NEXSAN UNITY™ Quick Start Guide

NV12000™ Storage System

NEXSAN
Firmware Version 7.4

This document provides installation steps for racking, cabling, and setting up the Nexsan UNITY™ NV12000™ Storage System, and cabling all Nexsan storage components for power and data/host connectivity. For additional documentation, please visit nexsan.com/support.

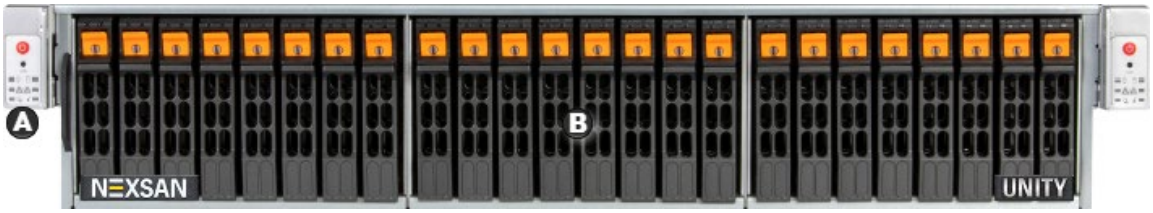
Taking delivery

Your Unity shipment includes the UNITY NV12000, and one or more Unity Storage Expansions, depending on your configuration. Check to ensure no damage has been sustained to the packaging in transit. If anything appears damaged, you should file a claim with your reseller.

Hardware overview

The main components of the UNITY NV12000 are shown in the following front and rear-view diagrams:

Front view



Rear view



Item	Name	Description
A	Control panel	See ***page 6*** of this guide for LED indication descriptions.
B	Drive bays	Twenty-four 2.5" Hot-swappable NVMe drive bays.
C	Power supply unit	2000W Redundant Titanium Level power supply.
	PCIe slots (4)	
1 & 2		PCIe 5.0 x16, HHHL (Half-Height, Half-Length)
3 & 4		PCIe 5.0 x8, HHHL Can support the following Network Interface Card (NIC), SAS HBA, and Fibre Channel (FC) connections: • NIC PCIe-based Ethernet adapters (SFP28, QSFP28/56 OSFP • NIC Dual port 25GbE or ultra high-speed 100G adaptors for clustering • External SAS HBAs to connect to Unity Expansions (JBODs) • FC PCIe-based HBAs (SFP+/SFP28) 16/32/64Gb
5	Air vents	Cooling for six internal heavy-duty 6cm fans.
6	I/O ports (2)	2 x RJ45 10GbE, one upper and one lower.
7	Dedicated IPMI LAN port	For system management.
8	COM port	For serial communication.
9	UID button	Identify server in rack by turning on/off blue LED.
10	USB 3.0 ports (2)	Can support USB-enabled devices such as keyboard, mouse, USB/SATA DVD drive, or flash drive.
11	VGA port	For VGA display or monitor.

1 Prepare for installation

A Carefully read safety notices on ***page 8***.

B Ensure ahead of time that you have a suitable rack; see ***Rack and enclosure specifications*** on ***page 8***.

C Ensure that you have a Phillips screwdriver.

D Have someone assist you during installation.

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

2 Unpack the UNITY NV12000

A Remove all the components from the packaging. Reach under the chassis to pull it free from the foam insert.

Do NOT lift the UNITY NV12000 chassis from its packaging using the attached rails.

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

UNITY NV12000 package contents

- One Unity Storage System
  - 2 outer-rack rail assemblies (inner-chassis rails are already installed).
  - Minor mounting hardware such as front chassis lock screws, threaded rack rail screws, and small zip ties.

    NOTE: With the toolless installation design, screws are not needed for basic mounting into a square rack.
- Up to twenty-four NVMe SSD drives. (Check that the components included in your shipment correspond to your packing slip.)
- SAS cables, HD Mini SAS to HD Mini SAS. (May be optional, check shipment components and packing slip.)
- PCIe External MCIO cables. (May be optional, check shipment components and packing slip.)
- Two power cords.
- One electrostatic discharge (ESD) wrist strap.

