NEXSAN US224 Storage Expansion Quick Start Guide

NEXSAN

This document provides installation steps for racking the US224 Storage Expansion, and cabling all Nexsan storage components for power, and for connectivity to Unity.
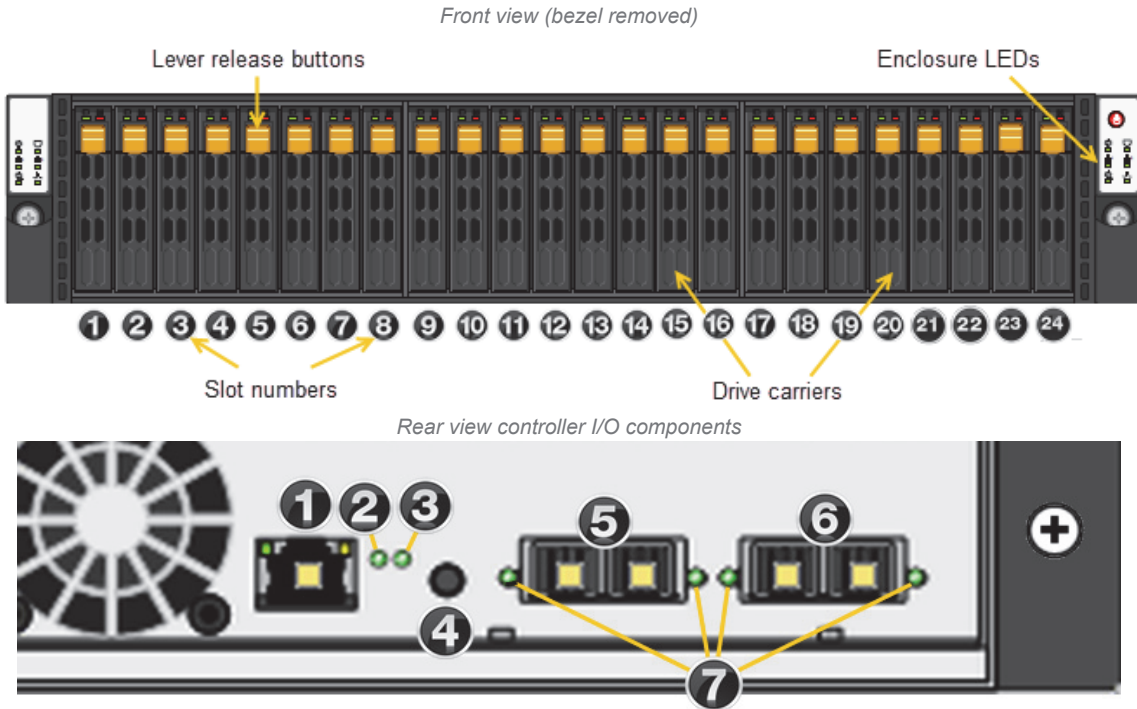
For additional documentation please visit http://helper.nexsansupport.com/unt_support.html

Taking delivery

Check to ensure that no damage has been sustained to the packaging in transit. If any of the Unity storage components appear damaged, you should file a damage claim with your reseller.

Hardware overview

The main components of the US224 Storage Expansion are shown in these diagrams:

Front view (bezel removed)

Rear view controller I/O components

Item	Name	Description
1	LAN port	Not used with Unity Storage Expansions
2	Status LED	Green: Initialization successful Red: Initialization failure
3	Unit ID status LED	On/Off
4	BMC Reset button	Resets the base management controller
5	SAS IN ports	Serial Attached SCSI IN ports from the storage system
6	SAS OUT ports	SAS OUT ports to another storage enclosure
7	SAS link status LEDs (2 IN, 2x OUT)	Green: All four physical layers (PHY) of each port connected with consistent link speed (12G or 6G) Red: Single PHY degraded link speed or disconnected

1 Prepare for installation

A Carefully read safety notices on *page 4*.

B Ensure ahead of time that you have a suitable rack; see *Rack and enclosure specifications* on *page 4*.

C Ensure that you have a Phillips screwdriver.

D Arrange for someone to help you unpack the system.

⚠️ **CAUTION:** Acclimate new disk drives to room temperature for two hours before you install them.

2 Unpack the US224

A Remove all the components from the packaging. Support the chassis from underneath as you pull it out of the foam insert.

Do NOT lift out the US224 chassis from its packaging using the controller handles or attached rails.

B Place the components on an anti-static surface until you are ready to use them.

US224 package contents

- One US224 Expansion (with front bezel)
  - 2 outer-rack rail assemblies (inner-chassis rails are already installed)
  - 4 mounting screws with 4 washers to attach outer-rack rails to the rack (1 on the front and 1 on the back for both the left and right rail assemblies)
  - 2 long screws to secure the chassis to the rack from the front (attached to the chassis)
- FASTier, SSD, and HDD drives. Check that the components included in your shipment correspond to your packing slip.
- SAS cables (HD Mini SAS to HD Mini SAS)
- Two power cables
- One electrostatic discharge (ESD) wrist strap

3 Rack the US224

⚠ **CAUTION:** Physical installation requires two people.

