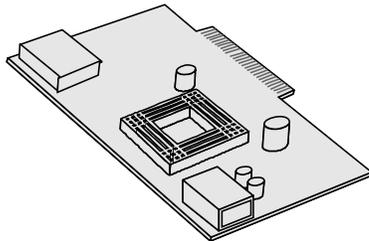# Installing or Replacing a PCIe Card

This document describes how to install a new PCIe card or remove and replace an existing PCIe card or riser in a SnapServer 2000 Series server or REO 4600 appliance.

Follow this procedure carefully. Improper installation may result in damage which voids existing warranties.

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.

CAUTION: While working with the unit, observe standard Electrostatic Discharge (ESD) precautions to prevent damage to micro-circuitry or static-sensitive devices.

Depending on your server model, the **SnapServer 2000 Series** of products includes, or can be upgraded to include, the following PCIe cards:

- RAID Controller Card
- Journal Drive/Battery Backup Unit (BBU) Card
- SAS UIO Module
- Parallel SCSI Card
- Ethernet Card

The **REO 4600** appliance includes, or can be upgraded to include, the following PCIe cards:

- RAID Controller Card
- Hardware Compression Card
- Fibre Channel Card
- Ethernet Card

IMPORTANT: All these cards plug into a riser card in the center of the chassis. The riser card for the NAS N2000 is different in that the bottom slot is a UIO slot (blue plug).

Contents of this Procedure

This procedure provides the following instructions to replace or install PCIe cards:

1. Prepare the Server
2. Replace an Existing Card
   - Locate the Card to be Replaced
   - Replace a RAID Controller, SAS UIO Module, Fibre Channel, Parallel SCSI, Ethernet, or Hardware Compression Card
   - Replace the Journal Drive/BBU Assembly (SnapServer SAN S2000 only)
3. Install a New Card
4. Reactivate the Server
5. Verify the Update
6. Return Any Removed Part

Prepare the Server

Disconnect and Power Off

1. For the SAN S2000, use the GUI to make sure **none** of the **initiators** (servers) have active connections.
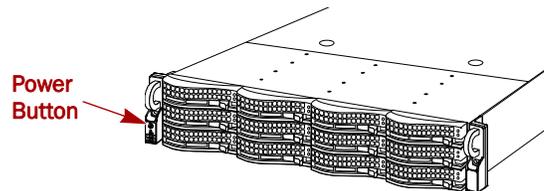2. **Power off** the server.

Figure 1. Power Button on Left Flange

Press the Power button on the front left for **no more** than one second. While there is no obvious change, the server starts its shutdown process.

3. Wait **1-2 minutes**, and then verify that the power LED is off before continuing.
4. Disconnect the **power cords**.
5. Disconnect all the **remaining cables**.

Remove the Disk Carriers

IMPORTANT: Overland recommends that you remove the drive assemblies to lessen the unit's weight prior to removal. The assemblies must be reinstalled in the same slots.

1. Remove the **bezel**:
   a. If necessary, unlock the bezel.

b. Press the bezel latch and pull that latch side forward a few inches.

c. To release the tabs on the opposite side, pull the bezel away from that flange. Set the bezel aside.

2. On the drive carrier, press the **button** to release the assembly handle.

3. Use the **handle** to pull the assembly out.
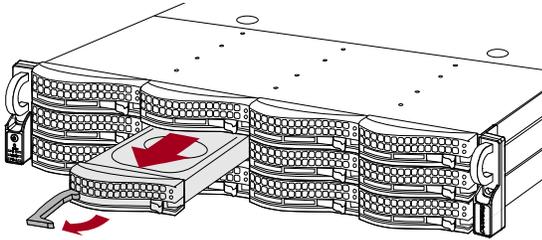
NOTE: *Do not remove the disk drives from their carriers. Doing so voids the drive warranty.*

4. Number the drive assembly and set it on an ESD surface.

5. Repeat Steps 2–4 for the remaining drive carrier assemblies.

Remove Server from Rack

WARNING: It is recommended that a mechanical lifter (or at least two people) be used during rack installation or removal to prevent injury.