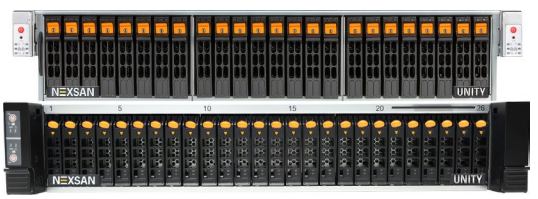
3 Rack the UNITY NV12000

CAUTION: Physical installation requires two people.

Example rack positions for components:

- UNITY NV12000 on top, Unity Storage Expansion below

Example of UNITY NV12000™ with U2F226™

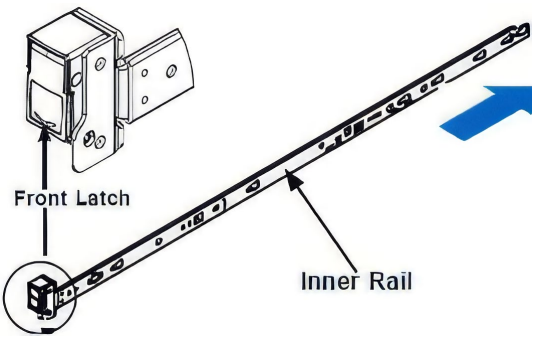


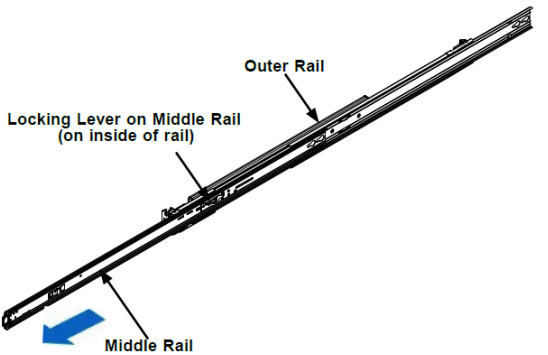
▶ Step 1: Identify the rails

NOTE: The rails will fit a rack between 26.5" and 36.4" deep.

There are two rail assemblies; one installs on the left side of the rack, the other on the right side.

Each assembly consists of three sections: An inner rail that secures directly to the chassis, an outer rail that secures to the rack, and a middle rail which extends from the outer rail. Read labels on rails.





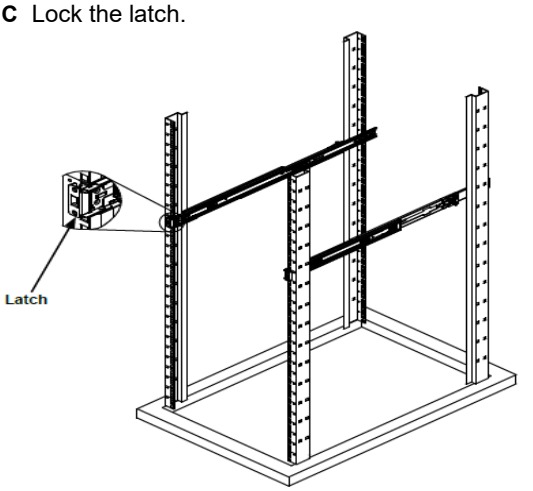
▶ Step 2: Install the outer-rack rails on the rack

NOTE: Rack must have square holes. Older racks with round holes require rail bracket removal and use of screws to secure rail to rack.

A Align the square pegs on the back end of the rail with the square holes on the front of the rack until it clicks. Lift the latch upward and push the middle rail to the rear.

B Adjust the rail to reach just past the full depth of your rack. Align the square pegs on the front end of the rail to the holes on the rack. Turn the latch to the open position and push the pegs into the front for the rack holes.

C Lock the latch.



