



Changing The World of Storage

Spectra nTier500

Upgrading Memory



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Part Number

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Revision History

Revision	Date	Description
A	May 2011	Initial release for nTier500

Contacting Spectra Logic

To obtain general information

Spectra Logic Web Site: www.spectralogic.com

United States Headquarters

Spectra Logic Corporation
6285 Lookout Road
Boulder, CO 80301
USA

Phone: 1.800.833.1132 or 1.303.449.6400

International: 1.303.449.6400

Fax: 1.303.939.8844

European Office

Spectra Logic Europe Ltd.
Magdalen Centre
Robert Robinson Avenue
Oxford Science Park
OXFORD

OX4 4GA

United Kingdom

Phone: 44 (0) 870.112.2150

Fax: 44 (0) 870.112.2175

Spectra Logic Technical Support

Technical Support Portal: support.spectralogic.com

United States and Canada

Phone:

Toll free US and Canada: 1.800.227.4637

International: 1.303.449.0160

Email: support@spectralogic.com

Europe, Middle East, Africa

Phone: 44 (0) 870.112.2185

Email: support@spectralogic.com

Deutsch sprechende Kunden

Phone: 49 (0) 6028.9796.507

Email: spectralogic@stortrec.de

Mexico, Central and South America, Asia, Australia, and New Zealand

Phone: 1.303.449.0160

Email: support@spectralogic.com

Spectra Logic Sales

Web Site: www.spectralogic.com/shop

United States and Canada

Phone: 1.800.833.1132 or 1.303.449.6400

Fax: 1.303.939.8844

Email: sales@spectralogic.com

Europe

Phone: 44 (0) 870.112.2150

Fax: 44 (0) 870.112.2175

Email: eurosales@spectralogic.com

To Obtain Documentation

Spectra Logic Web Site: www.spectralogic.com/documents

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Upgrading Memory

These instructions describe upgrading the memory in the Spectra® nTier500™ Backup and Archive appliance or the nTier500 V160 Deduplication appliance. These instructions refer to both appliances as the *nTier500*. The base memory in the nTier500 is 8 GB. The base memory can be upgraded to either 16 GB or 32 GB using 4 GB DIMMS (memory modules).

- Notes:**
- The memory upgrade is only applicable to nTier500 Backup and Archive appliances using the 64-bit Windows operating system. The maximum memory for a 32-bit Windows operating system appliance is 4GB.
 - The memory upgrade kit contains two 4 GB memory modules. The memory upgrade may require multiple memory upgrade kits.
 - If your nTier500 contains memory modules smaller than 4 GB (for example, 1 GB or 2 GB), you must replace all of the existing modules with 4 GB memory modules when you upgrade. Mixed memory modules and total memory amounts other than 8, 16, or 32 GB are not supported.

IF YOU NEED ASSISTANCE

If you need assistance with any part of this procedure, contact Spectra Logic Technical Support (see [Contacting Spectra Logic on page 3](#)).

BEFORE YOU BEGIN...

Before beginning this replacement procedure, make sure that you address the requirements in the following sections.

Estimated Time Required

Installing the memory modules takes about 30 minutes. You must shut down and power off the nTier500 before starting the replacement procedure.

Materials and Tools

Obtain the following:

- Memory upgrade kit from Spectra Logic
- Tools and equipment:

Required

- #2 Phillips screwdriver, magnetic if available
- Keys for the locks on the front cover, if installed
- A grounded static protection wristband

Recommended

An anti-static mat

Prepare the Work Area

- **Ensure that the environment is free of conditions that could cause electrostatic discharge (ESD)** — If possible, use an anti-static mat and a grounded static protection wristband during installation. If a mat and wristband are not available, touch a known grounded surface, such as the nTier500's metal chassis.
- Put on the anti-static wristband and ground the strip. Leave the wristband on throughout the replacement procedure.

Shut Down the nTier500 Appliance

The shut down method you use depends on whether you have an nTier500 Backup and Archive appliance or an nTier500 Deduplication appliance.

- [nTier500 Backup and Archive Appliance](#) on this page.
- [nTier500 Deduplication Appliance](#) on page 7.

nTier500 Backup and Archive Appliance

Use the following steps to access the Windows desktop and shut down the system. Refer to the *Spectra nTier500 Backup and Archive Appliance User Guide* for detailed instructions.

