-1 outlines the recommended steps for error recovery. You should follow this chart in all cases.

Error Recovery Procedures (ERPs) are listed in detail in Table 9-1 on page 9-3; Fault symptom codes are listed in Table 9-2 on page 9-3 along with their related ERPs.

Troubleshooting and Error Recovery
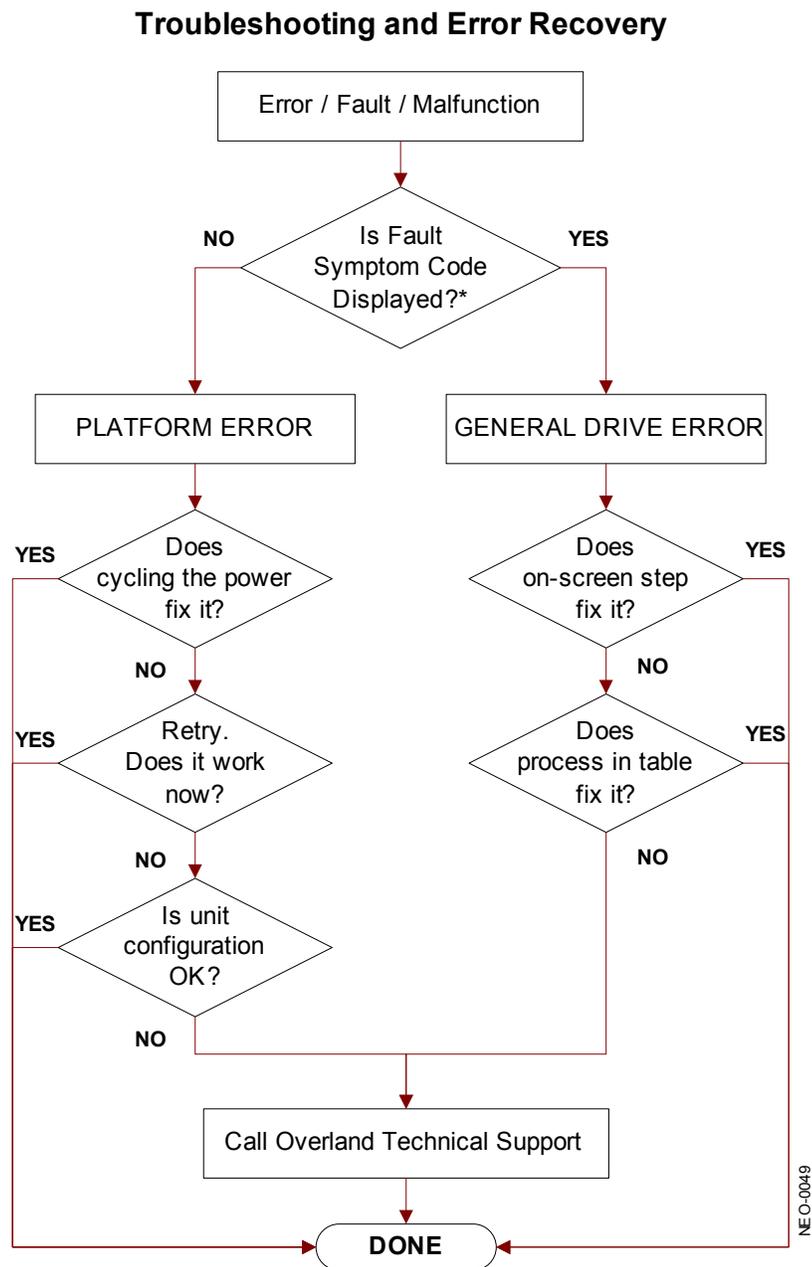
* For a CARTRIDGE ERROR, an FSC may or may not be shown. If the cartridge won't eject, normal operation is impossible. Call Overland Technical Support.

Figure 9-1: Troubleshooting Flow Chart

Error Recovery Procedures

Table 9-1 lists ERPs for errors reported on the front panel of the library. This list includes only those procedures that can be safely performed by an end user.

Table 9-1: Error Recovery Procedures

ERP Code	Procedure/Description
C	Cycle power to the library using the Power virtual button on the front panel. Wait 30 seconds to power on again.
D	Turn off power to the library and inspect connectors and cables.
F	Invalid operation. Carefully select the correct parameters and try again.
G	Contact Technical Support. See the "Overland Technical Support" section in the Preface.

Fault Symptom Codes

Fault symptom codes (FSCs) that appear on the front panel are described in the tables below. A descriptive message and instructions for clearing the fault accompany each FSC. If a fault persists, look up the FSC in Table 9-2 to determine the error recovery procedure or to report it to your service provider.

NOTE: If the fault code is not shown in the table, make a note of the code number and message, then contact Technical Support.

Table 9-2: Fault Symptom Codes

Message	FSC	ERP	
NVRAM Update Error	0306	G	The non-volatile configuration area in flash memory could not be updated (programming error).
NVRAM Downlevel Error	0307	G	User defaults not set and could possibly result in unpredictable behavior.
Barcode Reader Not Detected	0501	D,G	The hardware could not detect a barcode reader.
OS Catastrophic Error	0901	G	Catastrophic SMX operating system error - task creation error, unexpected error.
OS Task Exit Error	0902	G	SmxNet (Ethernet, Web Management Interface) task error - server spawn error, TCP/IP fatal error.
Invalid Ethernet (MAC) Address	0A01	F	The library's Ethernet (MAC) address stored in the non-volatile configuration is not valid - the last 3 octets are either 0:0:0 or 255:255:255.
Invalid IP Subnet Mask (255.255.255.255)	0A02	F	The Ethernet subnet mask stored in the non-volatile configuration is not valid - 255.255.255.255.
SCSI Firmware Error	1001	D,G	Internal SCSI task processing error - unexpected state or hardware status.

Table 9-2: Fault Symptom Codes (Continued)

Message	FSC	ERP	
SCSI Invalid Element	1007	D,G	Internal SCSI task processing error - invalid element type was detected.
Loader Not Ready	2004	C,G	Fail to fetch, stow, scan, move pass-through, or when loader detects invalid command, aborts command.
Wrong Controller Installed	2005	G	Wrong Library Controller Card installed in the library. Contact Technical Support to upgrade.
Drawer Open	2009	F	Drawer is forced open or drawer sensor failed.
Cartridge Inaccessible	200C	F	Indicates the tape is not ejected. Cartridge in drive is not accessible from changer.
Drive In Error	200D	C,G	A general drive error detected by control task.
No Magazine	200E	F	Cannot move, element not installed, from changer.
Removal Prevented	200F	F	Received medium prevent removal from the drive for a fetch. Also see "Host Lock Out" on page 9-1.
Control Firmware Error	2010	C,G	Internal inter-task processing error. Unexpected event. SMX send or receive error.
Move Command Failure	2081	C,G	Move command from / to drive slot failed, detected by control task.
Open Mail Slot Fault	2090	C,G	Door open sensor time-out detected when open door.
No IP Address Found	20A0	C,G	Router failed to get an IP address.
No IP Address Mode Fault	20A1	C,G	Router failed to detected static or IP address mode.
Unknown Exchange For ASYNC Message	20B0	C,G	Unexpected exchange detected when processing messages.
Drive In Error In Set SCSI ID	20C0	C,G	Control failed to set SCSI ID.
Drive In Error In Drive Install	20C1	C,G	Control failed to install drive.
Motor Fault Condition, See Trace For Details	3000	C,G	One of the motors has been disabled and could not be re-enabled. Print out trace log.
Picker Tach Errors	3002	C,G	Picker Tach errors were detected when checking slots.
Bin Fetch Failure	3011	C,G	Loader failed to fetch a cartridge from a bin.
Drive Fetch Failure	3013	C,G	Loader failed to fetch a cartridge from a drive.
Drive Stow Failure	3014	C,G	Loader failed to stow a cartridge in a drive.
Drive Timeout Failure	3015	C,D,G	Loader detects unload command time-out.
Drive Status Failure	3016	C,D,G	Detected drive error from fetch or stow.
Drive Load Retry Failed	3018	C,G	LTO drive fail to load, detected in drive task.
Drive Communication Error	301B	C,D,G	Intertask send, receive failed.
Drive Get General Status Fail	301C	C,D,G	Drive communication failed.
Undefined Config	3020	C,G	In loader, unexpected configuration, not a NEO 8000e.