AVERTISSEMENT: pour éviter toute blessure il est recommande qu'un monte-charge (ou deux personnes au moins) soit utilisé lors de l'installation ou de l'enlèvement du support.
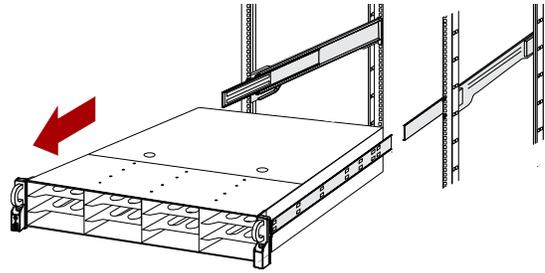
1. Remove and retain the **screws** holding the server to the rack rails.
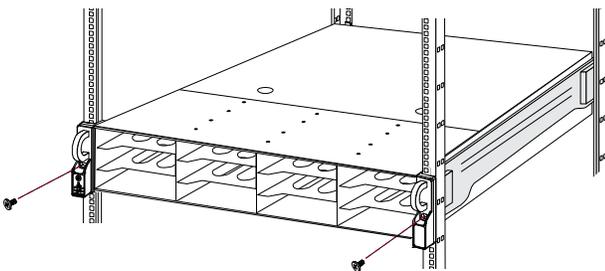
2. Using the two **handles**, pull the unit out until the rails lock.

3. Press down **both latches** where the inner rail on the server goes into the middle rail.
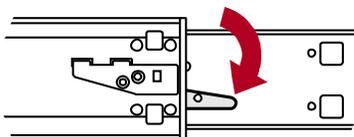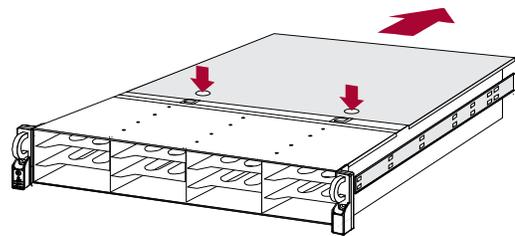

4. Keeping it parallel to the floor, pull the **server** out of the rack and place it on an ESD surface.

5. Slide the **rails** back into the rack.

Remove Cover

1. Push down the **cover latches** and slide the cover back **until it stops** at 1/2 inch (1.25cm).
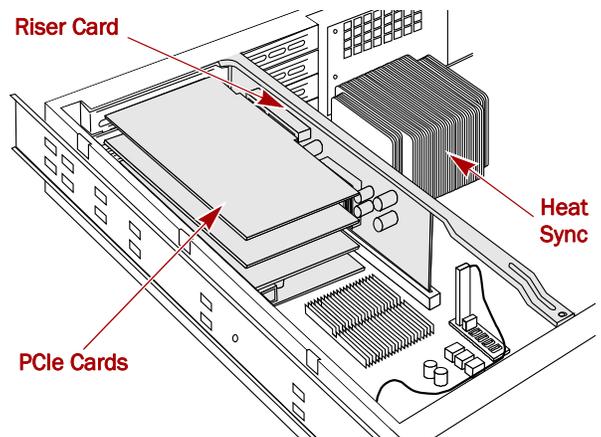

2. Lift the **cover** up and off.

Replace an Existing Card

Locate the Card to be Replaced

1. Facing the front of the unit, locate the **riser card** to the left of the heat sink.
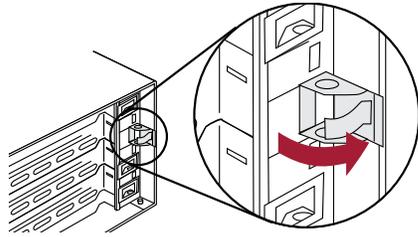

Riser Card

Heat Sync

PCIe Cards

2. Locate the **slot** containing the card you are replacing.

The PCIe cards plug into the 4 slots on the riser card in the following order:

- On a SnapServer SAN S2000, the **Journal Drive/ Battery Backup Unit** (BBU) card is always in the bottom slot and the RAID Controller is in the slot directly above it in the third slot.

- On a SnapServer NAS N2000, the **SAS UIO Module** card is always in the bottom slot.

- On a REO 4600, the **Hardware Compression** card (if installed) is always in the top slot.
- **All other** cards can be installed in any available slot.