1. Use your application software to stop all data transfer to and from the nTier500.
2. Connect to the Windows desktop either using a keyboard and mouse connected to the nTier500 or through the Remote Desktop application on another Windows-based computer on an active network that has access to the nTier500.

3. From the Windows **Start** menu, select **Shut Down** and then select **Shut down** to save the current Windows configuration, stop the Windows operating system, and power off the system.

When prompted for a reason for the shutdown, select an appropriate option. If desired, enter additional information in the Comment box, then click **OK** to exit Windows and shut down the server.

4. Wait until the server completes its power-down sequence and the blue LED on the power button turns off.

nTier500 Deduplication Appliance

Use the following steps to shut down the system using the VTL Console. Refer to the *Spectra nTier500 Deduplication Appliance User Guide* for detailed instructions.

1. Use your application software to stop all data transfer to and from the nTier500.



Caution

Restarting or shutting down the VTL server will detach all virtual devices, breaking the connection from the client backup servers to their virtual tape resources. To avoid data loss, stop all I/O to the virtual libraries and tapes before restarting or shutting down the nTier500.

2. Launch the VTL Console if it is not already running and connect the nTier500. The default user name is **root**, the default password is **spectra**.
3. Right-click on the hostname for the nTier500 in the navigation tree of the VTL Console to display the context menu of options.

The default hostname is Spectra-VTL-xxxxxxx, where xxxxxxx is the unique identifier for the nTier500.
4. Select **Server Maintenance** ...**Halt** to stop the VTL and initiate the server shutdown process.
5. Wait for approximately two minutes for the VTL Console to stop the operating system. Then, use a stylus or other similar non-conductive object to press and hold the front panel power button until the button's LED turns off.

Disconnect the Cables

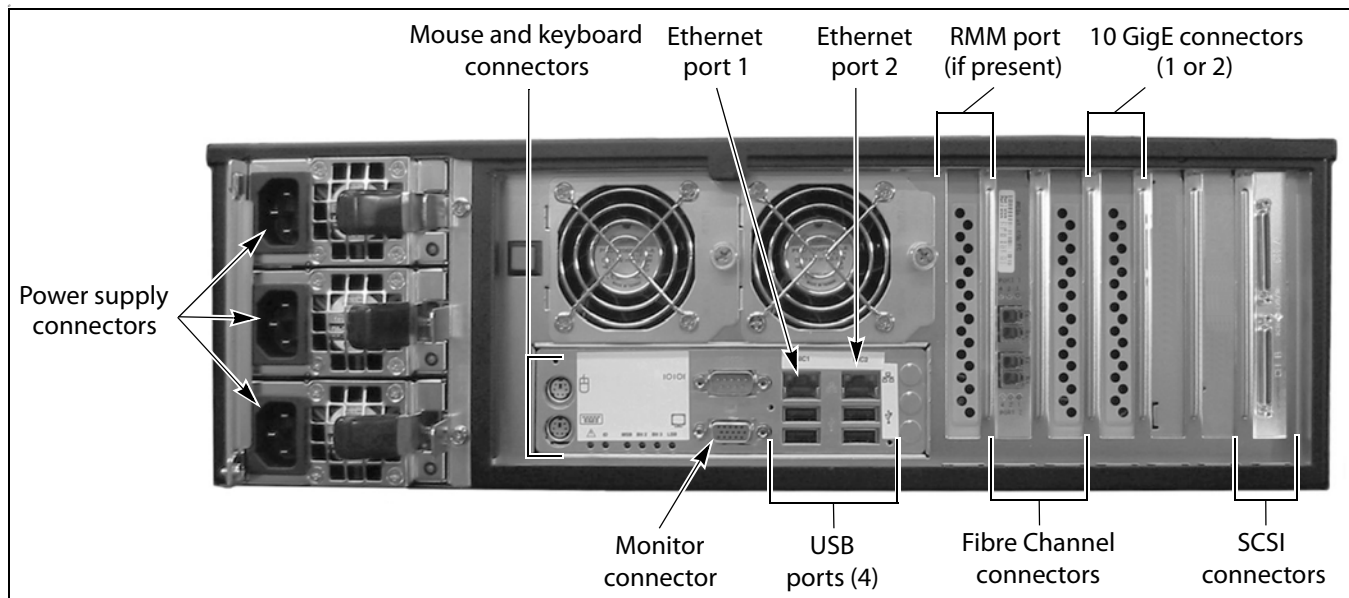


Figure 1 Disconnect the cables from the back panel.