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

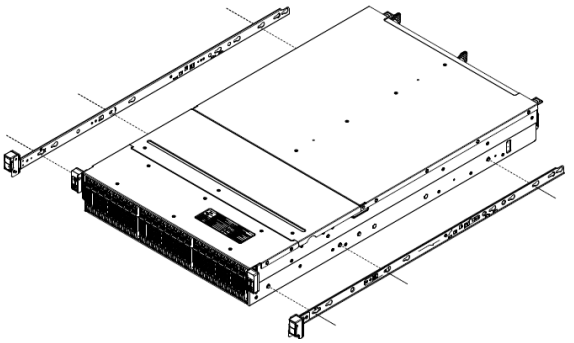
A Lift the front latch on the inner rail and pull the inner rail out of the middle rail, and the middle rail out of the outer rail until the rails are fully extended.

B Press down the locking lever on the inside of the inner rail to release the inner rail. Continue to pull the inner rail out of the middle rail. Confirm that the left and right inner rails have been correctly identified.

C Place the inner rail firmly against the side of the chassis, aligning the pins on the side of the chassis with the slotted thru holes in inner rail.

D Slide the inner rail toward the rear of the chassis until the pins are at the end of the narrow slot, which secures the inner rail to the chassis. An optional screw may be added for extra security.

E Repeat steps A-D for the other inner rail.

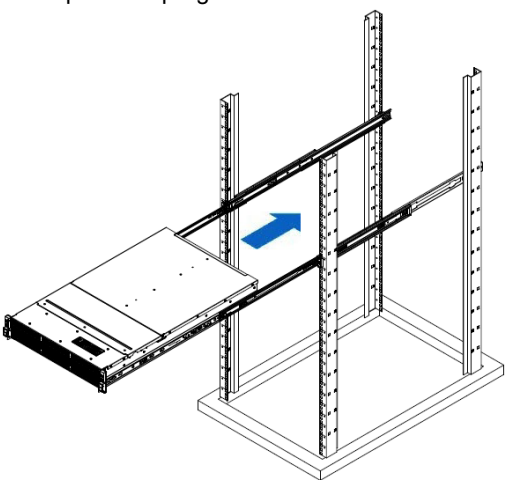


▶ Step 4: Install the UNITY NV12000 on the rack

A Pull both middle rails out the front of the outer rail until each clicks to a stop.

B Align the inner rails on the chassis with the front of the middle rails.

C Slide the inner rails on the chassis into the middle rails, keeping the pressure even on both sides. When partially in, the locking levers will stop further progress.



D Press down the locking levers on the inside of the inner rails and push the chassis all the way into the rear of the rack. The front latches will click into place.

▶ Step 5: Install the NVMe SSDs

CAUTION: Put on the ESD wrist strap before starting:

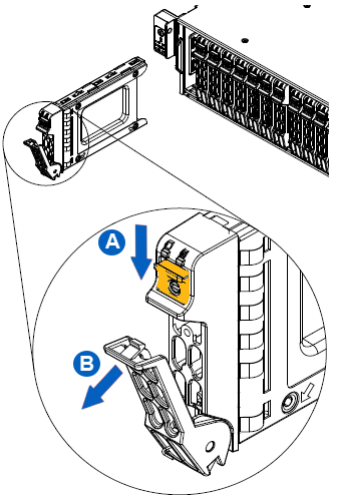
A Slip the wrist loop over your hand (left or right), then tighten the loop against your wrist.

B Attach the clip end of the anti-static wrist strap to a properly grounded metal surface.

Remove drive carriers from chassis

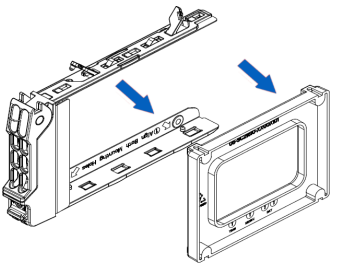
A Press the release button on the drive carrier in the front drive bays. This extends the drive carrier handle.

B Use the handle to pull the drive carrier out of the chassis.



Remove dummy drive from carrier

- Remove the pre-installed dummy drive from the carrier by pushing it out of the frame.



Install the drives

A Insert a drive into the carrier with the PCB (Printed Circuit Board) side facing down and the connector end toward the rear of the carrier.

B Insert the drive carrier into its bay, keeping the carrier oriented so that the release button is on the bottom side. When the carrier reaches the rear of the bay, the release handle will retract.