Replace a RAID Controller, SAS UIO Module, Fibre Channel, Parallel SCSI, Ethernet, or Hardware Compression Card

1. Remove **any cards** above the card you want to replace:

    a. Disconnect any internal **cables**.

    b. On the rear of the server, release the **latch** holding the card bracket in place.

    c. Pull the **card** free from the riser card slot and set it aside on a secure ESD surface.

2. Repeat Step 1 for the card being **replaced**.

3. Insert the **new card**:

    a. Position the **bracket** into the bracket slot tongue-end first and push the **card** into the riser slot until it snaps into place.

    b. Close the bracket **latch**, making sure the bracket end fits within the latch.

    c. Reconnect any **cables** removed earlier.

4. Replace any cards you **removed**, reconnecting any cables.

    When done, continue with .

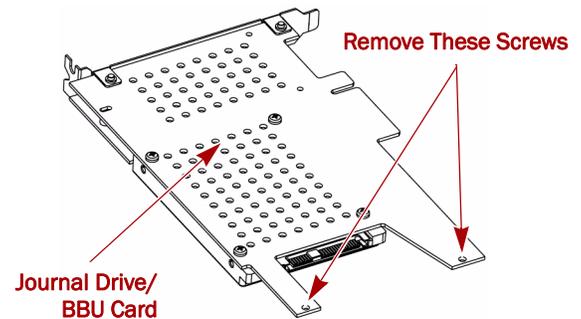## Replace the Journal Drive/BBU Assembly (SnapServer SAN S2000 only)

NOTE: *The new BBU card requires 24 hours to fully charge. The BBU begins charging as soon as the server is powered ON.*

1. Remove **all cards** above the Journal Drive/BBU Assembly card.

2. Disconnect the Journal Drive **SATA and Power** cables from the card.
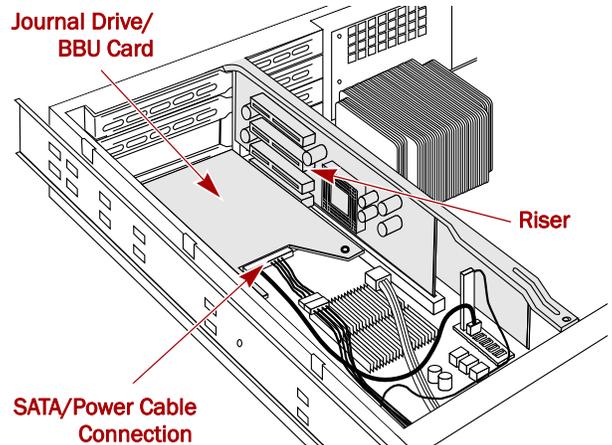
3. Remove and retain the **two Phillips screws** securing the card assembly to the chassis.

4. On the rear of the server, release the **latch** holding the card bracket in place.

5. Pull the **card** free from the riser card slot and set it aside on a secure ESD surface.

6. Install the new **Journal Drive/BBU Assembly**:

    a. Position the **bracket** into the bracket slot tongue-end first and push the **card** into the riser slot until it snaps into place.

    b. Close the bracket **latch**, making sure the bracket end fits within the latch.

    c. Using the two **retained screws**, secure the Journal Drive/BBU card to the chassis.

    d. Reconnect the SATA and power **cables** to the card.

7. In the GUI, add the new Journal Drive by selecting the Replicant tab, and clicking the **Add** button. You should see the new drive added successfully.

When done, continue with .

Install a New Card

Depending on the your server model, you can upgrade any SnapServer 2000 Series or REO 4600 to include the following:

- Ethernet card
- Parallel SCSI card (SnapServer NAS N2000 only)
- Hardware Compression card (REO 4600 only)
- Fibre Channel card (REO 4600 only)

> **IMPORTANT:** If you are installing a Hardware Compression card, it must be installed in the top slot of the riser card. If a card is already installed in the top slot, remove it and install it in a lower slot.