Table 9-2: Fault Symptom Codes (Continued)

Message	FSC	ERP	
Orphan Cartridge Not Stowed	3030	C,G	The loader could not successfully stow an orphan cartridge to a bin.
Chassis S/N Mismatch, Previous S/N Retained	3031	G	The serial number scanned from the bar code label doesn't match the value stored in non-volatile memory.
Chassis S/N Character Count Is Not Correct	3032	G	A valid serial number bar code label could not be read.
Chassis S/N Did Not Scan	3033	G	A valid serial number bar code label could not be read.
Chassis S/N Save Operation Failed	3034	G	The serial number scanned from the bar code label could not be saved to non-volatile memory.
Motor Firmware Error	3040	C,G	The loader task detected an unexpected status and could not recover (internal target error).
Loader Received Invalid Command	3041	C,G	The loader task received an unexpected command and could not recover (internal target error).
Motor Firmware Error	3042	C,G	The loader task detected an unexpected status and could not recover (internal target error).
Missing Magazine	3050	F	No magazine installed for diagnostics to run.
No Cartridges In Library	3051	F	No cartridge available for diagnostics to run.
Too Many Cartridges	3052	F	Unable to run cart or drive cycle, library is full with cartridges.
Need 1 Drive Minimum	3054	F	No available drive to run diagnostics.
Invalid Magazine Type Encountered (Not LTO)	3057	F	Unsupported magazine type detected. Only LTO is supported.
Magazine Type Change Not Handled	3058	F	Unsupported magazine type detected.
Drive Type Not Supported	3059	F	Unsupported drive type detected.
Diag Fetch, Drive Not Loaded	305B	F	No cartridge present for a fetch.
Invalid Bin Number	305F	F	Invalid bin number detected in diagnostics.
Zone Sequence Error	3060	C,G	Eject command time-out.
Diag Get Drive Status Failed	3078	C,D,G	Failed to get drive status, communication error.
Diag Get Drive Status Failed	3079	C,D,G	Failed to get drive status, communication error.
Diag Get Drive Status Failed	307A	C,D,G	Failed to get drive status, communication error.
Diag Get Drive Status Failed	307B	C,D,G	Failed to get drive status, communication error.
Unsupported Drive For Requested Operation	3084	F	Unsupported drive type.
No Retry Fault On Fetch/Stow	308F	F	The loader retried an operation and retries were disabled.
Picker Jammed	3100	C,G	The picker jammed during loader initialization.
Picker Jammed 2	3102	C,G	The picker jammed during a bin stow operation.

Table 9-2: Fault Symptom Codes (Continued)

Message	FSC	ERP	
Picker Jammed 3	3103	C,G	The picker jammed during a bin stow operation.
Picker Jammed 4	3104	C,G	The picker jammed during a bin stow operation.
Picker Jammed 5	3105	C,G	The picker jammed during a bin stow operation.
Picker Jammed 6	3106	C,G	The picker jammed during a bin stow operation.
Picker Jammed 7	3107	C,G	The picker jammed during a bin fetch operation.
Picker Jammed 8	3108	C,G	The picker jammed during a bin fetch operation.
Picker Jammed 11	310B	C,G	The picker jammed during a drive fetch operation.
Picker Jammed On Stow	310F	C,G	The picker jammed on a stow operation.
Picker Retries Exceeded 1	3111	C,G	Picker retries exceeded during a bin fetch operation.
Picker Retries Exceeded 3	3113	C,G	Picker retries exceeded during a bin stow operation.
Picker Retraction Jam	3115	C,G	The picker did not retract during a bin check operation.
Shuttle Jammed	3200	C,G	The shuttle could not reach the target location.
Rotary Jammed	3300	C,G	The rotary track could not reach the target location.
Shuttle On Wrong Side Of Rotary	3301	C,G	The zone indicators show that the shuttle is backwards on the rotary track during power-up initialization.
PassThru Elevator Jammed	3400	C,G	The PassThru shuttle could not reach the target location.
Vertical Elevator Jammed	3500	C,G	The vertical elevator could not reach the target location.
All Slots Empty	5011	F	There are no cartridges installed in any of the reserved cleaning slots.
Move Command Fail	503B	F	A front panel move operation failed.
Clean Operation Timeout	503C	F	The cleaning operation failed because the drive timed out.
Drive Status Fail	503D	F	The cleaning operation failed because the library could not retrieve drive status.
Command Response From Unexpected Source	7001	D,G	A command response was received from a task to which a command had not been sent.
Control Command Execution Failed	7002	D,G	A command response opcode from the Control task was not anticipated or is un-identifiable.
Control Response Received Without Matching Command	7003	D,G	A command response was received from the Control task, but the original command opcode could not be determined.
Loader Response Received Without Matching Command	7004	D,G	A command response was received from the Loader task, but the original command opcode could not be determined.

Table 9-2: Fault Symptom Codes (Continued)

Message	FSC	ERP	
Drive Response Received Without Matching Command	7005	D,G	A command response was received from a Drive task, but the original command opcode could not be determined.
Flash Response Received Without Matching Command	7006	D,G	A command response was received from the Flash task, but the original command opcode could not be determined.
Drive Index On Update Status Message Invalid	7007	C,D,G	An Update Drive Status message was received from a module, but the drive index was out of range.
Drive Response Not Expected	7008	C,D,G	A command response was received from a Drive task to which a command had not been sent.
WORD Message Opcode Unknown	7009	C,D,G	A WORD-sized message was received but the message opcode could not be identified.
DWORD Message Opcode Unknown	700A	C,D,G	A DWORD-sized message was received but the message opcode could not be identified.
Button Causing Library To Go Offline Unknown	700B	C,D,G	A command to take the library offline was completed successfully, but the front panel button that initiated the action could not be identified.
Destination Exchange Null	700C	C,G	Attempting to send a command to a task, but the argument exchange pointer was NULL.
Sending Command Failed	700D	C,G	An attempt to place a command on a task exchange failed.
Deactivating A Drive That Is Not Attached	700E	C,G	The Control task is indicating that a request to deactivate a drive failed because the drive is not attached.
Drive Deactivation Failed	700F	C,G	The Control task is indicating that a request to deactivate a drive failed; reason is not known.
Drive Removal Failed	7010	C,G	The Drive task is indicating that a request to power-down a drive failed; reason is not known.
Drive isActive Check Failed	7012	C,G	The Drive task is indicating that a request to determine if a drive is executing a host command ("isActive") failed; reason is not known.
Drive Status Update Failed	7014	C,G	The Drive task is indicating that a request to determine the current state of a drive failed; reason is not known.
Loader Command Execution Failed	7015	C,G	The Loader task is indicating that a command has failed to complete successfully.
Sequential Command Execution Failed	7016	C,G	The Sequential task is indicating that a command has failed to complete successfully.
Destination Exchange For Message Is Null	7017	C,G	Attempting to send a message to a task, but the argument exchange pointer was NULL.
Bad Source Module In PEG Message	7018	C,G	A message was received from a remote module, but the module number was out of range.
PEG Message Wrapping NULL Message Pointer	7019	C,G	PEG software message is wrapping a Null message pointer.

Table 9-2: Fault Symptom Codes (Continued)

Message	FSC	ERP	
Exchange Conversion Failed	701A	C,G	Attempt to determine the module number containing the task that is returning a command response failed.
Invalid Logical Drive Number To Convert	701B	C,G	Attempt to send a command to a drive, but the logical drive number is out of range.
Invalid Physical Drive Number To Convert	701C	C,G	Attempt to send a command to a drive, but the physical drive number is out of range.
Invalid Module Number To Convert	701D	C,G	Attempt to send a command to a drive in a remote module, but the module number is out of range.
Unknown Drive Type	701E	C,G	Attempt to show detailed drive status of a drive whose type is unknown.
Unexpected SCSI Task Response	701F	C,G	The command response from the SCSI task in a remote module was unexpected.
Unexpected Flash Task Response	7020	C,G	The command response from the Flash task in a remote module was unexpected.
SCSI Response Received Without Matching Command	7021	C,G	A command response was received from a SCSI task, but the original command opcode could not be determined.
Unexpected State After NonVolConfig Command	7022	C,G	After successfully completing a NonVolConfigPut command, the current state of the save operation was unknown.
Unexpected State After SCSI MODE Command	7023	C,G	After successfully completing a ScsiUpdateModeParameters command, the current state of the save operation was unknown.
Unexpected State After SCSI INIT Command	7024	C,G	After successfully completing a ScsiInit command, the current state of the save operation was unknown.
Drive Fan Stalled	8002	C,D,G	The fan in the drive assembly is either not installed or has stalled.
Drive Load Did Not Complete	8003	C,D,G	The drive failed to successfully load a tape.
Invalid Drive Installed	8004	F	One or more installed drives are of a type either unknown or not supported in the current library personality.
SLTO Unmask Drive Failed	8005	F	The Seagate LTO drive unmask operation failed.
SLTO Mask Drive Failed	8006	F	The Seagate LTO drive mask operation failed.
SLTO Unload Drive (In Load Retry) Failed	8007	F	The Seagate LTO drive failed to unload a cartridge during a load retry operation.
Is Drive Unloaded Failed	8008	F	The Seagate LTO drive failed to return status when being polled for unloaded state.
Invalid Cleaning Media Reported By Drive	8010		Invalid cleaning media.
Orphan Cartridge Recovery Failed	9001	C,D,G	The master module could not successfully return an orphan cartridge to a slot location.