C Push the handle in until it clicks into its locked position.

D Repeat these steps for each drive.

E Install the NVMe SSDs in the slots as indicated on the label on the drives.

4 Install the Unity Storage Expansion

Unpack and install any Unity Storage Expansion included in your Unity shipment.

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

5 Connect the UNITY NV12000

This section describes the steps for connecting the network and power cables, and for connecting a Unity Storage Expansion(s) to the UNITY NV12000.

▶ Step 1: Connect network cable to IPMI

A For remote access, monitoring and hardware management, plug an Ethernet cable into the dedicated IPMI LAN port on the back panel of controller 1, located on the right side of the node above the USB ports as shown in the Connections diagram below.

B Repeat this step on the second controller.

For controller connectivity with the Unity Storage System, see ***Step 5: Connect to Unity Storage Expansions***.

▶ Step 2: Connect peripherals & monitor

A Connect input devices such as keyboard and mouse using the USB ports.

B If required connect monitor to VGA port.

NOTE: This step is only required for initial system setup.

▶ Step 3: Connect the network cables

A For management access on the nx99 interface, plug an Ethernet cable into the on-board TOP RJ-45 port on controller 1, as shown.

B For data access on nx0, plug an Ethernet cable into the BOTTOM on-board 10GbE port.

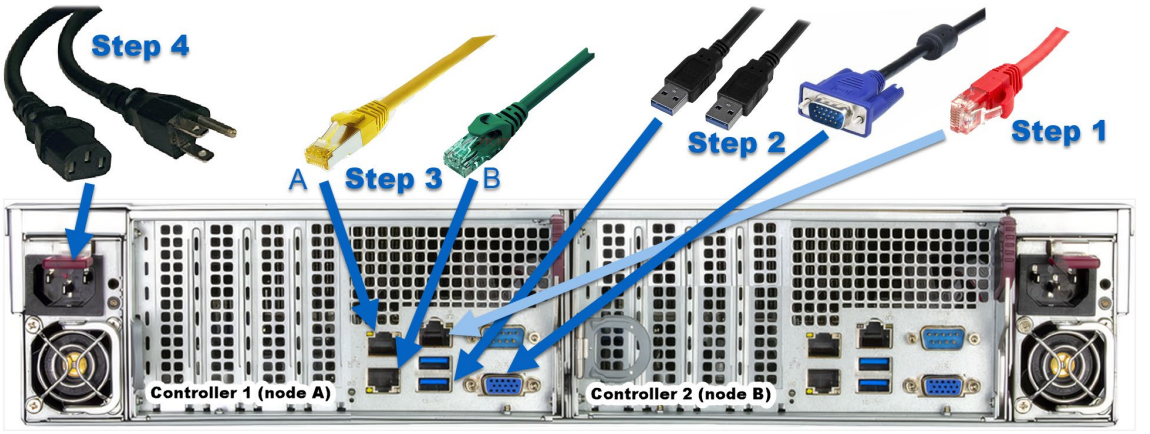
C Repeat this step on the second controller.

▶ Step 4: Connect your power supply

A Each UNITY NV12000 PSU must be connected to your storage rack's source of power, for continuous power and controller connectivity.

B Using the two supplied power cords, connect each PSU to main power, making sure to fold down the power cord-retaining clip over each one.

Connections diagram



▶ Step 5: Connect to Unity Storage Expansions

The UNITY NV12000 can connect to one direct Unity Storage Expansion, to multiple expansions, or to a maximum of four U2F226 Unity Storage Expansions using the PCIe slots.

NOTE: JBOF and JBOD expansions cannot be mixed in the same daisy chain.

See ***UNITY NV12000 connected to U2F226(x2)*** on ***page 5***.

A Connect the first External MCIO (Mini Cool Edge I/O) cable from Slot1 of Controller1(node A) on the NV12000 to Slot1 of Node1(lower node) on the U2F226.