1. Disconnect the power cords from each of the three power supply connectors on the back panel.
2. Disconnect the cables from their respective connectors on the back panel.
 - Notes:**
 - The types of interface connectors present depend on your configuration.
 - To simplify reconnecting the cables to the correct locations, label each cable before disconnecting it.

Remove the Front Cover

1. If the front cover is installed, insert a key into the lock on each side of the cover. Turn both keys until they are in the vertical position to unlock the cover.
2. Carefully pull the cover straight out from the chassis to remove it. Set the cover aside.

Remove the nTier500 from the Rack

1. Use a #2 Phillips screwdriver to remove the two screws securing each side of the chassis to the rack. Set the screws aside.

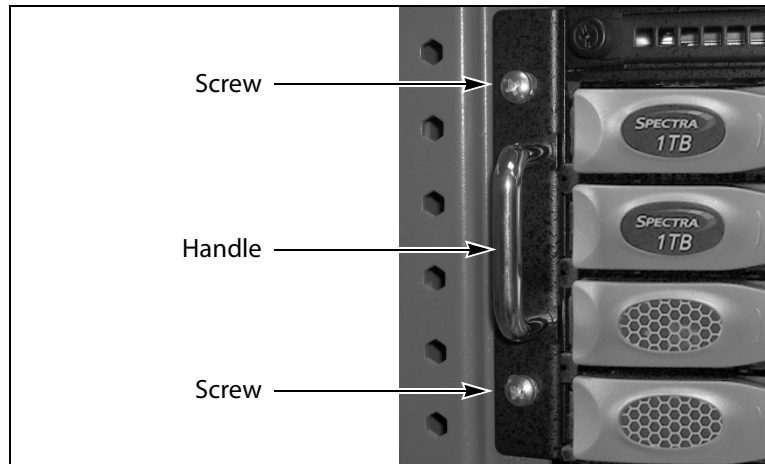


Figure 2 Remove the chassis from the rack (left side shown).

2. Grasp the handles on each side of the chassis and slide it out of the rack until it reaches the stops.



Warning

The nTier500 is very heavy, especially with drives installed. Always use two people, one on each side, when lifting or moving it. Most of the weight is toward the front.

Warnung: Die nTier500 ist sehr schwer, vor allem mit Laufwerken installiert werden. Benutzen Sie immer zwei Personen, eine auf jeder Seite, beim Heben oder Fortbewegen. Die meisten des Gewichts ist nach vorne.

3. To release the rail safety latches, press downward on the left latch and upward on the right latch. Slide the chassis completely out of the rack.

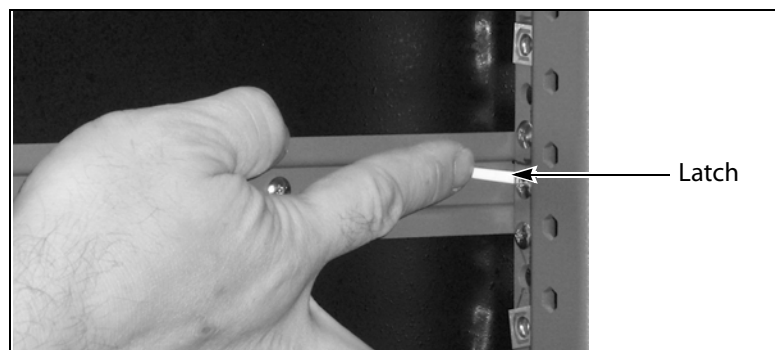


Figure 3 Release the safety latch.

4. Place the chassis on a sturdy table where you will have easy access to the top cover and internal components.

Remove the Chassis Cover

1. Use a #2 Phillips screwdriver to remove the single screw that secures the cover to each side of the chassis. The screws are located toward the front of the chassis.

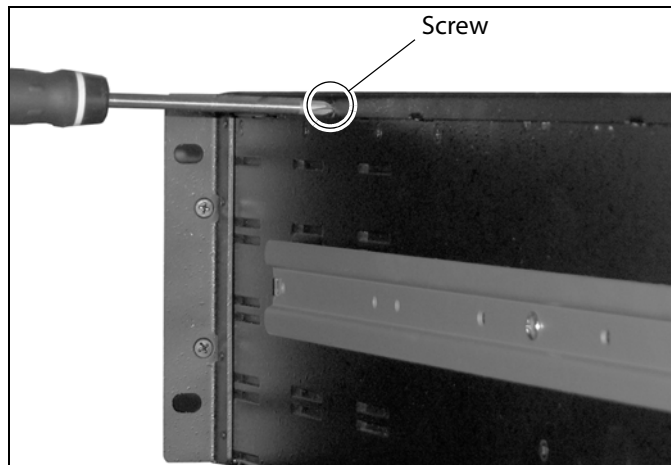


Figure 4 Remove the screws securing the top cover to the chassis.