Table 9-2: Fault Symptom Codes (Continued)

Message	FSC	ERP	
Master PassThru Opto Failed	9003	C,D,G	The master module opto sensor was not detected during the power-up PassThru module inventory.
SMX Send Error	A001	C,G	An attempt to place a message on a task's exchange generated a kernel error.
SMX Receive Error	A002	C,G	An attempt to receive a message from a task's exchange generated a kernel error.
COMM Free List Empty	A003	C,G	An attempt to acquire a message from the free pool failed because the pool is empty.
Invalid COMM Put Attempt	A004	C,G	An attempt to place a message on a task's exchange failed because either the argument message pointer was NULL or the argument exchange pointer was NULL.
Invalid COMM Get Attempt	A005	C,G	An attempt to receive a message from a task's exchange failed because the argument exchange pointer was NULL.
COMM Initialization Error	A006	C,G	The Comm manager could not be initialized at power-up because system is out of memory.
Put Of A NULL COMM	A007	C,G	An attempt to place a COMM block on a task's exchange failed because the argument COMM block pointer was NULL.
Message Contains No COMM	A008	C,G	A message obtained from the free pool did not contain a Comm block.
COMM Return Address Is Unknown	A009	C,G	An attempt to return a command response to the originating task failed because the originator could not be determined.

CHAPTER
10

Component and Capacity Additions

The NEO 8000e is a scalable library that allows you to easily add more drives, power supplies, special feature interface cards, and capacity.

⚠ **WARNING:** To reduce the risk of electric shock or damage to equipment, always remove any power cords while working with the unit.

⚠ **AVERTISSEMENT:** pour réduire le risque de choc électrique ou endommagement de l'équipement, retirez toujours les cordons électriques en travaillant avec l'appareil.

Upper Power Supplies (Drives 7-12)

If your library had 6 or fewer tape drives and you are expanding to 7 or more drives, you need to install additional power supplies in the upper power supply case to support these drives. It is recommended that both the primary and redundant power supplies be installed at this time to ensure uninterrupted operation of your library.

To install the new power supplies in the upper power supply case:

1. Remove the **two cover plates** from the upper power supply case by gently prying them off. They are held on with spring clips.

2. Verify the power supply power switch is in the **OFF** position and the **captive fastener** in the lower left corner is open and down (Figure 10-1).
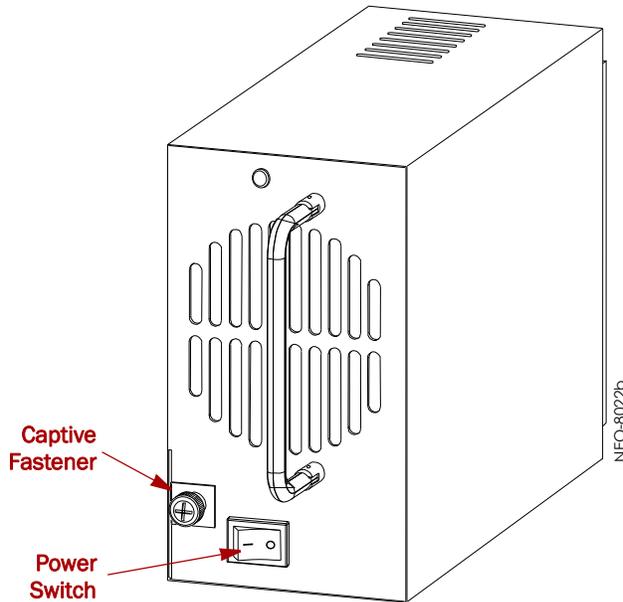
Figure 10-1: NEO 8000e Power Supply

3. Carefully slide the **power supply** into one of the open bays, pushing slowly until it seats firmly against the backplane of the library's power supply case.

4. Push the **captive fastener** up until it locks in place, and tighten the thumbscrew.

5. Repeat Steps 2–4 for the other power supply.

6. **Turn on** both power supplies.

Additional Drive Assemblies

Tape drives are mounted inside individual drive assemblies that are installed at the rear of the library. These assemblies feature LiveSwap technology which permits a drive to be removed and replaced while the other drives and library robotics remain active.

> NOTE: Refer to the documentation that comes with the drive assemblies for complete installation and cabling instructions.

Optional Interface Cards

The Virtual Interface Architecture (V.I.A.) cards provide an easy way for the network or SAN to communicate with the library.

> NOTE: Refer to the documentation that comes with the interface cards for complete installation and cabling instructions.

In general, to install these cards:

1. **Power down** the library and open the circuit breakers. Remove all power cords from the library.

2. Using a Phillip's screwdriver, remove one of the V.I.A. option bay **filler plates**.

⚠ **CAUTION:** The Library Controller card must always be housed in the far right PCI slot of the Primary card cage. Insertion of a V.I.A. card into this slot will damage the PCI backplane and render the library inoperable.

---

3. Carefully insert the **interface card** into the upper and lower guide rails of the V.I.A. option bay and slide it into the bay.

   Resistance is felt when the card begins to mate with the library backplane. Apply just enough force to seat the card snugly to ensure proper connectivity.

4. **Power up** the library.

Adding Capacity

The NEO 8000e Expansion-on-Demand feature allows you to increase your library capacity up to as many as 500 cartridge slots depending upon your data center needs. Simply entering a 32-character key code adds to the storage capacity of your library.

To add capacity slots using the **front panel touchscreen**:

1. From the Default screen, press **Menu**.

2. In the Utilities area, press **Maintenance**.

3. On the Maintenance screen, press **Configure Capacity**.

4. Using the alphanumeric keypad, enter the 32-character capacity upgrade **key code**, then click **OK** (Figure 10-2).
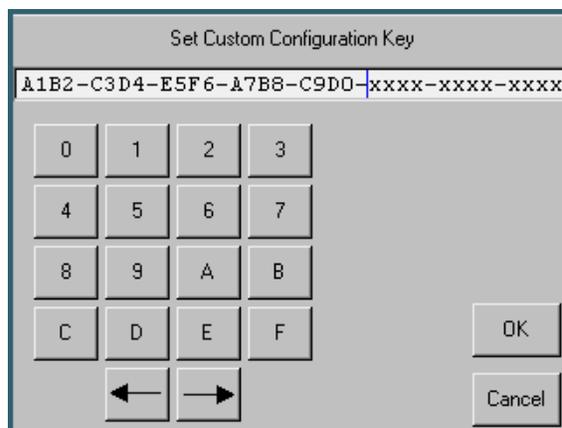
Figure 10-2: Set Custom Configuration Key Screen

5. At the Warning screen, click **OK** to accept the change (Figure 10-3).
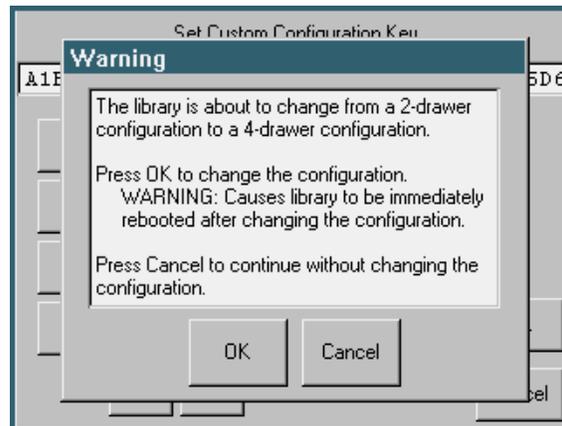
Figure 10-3: Configuration Key Warning Screen

The library reboots. The capacity configuration change takes affect when the reboot process completes.

6. Adhere the new capacity code **sticker** inside the front left door between the top and middle media drawers for future reference.

To add capacity slots using the **remote access**:

1. Log into the **Web Management Interface** with Level 2 security, and click **Setup**.

The Configuration Menu is displayed.

2. Click **Capacity Config**, then click **Confirm** if the Offline message is shown.

The Capacity Configuration screen is displayed (Figure 10-4):

Figure 10-4: Capacity Configuration Screen

3. Enter the **Capacity Key** in the field provided.

You must enter the full 32-digit key; hyphens and spaces are ignored. It is recommended that the key be cut and pasted from the notification e-mail.

4. Click **Submit**.

The feature is enabled on your library and the library is automatically rebooted.

Scalability Option - Horizontal Robotics Assembly

> **IMPORTANT:** Overland Storage recommends that the Horizontal Robotics Assembly be installed only by an Overland Storage authorized service provider. Improper installation may result in damage to this part or the library components which would void all existing warranties.