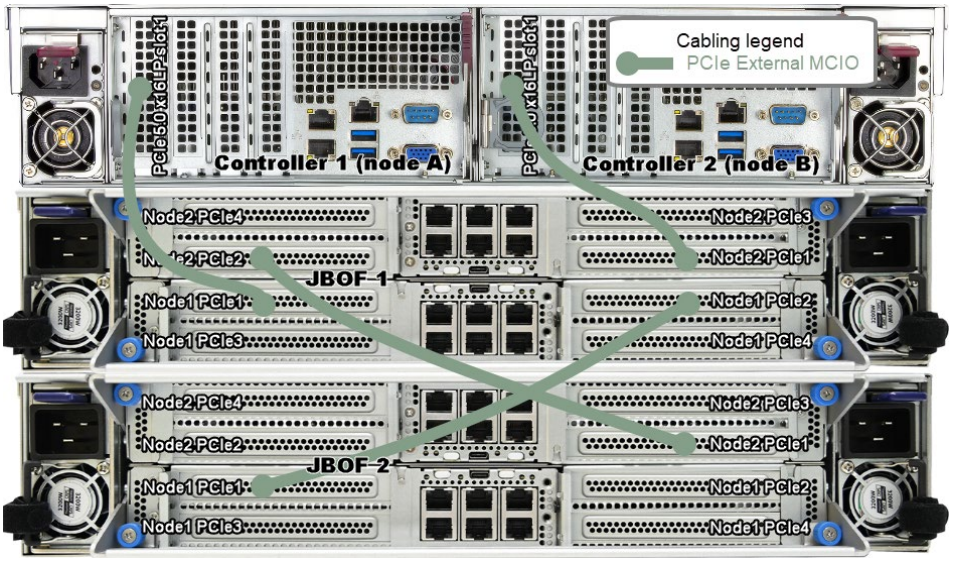
B Connect the second MCIO Cable from Slot1 of Controller2(node B) on the NV12000 to Slot1 of Node2(upper node) on the U2F226 JBOF1.

C Connect the third MCIO Cable from Slot2 of Node1 on JBOF1 to Slot1 of Node1 on JBOF2.

D Connect the fourth MCIO Cable from Slot2 of Node2 on JBOF1 to Slot1 of Node2 on JBOF2

E Connect USB Type-C cable from Node2 of JBOF1 to Node2 of JBOF2.

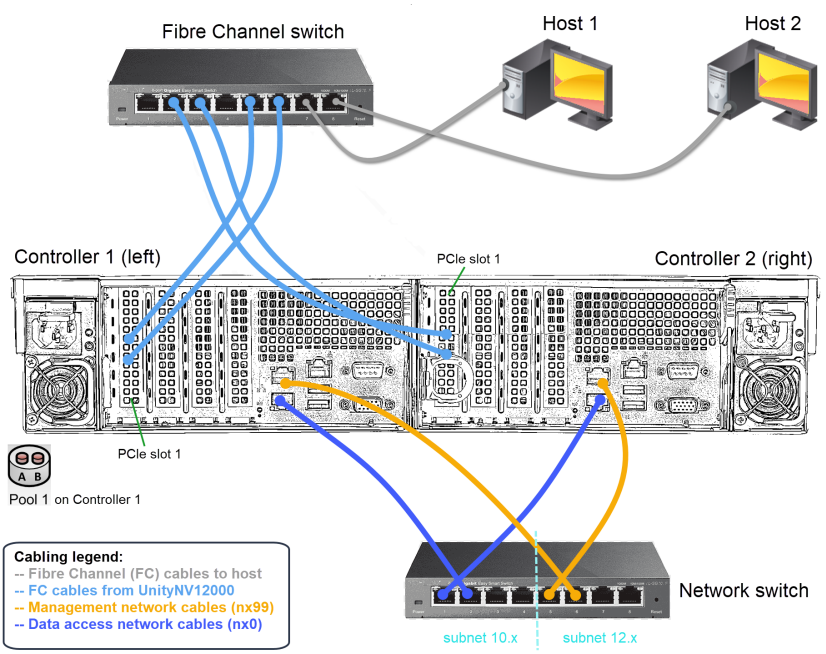
UNITY NV12000 connected to U2F226(x2)



▶ Step 6: Connect to hosts

Under the required LUN (Logical Unit Number) mask configuration, when connecting the UNITY NV12000 to a Fibre Channel switch, each host has at least one connection to that switch, creating multiple paths to the LUN. For a given LUN, all the paths on the owning controller are optimized and all the paths on the other controller are non-optimized.