1. Locate an **available slot** on the riser card.
2. If there are PCIe cards installed **above** the available slot, you need to remove those cards before installing the new card:
   a. Disconnect any internal **cables**.
   b. On the rear of the server, release the **latch** holding the card bracket in place.
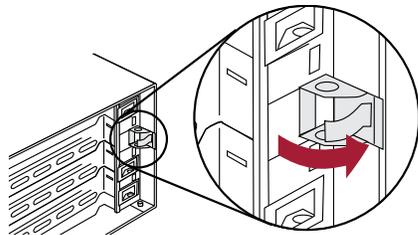
   c. Pull the **card** free from the riser card slot and set it aside on a secure ESD surface.
   d. Repeat Steps a–c for the other cards.
3. Insert the **new card** in the empty slot:
   a. Position the **bracket** into the bracket slot tongue-end first and push the **card** into the riser slot until it snaps into place.
   b. Close the bracket **latch**, making sure the bracket end fits within the latch.
   c. Connect any **cables** required.
4. Replace any cards you **removed** from the upper slots to access this slot, reconnecting any cables.
5. (REO 4600 only) If you have just installed a fibre channel card, connect external **FC Port 0** (left port) to your backup server, switch, or hub. For additional connectivity, connect external **FC Port 1** (right port) to a virtual tape library, switch, or hub.

When done, continue with "Reactivate the Server."

Reactivate the Server

Replace the Cover

1. Place the **top cover** back on the chassis.
2. Slide the cover towards the **front** until it latches (clicks).

> **CAUTION:** To prevent overheating, never operate the server without the top cover in place.

Reinstall Server in Rack

1. Extend the rails out of the rack with the **bearing slides** all the way to the front.
2. Using two people to lift the server, carefully slide the **server rail** into the **rack rail**, and push the server to the rear of the rack.
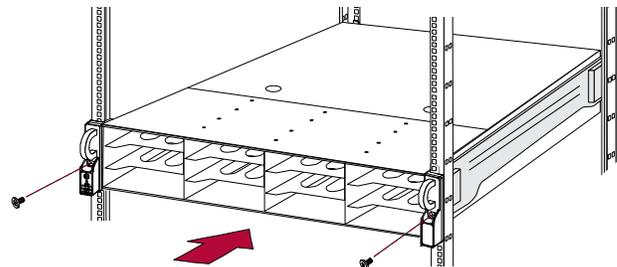
3. Using the **retained screws**, secure the server into the rack.
4. One at a time, insert the **disk assemblies** back into the chassis:

> **IMPORTANT:** The assemblies must be reinstalled into the same slots.

   a. Use the lever to push the disk assembly all the way into the slot **same slot** in the chassis.
   b. Push the **lever** close until it locks (clicks).
5. Replace the **bezel** on the front of the unit by inserting the tabs first and pushing the latch side in until it catches (clicks). Relock if needed.
6. Reconnect the **data cables**.
7. Reconnect the **power cords** to the server.

Verify the Update

Power ON the Server

> **IMPORTANT:** Always turn ON any Expansion E2000 arrays before powering up your server. This enables the server to discover the arrays.

1. Turn on all **expansion** arrays by pressing their Power buttons for no more than one (1) second.
2. Wait until **all** the expansion arrays are running.
3. Turn the server on by pressing the **Power button** for no more than one (1) second.
4. After the server boots, access it through the **GUI** to verify that it is working properly.

Verify Hardware Compression Status (REO 4600 Only)

If you installed a new Hardware Compression card in a REO 4600, verify that it is recognized and operational.

1. Open the GUI in a browser, and **log in** normally.
2. On the System Summary page, the Hardware Compression entry should be shown as **Configured, Operational**.

System Summary	
Information	
System Name	REO
Product Version	6.0.0.42
Serial Number	SMFJ546891324
Power Management Configuration	Disabled
Current Power Management State	All RAID Sets Active
Available Capacity	4153 GB
Number of VTLs	1 J
Number of Dynamic Virtual Tapes	0
Number of Virtual Tapes	0
Number of Disks	0
Hardware Compression	Configured, Operational
Management Port IP Address	10.20.16.91 (Link is Up, 100 Mb/s, Full-Duplex)
Data Port 1 IP Address	10.0.0.1 (Link is Down)
Data Port 2 IP Address	0.0.0.0 (Link is Down)
FC WWNN (0)	200000062B113E4C
FC WWPN (0)	100000062B113E4C
FC WWNN (1)	200000062B113E4D

Figure 2. System Summary

Return Any Removed Part

1. Place any **removed part** in the anti-static bag and put it in the replacement part's box.
2. Return the old part to **Overland Storage**.

   For return shipping details and RMA number, go to:
   http://support.overlandstorage.com/support/support-return-instructions.html