The NEO 8000e architecture can be expanded by adding a second library unit. A Horizontal Robotics Assembly (HRA) is installed inside the two connected NEO 8000e libraries to enable the robotics in each of the individual libraries to exchange cartridges by means of a pass-through system (Figure 10-5). This results in a system that integrates the robotics of the individual units into a single high-performance library robotics system.
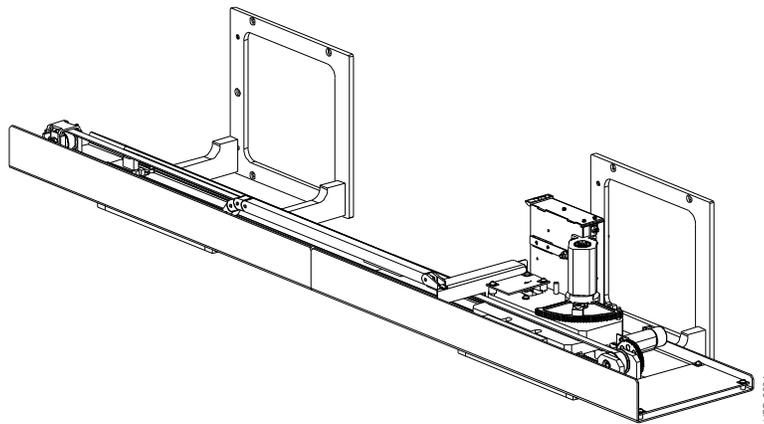
Figure 10-5: HRA and Mounting Brackets

NOTE: Refer to the documentation that comes with the HRA for installation, cabling, and configuration instructions.

NEO 8000e Specifications

See the latest data sheet on the Overland web site for the most current information.

Table A-1: Physical Characteristics

All Models	Specifics
Dimensions (H x W x D)	Unpacked: 76 x 24 x 41.5 in. (193 x 61 x 105 cm)[*] Packaged: 84 x 48 x 48 in. (213 x 122 x 122 cm)
Base Configuration (Zero Drives)	Unpacked: 705 lb. (320kg) Shipping: 885 lb. (401kg)
Weight with Maximum Power Supplies and Drives	758 lb. (344kg) with 12 LTO drives (no cartridges)

* Add about 2 in. (5cm) for the optional rear door.

Table A-2: Interfaces

Connection Type	Specifics
SCSI	VHDCI 68 - one pair per SCSI element
Ethernet	RJ-45
Serial	RJ-11
Fibre Channel	LC connector, up to 8Gb maximum
SAS	Mini-SAS (SFF-8088), up to 6Gb maximum

Table A-3: Operations

Operation	Specifics
Maximum Transfer Rate	Varies by configuration (see web site)
Mount Time, into Drive	Less than 20 seconds
Dismount Time, from Drive (excluding drive rewind/unload/eject time)	Less than 20 seconds
Inventory time (80 LTO cartridges)	Less than 25 seconds
Inventory time (full including tape drives)	Less than 5 minutes
Library calibration (SelfTrue Technology) time	Less than 20 minutes

Table A-4: Reliability

Feature	Specifics
MTBF	More than 250,000 hours
MSBF	More than 4,000,000 cartridge swaps
Design Life	7 years
MTTR	Less than 15 minutes
Maximum time to repair	1 hour

Table A-5: Safety

Agency	Standard
NRTL - US	IEC60950-1, Standard for Safety of Information Technology Equipment
NRTL - Canada	CAN/CSA-C22.2 No. 950, Standard for Safety of Information Technology Equipment
CE Marking (European Union)	Low Voltage Directive, 72/23/EEC, European Union
TÜV GS Mark (Germany)	EN60950, (IEC950) Standard for Safety of Information Technology Equipment, Third addition

Table A-6: Electromagnetic Emissions

Agency	Standard
FCC	US Std. 47 CFR, Part 15 Rules, Class A. Notation on Product
Industry Canada	Industry Canada Rules, ICES-003, Class A. Notation on product
CE Marking (European Union)	EMC Directive, 89/336/EEC Laws, relating to electromagnetic compatibility, European Union EN55022, Standard, RFI limits, Information Technology Equipment, Class A EN55024, Information Technology Equipment, Immunity.
VCCI (Japan)	Class A per CISPR 22, Japan. VCCI statement on product
BSMI (Taiwan)	CNS: 13438, Taiwan. Class A

◀ A-3

Table A-7: Temperature, Humidity & Altitude

Operating	
Dry Bulb Temperature	10°C to 40°C
Temperature Gradient	1°C / min. (across the range)
Temperature Shock	15°C (over 2 min.)
Wet Bulb Temperature	26°C
Relative Humidity	15% to 85% (noncondensing)
Humidity Gradient	10% / hr.
Altitude (Sea Level)	-1000 ft. to +10,000 ft.
Power On – No Tape Loaded (Unpacked – 72 hours)	
Dry Bulb Temperature	0°C to 50°C
Temperature Gradient	15°C / hr. (across the range)
Temperature Shock	15°C (over 2 min.)
Wet Bulb Temperature	30°C
Relative Humidity	10% to 95% (noncondensing)
Humidity Gradient	10% / hr.
Altitude (Sea Level)	-1000 ft. to +10,000 ft.
Non-Operating – Long Term (Packed or Unpacked)	
Dry Bulb Temperature	-40°C to 60°C
Temperature Gradient	20°C / hr. (across the range)
Temperature Shock	15°C (over 2 min.)
Wet Bulb Temperature	30°C
Relative Humidity	5% to 95% (noncondensing)
Humidity Gradient	10% / hr.
Altitude (Sea Level)	-1000 ft. to +10,000 ft.
Transit – Short Term (Packed 7 Days)	
Dry Bulb Temperature	-40°C to 60°C
Temperature Gradient	25°C / hr. (across the range)
Temperature Shock	15°C (over 2 min.)
Wet Bulb Temperature	30°C
Relative Humidity	5% to 95% (noncondensing)
Humidity Gradient	10% / hr.
Altitude (Sea Level)	-1000 ft. to +50,000 ft.

◀ A-4

Table A-8: Shock

Operating (Within Spec – No Damage)	
Peak Acceleration	1.5 G's
Duration	11ms
Wave Shape	1/2 sine pulses
Application	X,Y,Z axes, repeat 3 times
Non-Operating, with Tape Cartridges Removed (Unpacked – No Damage)	
Peak Acceleration	25 G's
Duration	11ms
Wave Shape	1/2 sine pulses
Application	X,Y,Z axes, repeat 3 times
Transit/Storage (Packed – No Damage)	
Peak Acceleration	30 G's
Duration	30ms
Wave Shape	1/2 sine pulses
Application	X,Y,Z axes, repeat 3 times
Physical Drop Test (Packed – No Damage)	
Drop Test Distance	12 in.
Application	Per ISTA (1 time)

Table A-9: Vibration

Operating (Within Spec – No Damage)	
Frequency Range	5–1000–5Hz
Peak Acceleration	0.25 G
Wave shape	Sinusoidal, 1 octave/min.
Application	X,Y,Z axes 2 sweeps per axis
Non-Operating (Unpacked – No Damage)	
Frequency Range	5–1000–5Hz
Peak Acceleration	1.0 G
Wave shape	Sinusoidal, 1 octave/min.
Application	X,Y,Z axes 2 sweeps per axis

Table A-9: Vibration(Continued)

Transit/Storage (Packed – No Damage)	
Random Vibration Test	ASTM D4728-95
Considerations	Air and Truck only

Table A-10: Power Consumption

Status	Power Consumed
Idle State	484 Watts
Average Running State	638 Watts
Peak Power	990 Watts

Table A-11: Environmental Impact

Status	Heat Produced
Idle State	1653 BTU/h (1744 KJ)
Average Running State	2179 BTU/h (2299 KJ)
Peak Power	3381 BTU/h (3567 KJ)

Table A-12: Air Flow

Status	Volume
Basic two-drive model	234.80 ft^3/min (7.04 m^3/min)
Each additional drive installed	Add 18.00 ft^3/min (0.54 m^3/min)
Each additional power supply installed	Add 50.80 ft^3/min (1.52 m^3/min)

Table A-13: Power Supply

Rating	Range
Input Voltage, Low	100-120 VAC ±10%
Input Voltage, High	200-240 VAC ±10%
NOTE: The low voltage nominal will be 110 VAC and the high voltage nominal will be 220 VAC.	
Input Frequency	47-63 Hz
AC Power Input	Two IEC320-C20 type rear-panel receptacles

FCC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Japanese Voluntary Control Council for Interference (VCCI)

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Translation

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.