File systems can be accessed from the virtual network interface, bound to the owning controller dynamically.



6 Power on Unity components

Power on the Unity components in this sequence:

- Power on your Unity Storage Expansion.
- Power on the UNITY NV12000.

IMPORTANT: If a drive carrier activity LED does not light up, check to make sure the corresponding drive is properly seated in the chassis.

▶ Step 1: Power on your Unity Storage Expansion

- Press and hold the power buttons located on the left front panel of the U2F226 chassis until the power LEDs lights up.

▶ Step 2: Power on the UNITY NV12000

A Press and hold the power buttons on the left and right front control panels of the chassis until the power LEDs light up.

B Verify that the power LEDs on the front control panels are illuminated to ensure that the controller nodes are receiving power and the power modules are functioning.

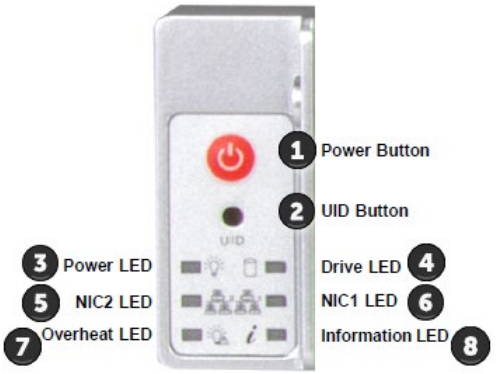
C Verify that the drive carrier LEDs are illuminated in green.

7 Monitor the Unity Storage System

This section describes the front panel LEDs that help you to monitor the Nexsan Unity Storage System.

Control panel LEDs

The control panels located on the front left and right side of the NV12000 have several LEDs, providing critical information related to the corresponding node.



Item	Icon	Status
1		Apply/remove power from PS to server
2	UID	Turn UID LED on/off
3		Illuminated when system operating
4		Activity on storage drives when flashing
5	2	Activity on LAN port 2 when flashing
6	1	Activity on LAN port 1 when flashing
7		Overheat condition in the system
8	*i*	Alerts several states, see table below

Universal Information LED	*i*
Color, Status	Description
Red , solid	Overheat condition
Red, blinking at 1Hz	Fan failure
Blue, solid	Local activation to locate server in rack
Blue, blinking at 1Hz	BMC activation to locate server in rack

Drive carrier LEDs

Each drive carrier has two LEDs. If a drive fails, replace the drive as described in the *Nexsan Unity Hardware Maintenance Guide* at nexsan.com/unity-support.



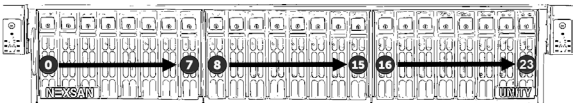
NOTE: Drives are vertically oriented in server. Left side LED is for Activity, and right side LED is for Status.

Activity LED	State	Status
Blue	Solid on	NVMe drive installed
Blue	Blinking	I/O activity

Status LED	State	Status
Red	Solid on	Failed NVMe drive
Red	Blinking at 1 Hz	Rebuild NVMe drive
Red	2 blinks 1 stop 1 Hz	Hot spare NVMe
Red	On five seconds, off	Power on NVMe
Red	Blinking at 4 Hz	Identify drive NVMe
Green	Solid on	Safe to remove drive
Amber	Blinking at 1 Hz	Do not remove drive

Disk slot map

The twenty-four 2.5" Hot-swappable NVMe drive bays are identified from left to right using logical numbers 0 to 23.



8 Configure the Management Interface (nx99)

Configure network settings for the management interface (nx99) using the nxadmin CLI (Command Line Interface.

NOTE: It is strongly recommended to configure the management interface (nx99) on a different subnet from the primary data network interface (nx0). In a flat network environment, it is acceptable to configure both interfaces on the same subnet.