2. Slide the cover toward the back of the chassis to disengage the locking tabs.
3. Lift the cover up and off the chassis and set it aside.

INSTALLING OR REPLACING THE MEMORY MODULES

1. Examine the interior of the nTier500 to identify the eight connectors for the memory modules. The connectors are on the right side of the motherboard when viewed from the front of the chassis.

Note: The connectors alternate blue and black.

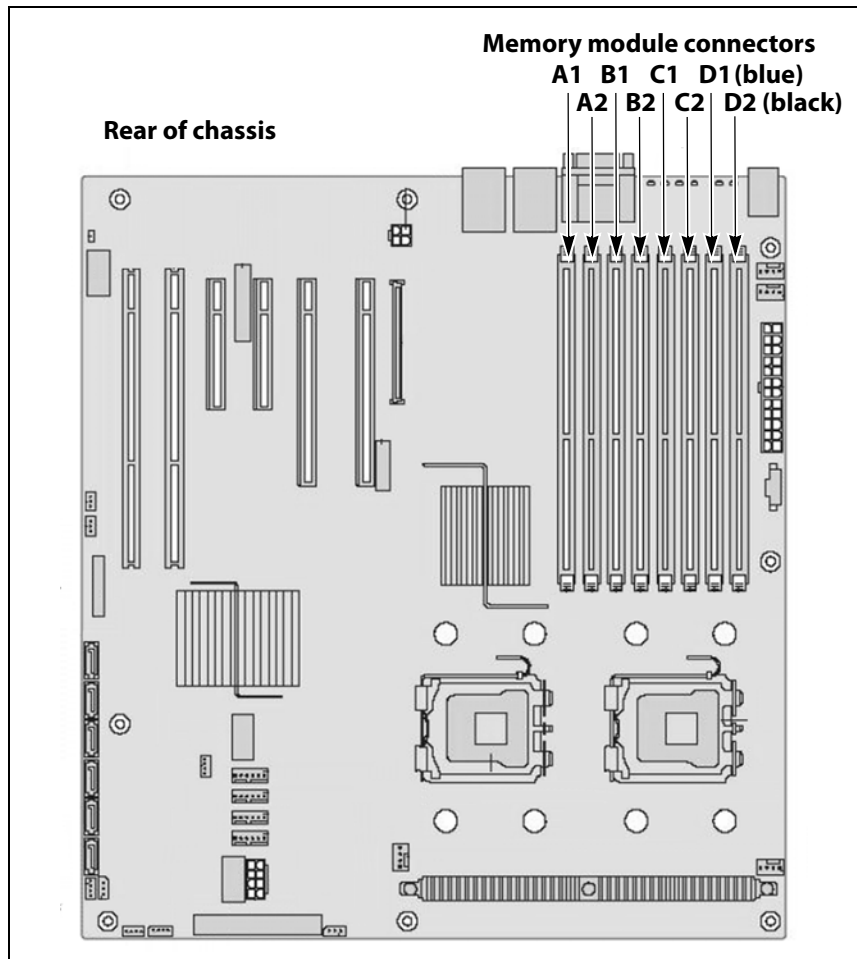


Figure 5 Memory module connectors in the nTier500.

2. Connect an anti-static wristband to an unpainted metallic surface such as the chassis.



Caution

The memory modules are extremely sensitive to electrostatic discharge and can be permanently damaged if improperly handled.

3. If the existing memory in the nTier500 does not use 4 GB memory modules, you must remove all of the existing memory modules before installing the memory upgrade. If only 4 GB memory modules are installed, skip to [Step 4 on page 12](#).
 - a. For each module, locate the white release tabs on each side of the memory module and press them down and outward to extract the memory module from its connector.

**Caution**

Do not use metallic objects to press on the release tabs or extract the memory modules.