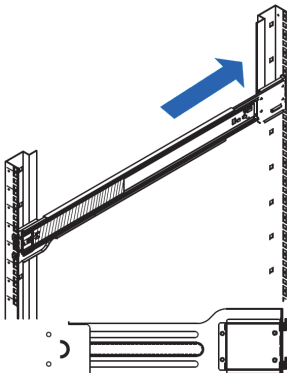### ▶ Step 1: Remove the front bezel

A Turn the key lock at the right end of the bezel to the unlock position.

B Unhook the left end of the bezel from the chassis.

▶ Step 2: Install the outer-rack rails on the rack

A Attach the **RIGHT** and **LEFT** outer-rack rails to the rack by inserting the hooks included on the rails into the holes provided on the rack.

The hooks should be located in the MIDDLE holes of the rack units selected.

B Extend rail assemblies to fit the depth of the rack. Pull on the rear of the assembly until the hooks reach the back of the rack.

C Screw the rails to the rack using the mounting screws provided.

The screws should be secured in the BOTTOM hole of each of the rails.

▶ Step 3: Install the inner rails on the chassis (if necessary)

A Extend the inner rail toward the front of the rail assembly as far as possible, then depress the locking tab to pull it completely out.

B Place the inner rail on the side of the chassis aligning the hooks of the chassis with the rail extension holes.

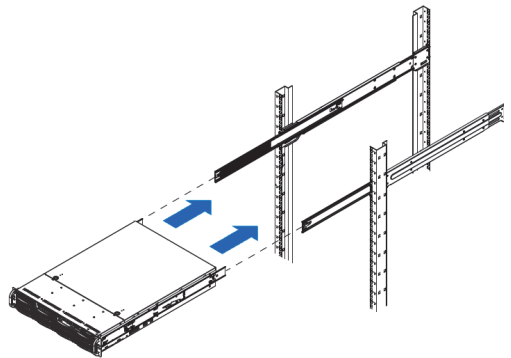**C** Slide the extension toward the front of the chassis.

D If desired, secure the chassis with screws.

E Repeat for the other inner rail.

▶ Step 4: Install the US224 on the rack

A Lift the US224 chassis from each side—not from the front and back.

B Line up the inner-chassis rails with the front of the outer-rack rails.

C Slide the inner-chassis rails into the outer-rack rails, keeping the pressure even on both sides; you have to depress the locking tabs when inserting.

D Push the US224 completely into the rack; you should hear the locking tabs click into position.

E Tighten the thumbscrews that hold the front of the US224 to the rack.

▶ Step 5: Install the disk drives and FASTier read cache SSDs

⚠ **CAUTION:** Put on the ESD wrist strap before starting:

    A Slip the wrist loop over your hand (left or right), then tighten the loop against your wrist.
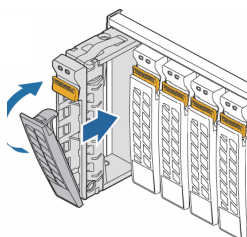
    B Attach the clip end of the anti-static wrist strap to a properly grounded metal surface.

Installation order:

1 Install the FASTier SSDs in the slot as indicated on the label on the drive.

2 Install the disk drives in any order in the remaining slots.

To install the drives:

A Slide the release button on the front of the drive carrier and open the handle.

B Insert the hard-drive carrier into the drive bay until the carrier contacts the backplane.

C Close the hard-drive carrier handle to lock the drive in place.

D Repeat these steps for each drive.
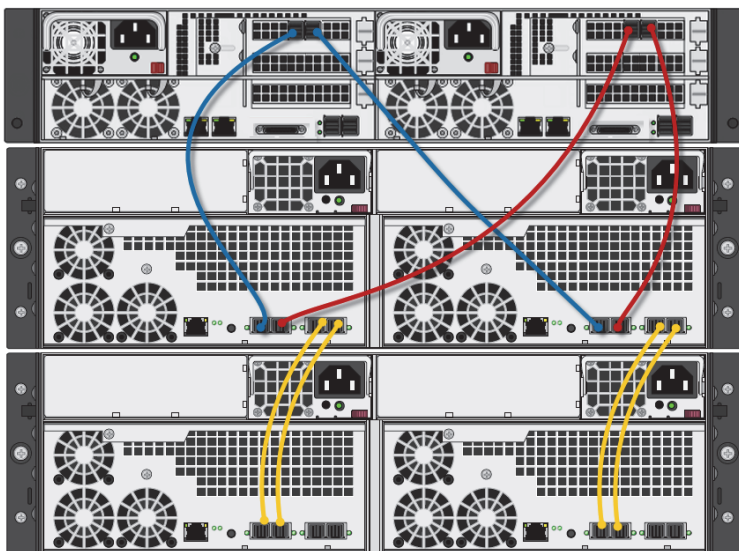
Install the Nexsan Unity Storage System

Unpack and install any Nexsan Unity Storage Systems (such as the UNITY4400 or UNITY6900) included in your Unity shipment.