Taiwan BSMI Class A Warning

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，
可能會造成射頻干擾，在這種情況下，使用者會
被要求採取某些適當的對策。

Repacking for Shipment to a New Location

Should it become necessary to transport your NEO 8000e library to another location, use the following procedure to package and secure it for shipment. If you did not save the packaging materials or they were damaged, new materials can be ordered from Overland Technical Support.

⚠ **WARNING:** Exercise care when packing and moving the NEO 8000e library. Due to its size and weight, it is recommended that at least two people be involved with the packing process.

⚠ **AVERTISSEMENT:** Soyez prudent lors du déballage et du déménagement de la bibliothèque NEO8000e. En raison de sa taille et son poids, il est recommandé qu'au moins deux personnes aident au déballage.

⚠ **CAUTION:** Before starting this procedure, be sure that all tape cartridges have been removed from the library. Verify that the Mail Slot and Media Drawers are securely latched in place.

Tools Needed

These tools that are needed to repack the library:

- 9/16-inch wrench
- 10-inch adjustable wrench
- #2 stubby or offset screwdriver
- #2 Phillips screwdriver
- Strapping material

Prepare the Library for Transport

1. **Power down** the library making sure the circuit breakers are OFF.

2. Remove all **network cabling** from the back of the library.

    Place any loose items such as SCSI terminator in a bag and tape the bag to the rear of the library.

3. Remove the library **power cables**, tie them together, and wedge them in the space next to the circuit breakers.

4. If the optional **rear door** is installed, latch it shut.

5. Using a wrench, turn **each leveling leg** until it loses contact with the floor.

6. Raise **all four legs** by hand until they are above the wheel tops.

7. Carefully move the library to the location where it will be packaged for shipment.

> ⚠ **CAUTION:** To prevent damage, **do not pull** on the media drawer handles at any time while moving the library.

8. **Position** the shipping container on a level surface so there is enough clearance to work around it (Figure B-1).

    •   Allow at least 10 ft. (3.0m) of clearance on the RAMP SIDE of the container.

    •   Allow about 3 ft. (1.0m) of clearance around the other three sides.

    •   Allow at least 8 ft. (2.5m) of vertical clearance.
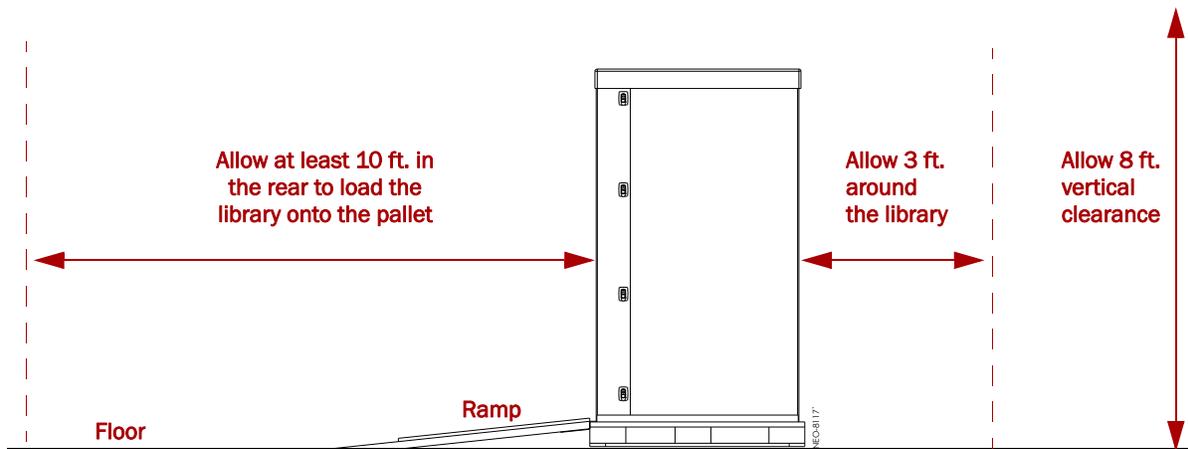
Figure B-1. Packing Space Requirements

Removing the Front Doors

Before packaging the library, remove and store the front doors in their shipping box.

1. Remove the left front door (Figure B-2) by unscrewing the three Phillips screws holding the hinges to the frame.
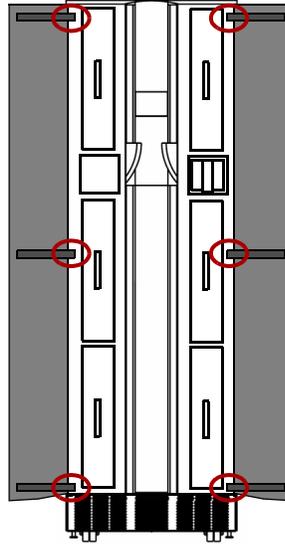
Figure B-2: Detaching the Doors

2. Repeat Step 1 for the right door.

3. Place the screws in the washer bag and tape it inside one of the door panels.

4. Place each door inside one of the retained plastic bags.

5. Secure the doors back inside the DOOR box and set it aside.

Attaching the Drawer Shipping Brackets

Using the screws in the trim pieces, attach the **six** retained drawer shipping brackets to the side trim pieces (three on each side) inside where the front doors attach (Figure B-3).
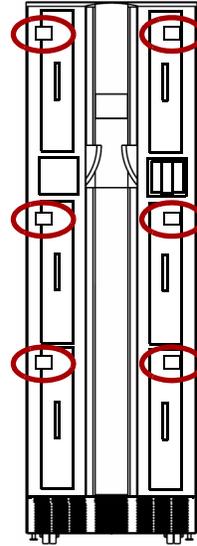
Figure B-3: Drawer Shipping Brackets

Attaching the Pallet

The first step in repackaging the library is attaching it to the pallet with hold-down brackets.

1. Position the **pallet** with the back side (labeled "RAMP SIDE") facing the front of the library.

2. Remove the **ramps** from the RAMP shipping box and lay them down, placing the brackets into the corresponding slots in the pallet (Figure B-4).
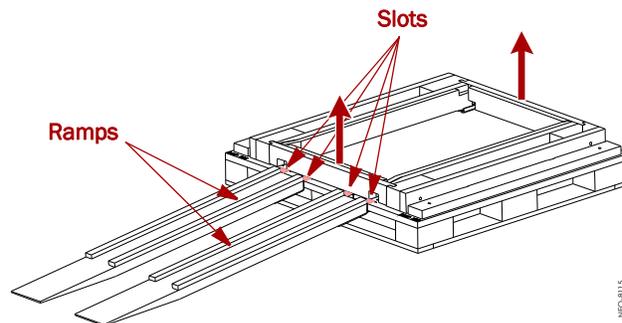
Figure B-4: Placing the Ramps in Position

3. Remove the **front and rear crossbars** from the pallet.

4. Verify that all four **leveling legs are above the wheel tops** (Figure B-5).
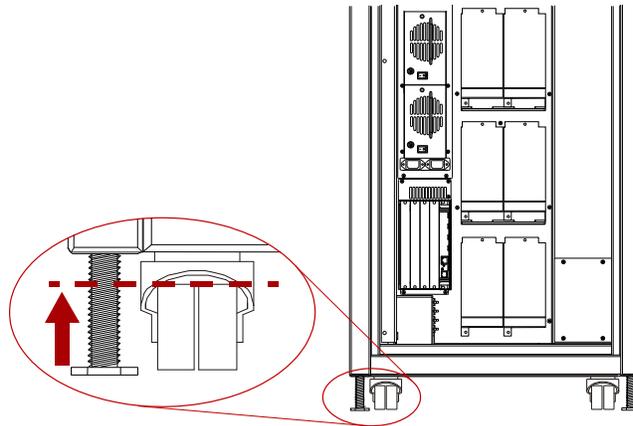
Figure B-5: NEO 8000e Casters and Leveling Legs

⚠ **WARNING:** Most of the weight of a library is in the rear of the unit. If the leveling legs are not raised high enough, they can catch at the bottom of the ramps, tipping over the library unit.

⚠ **AVERTISSEMENT:** La plupart des poids d'une bibliothèque est située à l'arrière. Si les pieds de nivellement ne sont pas élevés assez haut, ils peuvent prendre au bas de la rampe et faire basculer la bibliothèque.

5. With the front of the library facing the pallet, carefully **move the library** up the ramps and onto the pallet until the back is flush with the rear of the pallet.

⚠ **CAUTION:** To prevent damage, **do not pull** on the media drawer handles at any time while moving the library.

6. Attach the **front hardware** to hold the library on the pallet.

    a. Lower the **leveling legs** until they almost touch the pallet.

    b. Insert the **front crosspiece** into the proper slots on the pallet.

    c. Carefully roll the library forward against the **crosspiece**.

    d. Use the adjustable wrench to lower the two **leveling legs** (Figure B-5) until they are tight against the pallet.
    Lift the front crosspiece ends as needed for access.

    e. Loosely attach the two **bolts and hold-down brackets** to the front of the pallet and over the leveling leg bottoms.
    Lift the front crosspiece ends as needed for access.

    f. Use a 9/16" wrench to tighten the hold-down bracket **bolts**.
    Lift the front crosspiece ends as needed for access.

    g. Reinstall the **long Phillips screws** into the crosspiece to secure it.