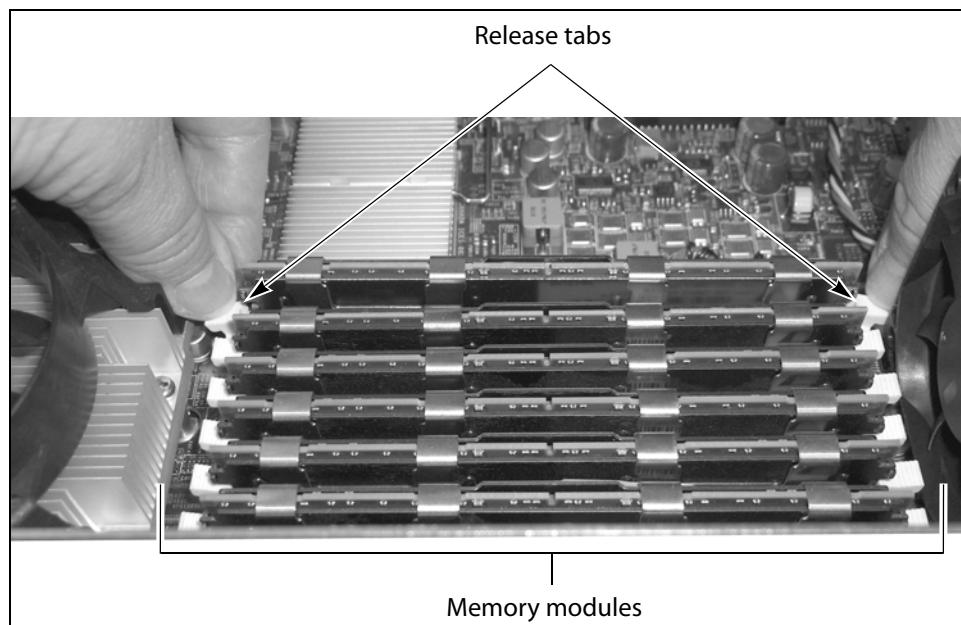


Figure 6 Removing a memory module.

- b. Touching only the edges, lift the memory module out of the nTier500 and place it in an anti-static bag.

**Caution**

Avoid touching the circuitry or the components on the memory module card.

- c. Repeat [Step a](#) and [Step b](#) to remove all of the existing memory modules.
4. Memory modules must be populated in the order A1, B1, C1, and D1, then A2, B2, C2, and D2 (see [Figure 5 on page 11](#)). Touching only the edges of the new memory module, align the new module with the empty connector.

Note: The edge connector on the memory module is keyed and only fits into the slot one way. Do not force the module into the slot.
5. Press down firmly on the top edge of the memory module to seat it into the connector.

When the module is correctly seated, the white release tabs on each side of the connector lock into the notches in each end of the memory module.

6. Repeat [Step 4](#) through [Step 5](#) to install the remaining memory modules.

COMPLETING THE PROCEDURE

After you install the memory modules, complete the procedure as described in the following sections.

Replace the Chassis Cover

1. Align the five tabs on the **bottom edges of the cover** with the corresponding slots in the top edge of the chassis. Fit the tabs into the slots.
2. With one hand pressing down on the front edge of the cover, use the other hand to push the cover forward until the forward edge fits under the lip on the front of the chassis.

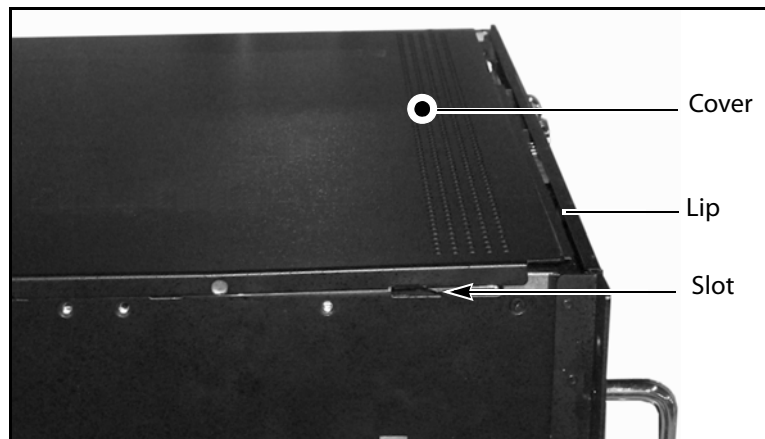


Figure 7 Push the chassis cover forward.

3. Use a #2 Phillips screwdriver to install the single screw on each side of the cover to secure the cover to the chassis. The screws are located toward the front of the chassis.