For detailed instructions, refer to the appropriate *Nexsan Unity Quick Start Guide* included in the packaging.

4 Connect to the Unity Storage System

This section describes the steps for connecting the power, and for connecting the US224 to a Unity Storage System.

▶ Step 1: Cross-connect the US224 to the Unity Storage System

A Cross-connect from the Add-on SAS OUT ports on each storage system controller to the SAS IN ports on the expansion controllers, as shown in *UNITY4400 with US224* on *page 3*.

B Connect any additional storage expansions using the daisy chain method, also as shown.

⚠ **CAUTION:** Do not connect to the Unity Storage Expansion from the on-board SAS ports on either the UNITY4400 or the UNITY6900.

▶ Step 2: Connect the power cables

NOTE: The Unity Storage System is hot pluggable: Once in service, powering down is not normally required to add a Unity Storage Expansion.

A Plug the power cords into their respective power supplies on the rear of the US224.

B Plug the power cords connected to the power supply units into a high-quality strip that offers protection from electrical noise and power surges.

UNITY4400 with US224

5 Power on the US224

▶ Step 1: Power on the US224

A Power on the US224 by pressing and holding the power button located on the right front panel of the chassis until the power LED lights up.

B Wait approximately 1 minute for the drives to all become ready.

C Verify that all drive carrier activity LEDs are illuminated in green. If a drive carrier activity LED does not light up, check to make sure the corresponding drive is properly seated in the chassis.

▶ Step 2: Reattach the front bezel

If all LEDs indicate normal operational status, reattach the front bezel to the US224:

A Hook the left end of the bezel onto the chassis.

B Fit the right side of the bezel onto the chassis.

C Turn the key lock at the right end of the bezel to the lock position to secure the bezel to the chassis.

6 Monitor the US224

This section describes the front panel LEDs that help you monitor the Nexsan US224.

Control Panel LEDs

The two control panels located on the front left and right sides of the US224 have several LEDs. These LEDs provide you with critical information related to

the corresponding node.If the Power fail or Fan fail LED illuminates, replace the component as described in the *Nexsan Unity Storage Expansion Reference Guide*.

Drive carrier LEDs

Each drive carrier on the US224 has two LEDs. If a drive fails, replace the drive as described in the *Nexsan Unity Storage Expansion Reference Guide*.

LED	Indication
	Power Indicates power is being supplied to the system's power supply units. This LED is illuminated when the system is operating.
	Heartbeat This is a server board heartbeat LED and indicates that power is being supplied to the server board.
	NIC1 Indicates network activity on the LAN1 port when flashing.
	NIC2 Indicates network activity on the LAN2 port when flashing.
	Power fail Indicates a power supply module has failed. The second power supply module takes the load and keeps the system running, but the failed module should be replaced as soon as possible. This LED should be off when the system is operating normally.
	Fan fail When flashing, this LED indicates a fan failure. When illuminated continuously, this LED indicates an overheat condition, which may be caused by cables obstructing the airflow in the system or the ambient room temperature being too high.Check the routing of the cables and make sure all fans are connected and operating normally. You should also check to make sure that the chassis covers are installed.

Drive LED	Indication
Green	• A steady green LED indicates the drive is powered on. • If this LED is not lit, the drive is not getting power. • If this LED is flashing, the drive is being accessed (read or write).
Red	• A steady red LED indicates a drive failure.

⚠ Safety notices

- This equipment must be installed and operated in compliance with local laws and regulations.
- Ensure that the ambient temperature at the installation is between 5°C (41°F) and 30°C (86°F). If the temperature at the site is not actively regulated, ensure that daily and seasonal temperature changes will not result in the ambient temperature going outside these limits.
- Always fully stabilize racks with wall anchors or stabilizing legs, or both, before mounting the Nexsan storage unit or any other components on the rack.
- Situate the rack so that full air flow at both the front and the rear of the Nexsan storage unit is possible.
- Ensure that the floor beneath the mounting rack has enough load-bearing capacity to support the rack and all mounted components.
- Always fully secure all rack-mounting hardware when installing the Nexsan storage unit in a rack. Insufficient rack-mount support may allow the unit to fall onto other rack-mounted hardware or onto the floor, potentially damaging equipment or causing injury to nearby personnel.

Rack and enclosure specifications

Rail kit mounting
- 2U enclosure height
- The rack must have square roles
- Maximum distances: 30" (800 mm)

Enclosure dimensions
- Height: 3.5" 88 mm
- Width: 17.2" 437 mm
- Depth: 25.5" 641 mm
- Weight: 56 lbs 25.5 kg (no drives installed)
85 lbs 38.6 kg (all drives installed)

Power requirements
- Power supply: 1,200W
- Input voltage: 100-240V
- Amperage: 12V (100A @ 240V), +5Vsb (6A @ 240V, 4A @ 100V)
- Power consumption: Varies, depending on drive sizes and quantity, fans, and room temperature

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