7. Attach the **rear hardware** to hold the library on the pallet.

    a. Use the adjustable wrench to lower the two **leveling legs** (Figure B-5) until they are tight against the pallet.

    b. Use a 9/16" wrench to attach the two **bolts and hold-down brackets**.

    c. Attach the **rear crosspiece** (Figure B-6).

        If the optional rear door is installed, open the door, slide the left end of the crosspiece into its recess, and lower the right end of the crosspiece into its slot. Secure and lock the rear door when done.
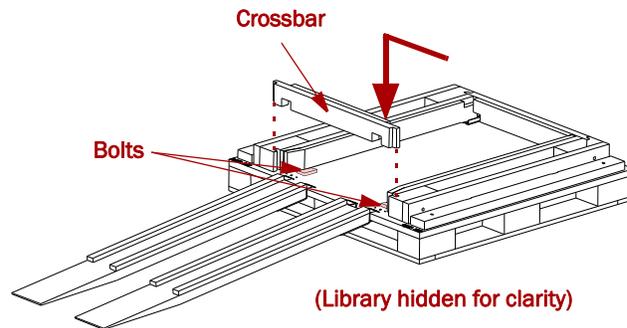
Figure B-6: Removing the Rear Crosspiece

    d. Reinstall the **long Phillips screws** into the crosspiece to secure it.

8. Remove the ramps and secure them in the RAMP shipping box.

Attaching the Outer Carton

Once the NEO 8000e is secured to the pallet, the outer packaging can be added.

1. Add the inner packaging (Figure B-7).

Top Spacers

RAMP Box

DOOR Box

(Library hidden for clarity)

Front
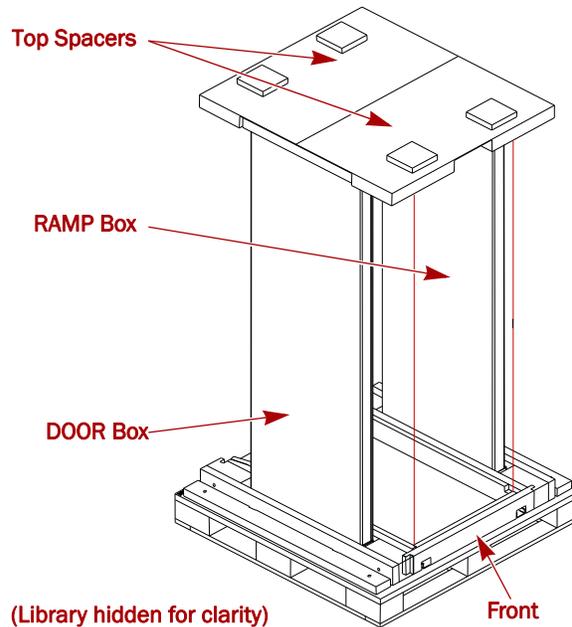
Figure B-7: RAMP and DOOR Box Locations

a. Cover the library with the retained **plastic sheet**.

b. Insert the **RAMP and DOOR boxes** into the pallet slots (one on each side of the library).

c. Add the two (2) **top spacers** onto the library to secure the side boxes.

2. Add the outside packaging (Figure B-8).
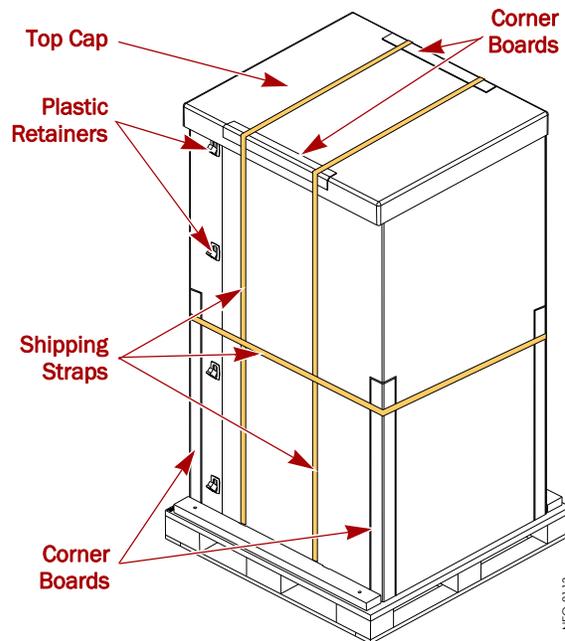
Figure B-8: Library Packaging Components

    a. Position the two (2) large pieces of **cardboard** around the library.

       The long sides of the pieces go along the two sides of library between the library and the wood braces.

    b. Insert and latch each of the **plastic retainers** (on opposite corners).

    c. Add the **top cap**.

    d. Position the two (2) short **reinforcing corners** on the sides of the top cap.

3. Vertically wrap the front part of the box with **strapping material.**

    a. Insert the strapping material into the **front left hole** in the pallet.

    b. Run the strap **under the pallet** to the other side.

    c. Pull the strap out the **front right hole**.

    d. Loop the strap over the top cap and reinforcing corners back to the other side.

    e. Connect and tighten the strap.

4. Repeat Step 3 for the rear vertical strap.

5. Position the four (4) long **reinforcing corners** at each corner of the box (Figure B-8).

6. Horizontally wrap the container with **strapping material** about 6" (15 cm) below the tops of the reinforcing corners.

The NEO 8000e library is now ready to ship.

Master Glossary & Acronym List

NOTE: This is a general Overland Storage glossary and acronym list. Not all items may be found in this document or be used by this product.

1000BASE-T

1000BASE-T (also known as IEEE 802.3ab) is a standard for gigabit Ethernet over copper wiring. It requires, at a minimum, Category 5 cable (the same as 100BASE-TX), but Category 5e (Category 5 enhanced) and Category 6 cable may also be used and are often recommended. 1000BASE-T requires all four pairs to be present and is far less tolerant of poorly installed wiring than 100BASE-TX.

Address

An address is a data structure or logical convention used to identify a unique entity, such as a particular process or network device.

ADI

Short for *Automation Drive Interface*. Media changer (automation) devices use a private communication link for monitoring and controlling removable medium devices (drives). The standard specifies a protocol for transporting commands, data, and status between automation devices and the drives.

ATA

Short for *Advanced Technology Attachment*. A standard interface for connecting storage devices to a PC.

Auto Balance

A feature that automatically balances preferred paths evenly among all available host ports and controller ports. Auto balancing spreads I/O load by utilizing as many host ports and controller ports as possible.

Back-end

Front-end and back-end are terms used to characterize program interfaces and services relative to the initial user, human or program, of these interfaces and services. A "front-end" application is one that application users interact with directly. A "back-end" application or program serves indirectly in support of the front-end services, usually by being closer to the required resource or having the capability to communicate with the required resource. The back-end application

may interact directly with the front-end or, perhaps more typically, is a program called from an intermediate program that mediates front-end and back-end activities.

Bar Code

The machine-readable representation of a product code. Bar codes are read by a scanner that passes over the code and registers the product code. The width of black lines and white spaces between varies. Combinations of lines and spaces represent characters. Overland uses 3-of-9 code (Code 39) where each character is represented by 9 bars, 3 of which are wide.

Bridging

Devices that connect and pass packets between two network segments that use different communications protocol.

Bus or Channel

A common physical path composed of wires or other media, across which signals are sent from one part of a computer to another. A channel is a means of transferring data between modules and adapters, or between an adapter and SCSI devices. A channel topology network consists of a single cable trunk that connects one workstation to the next in a daisy-chain configuration. All nodes share the same medium, and only one node can broadcast messages at a time.

CA

Short for *Certificate Authority*. A trusted third-party in a network that issues and manages security credentials.

Cat 5 Cable

Short for *Category 5*, it is network cabling that consists of four twisted pairs of copper wire terminated by 8P8C modular connectors. CAT 5 cabling supports frequencies up to 100 MHz and speeds up to 100 Mbps. It can be used for ATM, token ring, 100BASE-T, and 10BASE-T networking.

Cat 5 is based on the EIA/TIA 568 Commercial Building Telecommunications Wiring Standard developed by the Electronics Industries Association as requested by the Computer Communications Industry Association in 1985.

Cat 6 Cable

Short for *Category 6*, it is network cabling that consists of four twisted pairs of copper wire terminated by 8P8C modular connectors made to higher standards that help reduce noise caused by crosstalk and system noise. The ANSI/TIA-568-B.2-1 specification states the cable may be made with 22 to 24 AWG gauge wire, so long as the cable meets the specified testing standards.