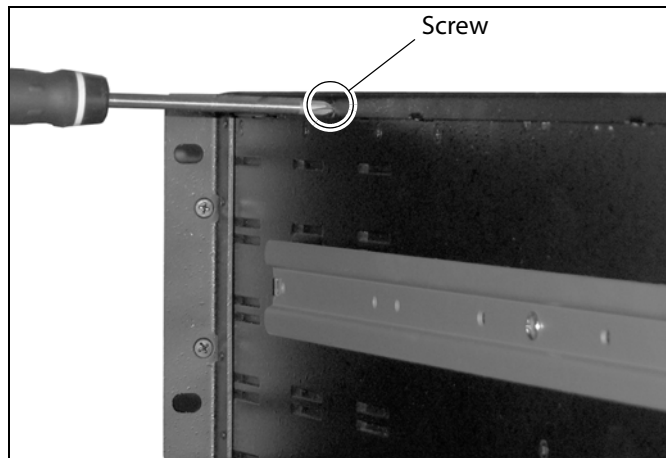


Figure 8 Install the screws securing the top cover to the chassis.

Reinstall the nTier500 into the Rack

1. Lift the nTier500 and slide the side rails on the chassis into the outer rails in the rack until the mounting ears on the front of the chassis fit against the rack. The mounting ear screw holes should be positioned directly over the holes in the clip nuts.



Warning

The nTier500 is very heavy, especially with drives installed. Always use two people, one on each side, when lifting or moving it. Most of the weight is toward the front.

Warnung: Die nTier500 ist sehr schwer, vor allem mit Laufwerken installiert werden. Benutzen Sie immer zwei Personen, eine auf jeder Seite, beim Heben oder Fortbewegen. Die meisten des Gewichts ist nach vorne.



Figure 9 Slide the chassis into the rack.

2. Use a #2 Phillips screwdriver to install the two clip nut screws in each mounting ear to secure the chassis to the rack.

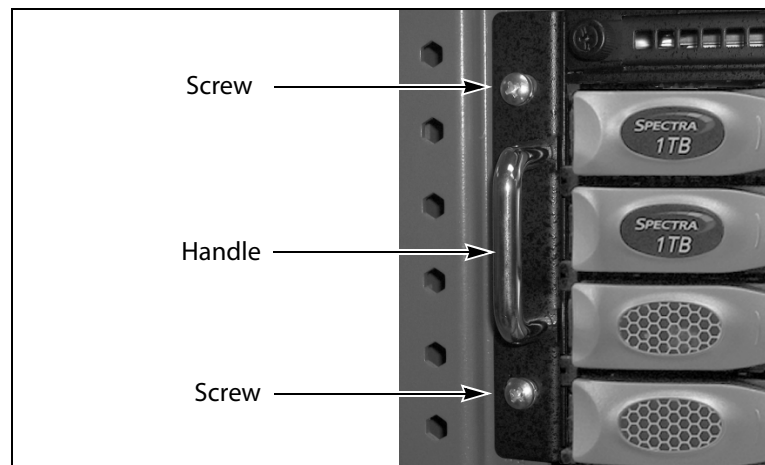


Figure 10 Secure the chassis in the rack (left side shown).

Reconnect the Cables and Power-Up

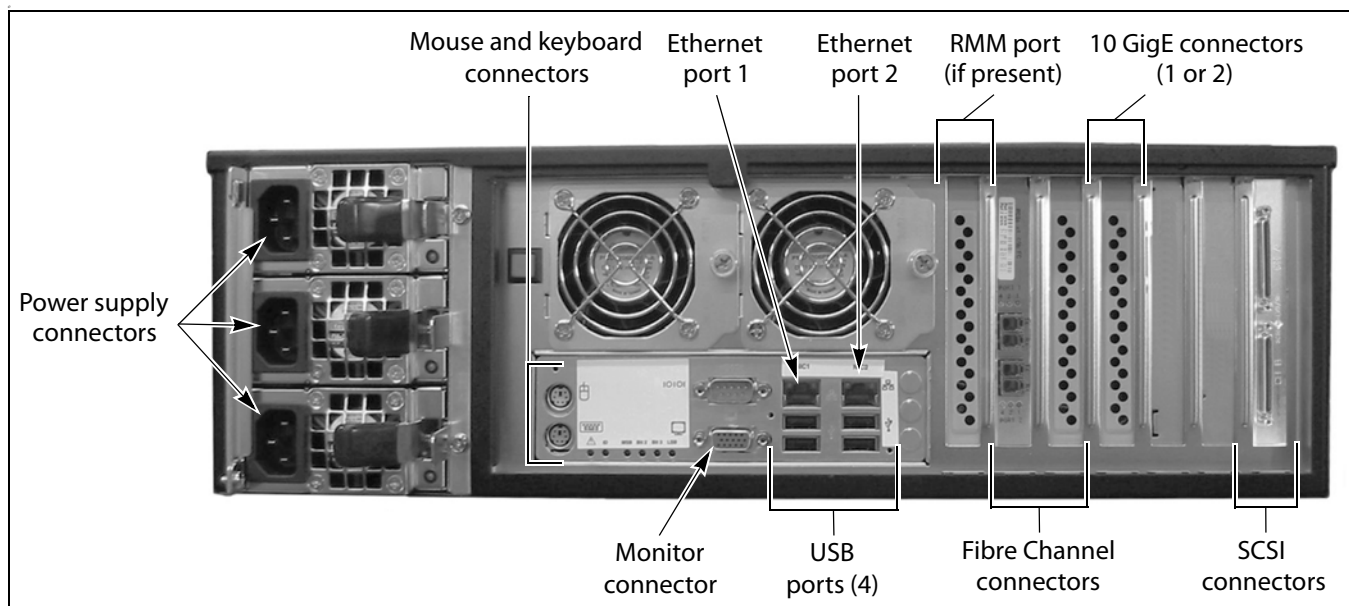


Figure 11 Connect the cables from the back panel.

1. Reconnect any cables you disconnected in [Step 2 on page 8](#) to their respective connectors on the back panel of the nTier500. Make sure that you reconnect the cables to the same connectors.

2. Use a stylus or other similar non-conductive object to press the recessed power button on the front panel until the button's LED illuminates.

Note: You can power on the original nTier500 either before or after installing the front cover.

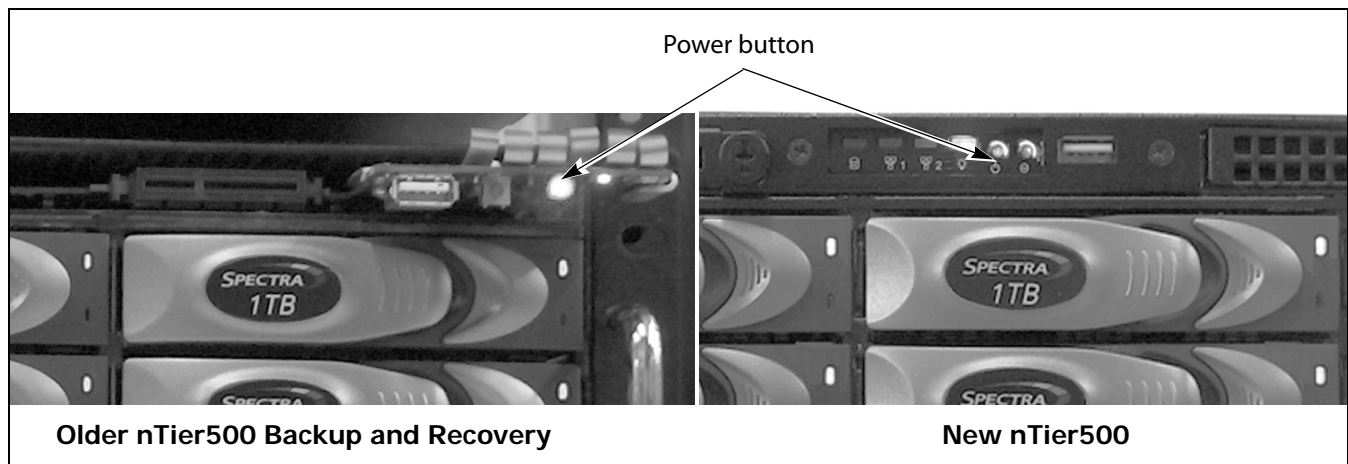


Figure 12 Press the power button.