It is designed for Gigabit Ethernet that is backward compatible with the Category 5/5e and Category 3 cable standards. Cat 6 features more stringent specifications for crosstalk and system noise. The cable standard provides performance of up to 250 MHz and is suitable for 10BASE-T / 100BASE-TX and 1000BASE-T (Gigabit Ethernet).

DHCP

Short for *Dynamic Host Configuration Protocol*. A mechanism for assigning unique IP addresses to network nodes.

Disk Roaming

This is the process of removing a disk drive from a controller and putting it back later, either on the same controller, or a different one, and having it recognized as the same disk drive. The disks may be can be attached to different ports than they were originally attached to, without harm to the data. The disks may be attached to the same ports or different ports on the controller.

DNS

Short for *Domain Name Service*. A network service that translates domain names into IP addresses.

DSM

Short for *Device Specific Module*, it is a software module that allows RAID storage array hardware to use Microsoft's MPIO.

Expansion Slot

Area in a computer that accepts additional input/output boards to increase the capability of the computer.

F_port

A *Fabric* port within a Fibre Channel switch that provides a point-to-point link attachment to a single N_Port. F_Ports are intermediate ports in virtual point-to-point links between end ports, for example N_Port to F_Port to F_Port to N_Port using a single Fibre Channel fabric switch.

Failback

Failback occurs when a path with a higher priority than the currently active path is restored. In this case, I/O will "fail back" to the higher priority path once it is available again.

Failover

The ability to automatically substitute a working system or path for one which has failed.

Failover/Failback

A combination of Failover and Failback. When a preferred path becomes unavailable, another path is used to route I/O until the preferred path is restored. In this case I/O will "fail back" to the preferred path once it is available again.

FC-AL

Short for *Fibre Channel Arbitrated Loop*. An FC-AL is a Fibre Channel network in which up to 126 systems and devices are connected in a loop topology, with each transmitter connecting to the receiver of the device on its logical right. The Fibre Channel Arbitrated Loop protocol used for transmission is different from Fibre Channel switched and point-to-point protocols. Multiple FC-AL loops can be connected via a fabric switch to extend the network.

Fibre Channel

Fibre Channel (FC) is a gigabit-speed network technology which transports SCSI commands over Fibre Channel networks. Fibre Channel was primarily concerned with simplifying the connections and increasing distances, but later designers added the goals of connecting SCSI disk storage, providing higher speeds and far greater numbers of connected devices.

Firmware

Software stored in read-only memory (ROM) or programmable ROM (PROM). Firmware is often responsible for the behavior of a system when it is first switched on.

FL_port

A *Fabric Loop* port within a Fibre Channel switch that is capable of Fibre Channel Arbitrated Loop operations and is connected to one or more NL_Ports via a Fibre Channel Arbitrated Loop. An FL_Port becomes a shared entry point for public NL_Port devices to a Fibre Channel fabric. FL_Ports are intermediate ports in virtual point-to-point links between end ports that do not reside on the same loop, for example NL_Port to FL_Port to F_Port to N_Port through a single Fibre Channel fabric switch.

Front-end

See Back-end.

Gigabit Ethernet

Also known as GigE or GbE, this Ethernet standard uses a one Gigahertz (1000 Hz) clock rate to move data.

HBA

Short for *Host Bus Adapter*. An HBA is an I/O adapter that sits between the host computer's bus and the Fibre Channel loop and manages the transfer of information between the two channels. In order to minimize the impact on host processor performance, the HBA performs many low-level interface functions automatically or with minimal processor involvement.

Hot Swap

The action of components being removed and replaced while the unit is running, with power to either the component or a device still connected to the unit. Not all components are hot swappable. Please read installation and maintenance instructions carefully.

IDE

Short for *Integrated Drive Electronics*. A standard interface for connecting storage devices to a PC

I/E Element

A configurable import/export slot or magazine to provide a means of exchanging tape media while the unit is still operating.

Internet

A global network of networks used to exchange information using the TCP/IP protocol. It allows for electronic mail and the accessing ad retrieval of information from remote sources.

Initiator Device

A system component that originates an I/O command over an I/O bus or network. An initiator issues the commands; a *target* receives them.

An initiator normally runs on a host computer. It may be either a software driver or a hardware plug-in card, often called a Host Bus Adapter (HBA). A software initiator uses one of the computer's Ethernet ports for its physical connection, whereas the HBA will have its own dedicated port.

Software initiators are readily available for most host operating systems. Hardware initiators are not widely used, although they may be useful in very high performance applications or if 10 Gigabit Ethernet support is required.

IP

Short for *Internet Protocol*. IP specifies the format of packets and the addressing scheme.

IQN

Short for *iSCSI Qualified Name*. A name format used in the iSCSI protocol.

Initiators and targets have IP addresses, just like any other network entity. They are also identified using an iSCSI name, called the iSCSI Qualified Name (IQN). The IQN should be unique world-wide. It is made up of a number of components, specifying the date, identifying the vendor in reverse format, and then uniquely identifying the initiator or target. An example of an IQN is:

```
iqn.2001-04.com.example:storage:diskarray-sn-123456789
```

Since these IQNs are rather unwieldy, initiators and targets also use short, user friendly names (sometimes called alias names or just aliases).

iSCSI

Short for *Internet SCSI*. iSCSI is an IP-based storage networking standard for linking data storage facilities, developed by the Internet Engineering Task Force (IETF). By carrying SCSI commands over IP networks, iSCSI is used to facilitate data transfers over intranets and to manage storage over long distances. The iSCSI protocol is among the key technologies expected to help bring about rapid development of the storage area network (SAN) market, by increasing the capabilities and performance of storage data transmission. Because of the ubiquity of IP networks, iSCSI can be used to transmit data over local area networks (LANs), wide area networks (WANs), or the Internet and can enable location-independent data storage and retrieval.

iSNS Server

Short for *Internet Storage Name Service* Server. A protocol enabling the automatic discovery, configuration, and management of iSCSI devices on a TCP/IP network.

LAN

Short for *Local Area Network*. A network connecting computers in a relatively small area such as a building.

LED

> Short for *Light-Emitting Diode*. An LED is a type of diode that emits light when current passes through it. Visible LEDs are used as indicator lights on electronic devices.

LTO

> Short for *Linear Tape-Open*, a technology that was developed jointly by HP, IBM, and Certance (Seagate) as an open standards. It is ideally suited for backup, restore, and archive applications, and provides reliability in both stand-alone and automated environments. The tape cartridges go by the label "Ultrium."
>
> - Ultrium generation 3 (LTO-3) cartridge – up to 800 GB capacity (2:1 compression) and an uncompressed transfer rate of 80 MB/s.
> - Ultrium generation 4 (LTO-4) cartridge – up to 1.6 TB capacity (2:1 compression) and an uncompressed transfer rate of 120 MB/s.
> - Ultrium generation 5 (LTO-5) cartridge – up to 3.0 TB capacity (2:1 compression) and an uncompressed transfer rate of 140 MB/s.

LUN

> Short for *Logical Unit Number*. A SCSI or Fibre Channel device identifier. LUN is a subdivision of a SCSI target.

LVD

> Short for *Low Voltage Differential*. LVD is a method of powering SCSI cables that will be formalized in the SCSI-3 specifications. LVD uses less power than the current differential drive (HVD), is less expensive, and allows for higher speeds such as those of Ultra-2 SCSI. LVD requires 3.3 volts (versus 5 volts for HVD).

MAC Address

> Short for *Media Access Control address*, a hardware address that uniquely identifies each node of a network.

Mail Slot

> See I/E Element.

Mapping table

> A table indexed by sequential LUN values, indicating the selected BUS:TARGET:LUN devices. Mapping tables are used by routers and bridges like the GEOi to perform Ethernet-to-SCSI pathing.

MD5 Algorithm

> MD5 is a way to verify data integrity, and is much more reliable than checksum and many other commonly used methods.

MPIO

> Short for *Multipath Input/Output*. A multipath solution built into Microsoft server-grade operating systems. It requires the DSM to work with RAID storage array hardware.

MTU

Short for *Maximum Transfer Unit*. It is the largest size packet or frame, specified in octets (eight-bit bytes), that can be sent in a packet- or frame-based network.

N_port

A *Node* port connects via a point-to-point link to either a single N_Port or a single F_Port. N_Ports handle creation, detection, and flow of message units to and from the connected systems. N_Ports are end ports in virtual point-to-point links through a fabric, for example N_Port to F_Port to F_Port to N_Port using a single Fibre Channel fabric switch.

NAS

Short for *Network Attached Storage*. Data storage connected to a network that provides network clients access to data using file-level protocols.

NAT

Short for *Network Address Translation*. A technique for passing network traffic through a router whereby one set of IP addresses is used on one side of the router and another set of addresses is used on the other side. This is done to avoid address conflicts and to increase the address space of the internal network.

Network Interface Card (NIC)

A board that provides network communication capabilities to and from a computer.

NDMP

Short for *Network Data Management Protocol*. A protocol standard used by some Network Attached Storage systems to provide an industry standard means to do backup and restores of the NAS system without the need for 3rd party agents to be installed on the NAS device. Also see NDMP.org for further details.

NL_port

A *Node Loop* port is capable of arbitrated loop functions and protocols. An NL_Port connects via an arbitrated loop to other NL_Port and at most a single FL_Port. NL_Ports handle creation, detection, and flow of message units to and from the connected systems. NL_Ports are end ports in virtual point-to-point links through a fabric, for example NL_Port to F_Port to F_Port to N_Port using a single Fibre Channel fabric switch. In the absence of a fabric switch FL_Port, NL_Ports can communicate with other NL_Ports in virtual point-to-point links through a FC-AL open loop circuit often through FC-AL (Arbitrated Loop) hub or loop switch devices.

Node Name

This is an eight-byte, 16-character hexadecimal number, uniquely identifying a single fibre device. It incorporates the World Wide Name and two additional bytes that are used to specify the format. In a host system with multiple FC ports, all adapters typically use the same Node Name, but unique Port Names.

NTFS

Short for *New Technology File System*. The standard file system used by Windows NT and later versions of the Windows operating system.

NTP

Short for *Network Time Protocol*. A protocol for synchronizing the system clocks of computers over a packet-switched network.

NVRAM

Abbreviation of *Non-Volatile Random Access Memory*, a type of memory that retains its contents when power is turned off.

OCP

Short for *Operator Control Panel*. The OCP touch screen is a 2.5" x 1.25" (6.4cm x 3.2cm) pressure-sensitive blue and light-gray screen that provides an easy way to directly communicate with the unit. It provides text and graphic messages and, through the use of virtual buttons and sliders, allows users to make changes to current settings.

Port Name

This is an eight-byte hexadecimal number, uniquely identifying a single host HBA port. It incorporates the World Wide Name and two additional bytes that are used to specify the format and indicate the port number.

Portal

A target's IP address together with its TCP port number.

Preferred Path

The preferred path is the default path. When the path selection policy is set to Failover/Failback, the preferred path is always used if it is available. If the preferred path fails, I/O switches to another path. If it is later restored, I/O switches back to the preferred path.

PTP

Short for *Point-to-Point*. PTP is the common mode of attachment to a single host. PTP is sometimes used to attach to a Fibre Channel switch for SAN connectivity.

RETMA

Short for *Radio-Electronics-Television Manufacturers' Association*. It is the common name given for a 19-inch distribution frame rack for mounting components.

RMU

Short for *Remote Management Utility*. It is an interface built into the unit that provides remote access to and configuration of the library through an Ethernet port. It hosts a dedicated, protected web site that can be accessed by a web browser using the IP address assigned.

Round Robin

The Round Robin path selection policy causes all healthy paths to be used for I/O. Paths are used in a round-robin order.

Router

A router is a device that enables connectivity between Ethernet network segments.

SAN

Short for *Storage Area Network*. Data storage connected to a network that provides network clients access to data using block level protocols. To the clients, the data storage devices appear local rather than remote. An iSCSI SAN is sometimes referred to as an IP-SAN.

SAS

Short for *Serial Attached SCSI*. It is a point-to-point serial protocol that replaces parallel SCSI bus technology (multidrop) and uses the standard SCSI command set. It has no termination issues, supports up to 16,384 devices (using expanders), and eliminates clock skew. It consists of an Initiator that originates device service requests, a Target containing logical units that receives device service requests, and a Service Delivery Subsystem that transmits information between the Initiator and the Target.

SCSI

Short for *Small Computer System Interface*. SCSI is an industry standard for connecting peripheral devices and their controllers to an initiator. Storage devices are daisy-chained together and connected to a host adapter. The host adapter provides a shared bus that attached peripherals use to pass data to and from the host system. Examples of devices attached to the adapter include disk drives, CD-ROM discs, optical disks, and tape drives. In theory, any SCSI device can be plugged into any SCSI controller.

SCSI addressing

Each device supported by a SCSI adapter has its own unique SCSI address, which dictates the device's priority when arbitrating for access to the SCSI bus. A SCSI address of 7 has the highest priority. For a fast/wide SCSI adapter that supports up to 16 devices, the next highest priority address is 6, then 5, 4, 3, 2, 1, 0, 15, 14, 13, 12, 11, 10, 9, and 8. The narrow SCSI adapter supports up to eight devices, including itself. The SCSI address 7 has the highest priority, followed by 6, 5, 4, 3, 2, 1, and 0.

SCSI bus

A SCSI bus provides a means of transferring data between SCSI devices. A SCSI bus is either an 8- or 16-bit bus that supports up to 8 or 16 devices, including itself. The bus can consist of any mix of initiators and targets, with the requirement that at least one initiator and one target must be present.

SCSI device

A SCSI device is a single unit on a SCSI bus that originates or services SCSI commands. A SCSI device is identified by a unique SCSI address. SCSI devices can act as initiators or targets.

SCSI port

A SCSI port is an opening at the back of a router that provides connection between the SCSI adapter and SCSI bus.

Session

> When an initiator wants to establish a connection with a target, it establishes what is known as an iSCSI session. A session consists of one or more TCP/IP connections between an initiator and a target. Sessions are normally established (or re-established) automatically when the host computer starts up, although they also can be established (and broken) manually.

SMS

> Short for *Short Message Service*. Is a means of sending short text messages to a mobile phone.

SMTP

> Short for *Simple Mail Transfer Protocol*. A TCP/IP protocol used for sending and receiving email.

SSL

> Short for *Secure Sockets Layer*. A protocol for managing the security of a message sent on the Internet.

Storage Area Network

> See SAN.

Tape Cartridge

> A magnetically coated strip of plastic in a plastic housing on which data can be encoded. Storing data on tapes is considerably cheaper than storing data on disks. Tapes also have large storage capacities, ranging from a few hundred kilobytes to several gigabytes. They are generally used for long-term storage and backup, or for transporting large amounts of data. Tapes come in a variety of sizes and formats.

Tape Drive

> A device, that reads data from and writes it onto a tape.

Target

> A target is a device (peripheral) that responds to an operation requested by an initiator (host system). Although peripherals are generally targets, a peripheral may be required to act temporarily as an initiator for some commands (for example, SCSI COPY command).

> Targets are embedded in iSCSI storage controllers. They are the software that makes the RAID storage available to host computers, making it appear just like any other sort of disk drive.

TCP/IP

> Short for *Transmission Control Protocol/Internet Protocol*. The basic protocol used for data transmission over the Internet.

Telco

> Short for *Telephone Company*. When used in reference to a rack, it refers to the two-posted, light-weight rack for center-mounted appliances.

Telnet

A terminal emulation program for TCP/IP networks such as the Internet. The Telnet program runs on a computer and connects it to a server on the network. You enter commands through the Telnet program and they will be executed as if you were entering them directly on the server console. This enables you to control the server and communicate with other servers on the network. To start a Telnet session, you must log in to a server by entering a valid user name and password. Telnet is a common way to remotely control Web servers.

Terminator

A terminator refers to the electrical connection at each end of a SCSI bus. The terminator is composed of a set of resisters, or possibly other components. The function of a terminator is to provide a pull-up for open collector drivers on the bus, and also impedance matching to prevent signal reflections at the ends of the cable. SCSI buses require that a terminator be placed on the SCSI connector on the last SCSI peripheral. Data errors may occur in a SCSI bus that is not terminated.

TOE (TCP Offload Engine)

Short for *TCP Offload Engine*. TOE is a technology used in network interface cards to offload processing of the entire TCP/IP stack to the network controller. It is primarily used with high-speed network interfaces, such as gigabit Ethernet and 10 gigabit Ethernet, where processing overhead of the network stack becomes significant.

Topology

Logical layout of the parts of a computer system or network and their interconnections. There are two types of topology: physical and logical. The physical topology of a network refers to the configuration of cables, computers, and other peripherals. Logical topology is the method used to pass the information between workstations.

UDP

Short for *User Datagram Protocol*. A communications protocol for sending messages between computers in a network that uses the Internet Protocol (IP). UDP is an alternative to the Transmission Control Protocol but, unlike TCP, does not guarantee reliability or ordering of data packets.

USB (Universal Serial Bus) Port

A hardware interface for low-speed peripherals such as the keyboard, mouse, joystick, scanner, printer, and telephony devices.

VLAN

Short for *Virtual LAN*. It consists of a network of computers that behave as if they are connected to the same wire - even though they may actually be physically connected to different segments of a LAN.

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