3. Wait for the nTier500 to complete its power-on sequence.

Confirm That the Upgrade Was Successful

1. Use the BlueScale web interface to confirm that all components are functioning properly.
 - a. Open a web browser on a computer connected to the same network as the nTier500.
 - b. Enter the IP address of the nTier500 in the browser address bar using the form `https://nnn.nnn.nnn.nnn`, where *nnn.nnn.nnn.nnn* is the IP address.
 - c. Confirm that the tabs on the Overview screen are all green.

nTier500 Backup and Archive appliance (Windows-based)

- a. Connect to the Windows desktop either using a keyboard and mouse connected to the nTier500 or through the Remote Desktop application on another Windows-based computer on an active network that has access to the nTier500.
- b. Select **Start** ... **Settings** ... **Control Panel** ... **System** to start the System Properties applet.
- c. The amount of memory (RAM) is listed on the **General** tab.

nTier500 Deduplication appliance (Linux-based)

- a. Launch the VTL Console and connect the nTier500. The default user name is **root**, the default password is **spectra**.

- b.** The amount of memory (RAM) is listed on the **General** tab for the VTL server.
- 2.** Use your application software to resume normal data transfer operations to the nTier500.
Note: Use the VTL Console to restart the virtual tape libraries on the nTier500 Deduplication appliance.

Install the Front Cover

- 1.** Insert a key into the lock on each side of the front cover.
- 2.** Examine the back of the cover. Using the keys, position the locking tabs on each end so they are in the unlocked position.

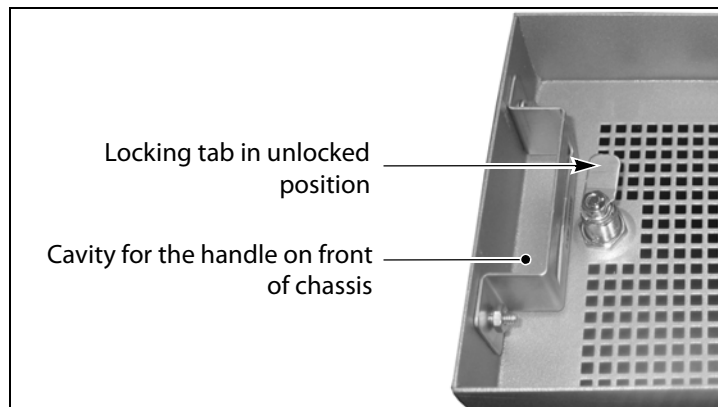


Figure 13 Set the locking tab to the unlocked position.

- 3.** Install the front cover.
 - If the front cover **does not** have an operator panel:
 - a.** While holding the keys in place, orient the cover so that the chassis handles fit into the cavities on each side of the cover (see [Figure 13 on page 17](#)).
 - b.** Push in on both keys and turn them to the horizontal (locked) position to secure the cover to the chassis.

- If the front cover **does** have an operator panel:
 - a. Hold the edges of the cover and orient it so that the alignment tab fits straight into the top slot in the front of the chassis, as shown in Figure 14.

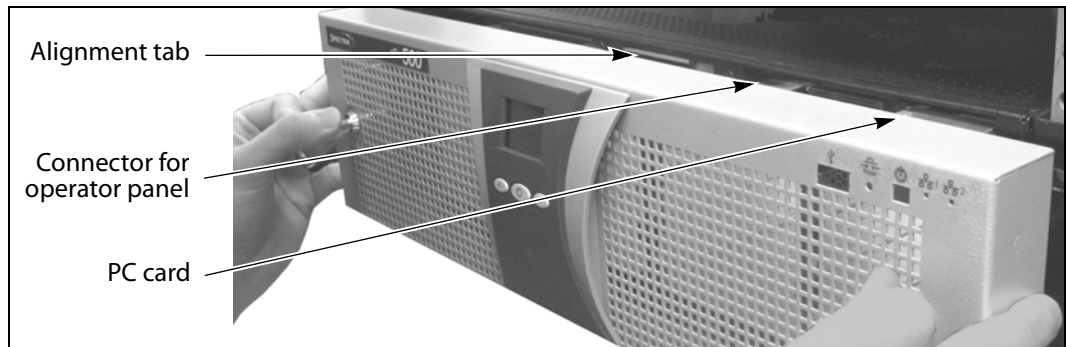


Figure 14 Attach the front cover.

- b. Gently press the cover onto the chassis so that it fits over the PC card extending from the front of the chassis and the chassis handles fit into the cavities on each side of the bezel. Make sure that the PC card on the back of the cover engages the connector on the front of the chassis.



Caution Be careful not to bump or bend the PC card extending from the front of the chassis.

- c. Push in on each key and turn it to the horizontal (locked) position to secure the cover to the chassis.