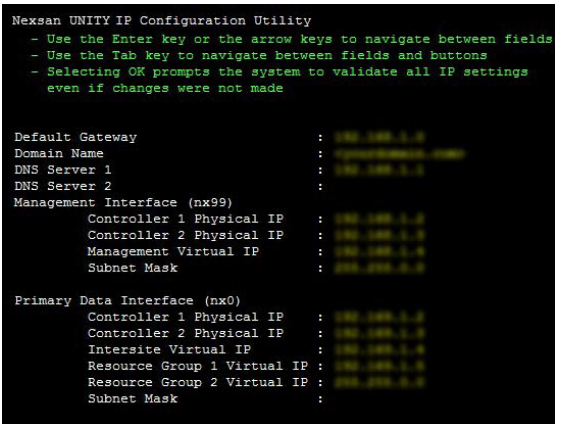
▶ Configure the Management Interface (nx99) using the nxadmin CLI

A Connect to the UNITY NV12000 using input devices, see *Step 2: Connect peripherals & monitor* on *page 4*.

B When connected, type **`nxadmin`** to log on.

C Type the default nxadmin password: **`PASSWORD`** (all upper-case).

D Type **`setip`**.



E Type IP addresses for the management interface; use the Tab key to navigate between fields.

NOTE: Do not set the network settings for the primary data network interface (nx0); you configure this interface in the Unity System Configuration wizard.

F Tab to the **<Validate>** option and press **Enter**.

G Once validation completes, tab to the **<OK>** option and press **Enter**.

9 Set up the UNITY NV12000

▶ Start the initial setup

A Open Google Chrome.

B In the address bar, type the UNITY NV12000 Management Virtual IP address in the browser address bar and press **Enter**.

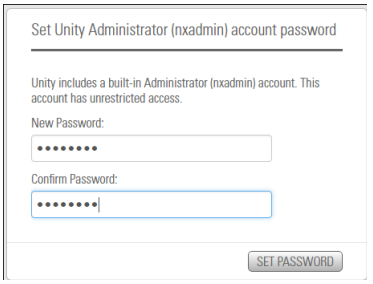
C Read the terms of the license agreement.

D Click the **I accept the terms of the license agreement** check box and click the **Next** button to continue.

▶ Set the password for the Unity Administrator

The UNITY NV12000 is shipped with the built-in Unity Administrator account, **nxadmin**.

- Enter the new password and retype it to confirm, then click the **Set Password** button.



The **Unity System Configuration wizard** opens.

▶ Step 1: Configure Unity System properties

Enter the Unity System information.

A Enter a **Unity System Name**.

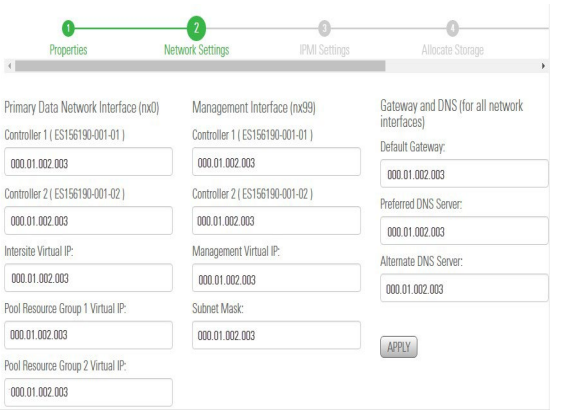
B Optionally, select a **Server Time Zone**.

C Optionally, select **Unity CallHome** settings.

D Click the **Next** button to continue.

▶ Step 2: Configure network settings

A Enter IP addresses for the Primary Data Network Interface (nx0).



In the examples shown, except for the subnet mask, the last digit of the network addresses increments from 0 to 10 (or 190 to 200). This practice is a useful standard if you need to manage multiple systems.

B Verify the Management Interface (nx99) IP addresses, ideally on a separate subnet.

NOTE: It is strongly recommended to configure the two management interfaces on separate subnets. In a flat network environment, it is acceptable to configure both interfaces on the same subnet.

C Verify the Gateway and DNS addresses for all network interfaces.

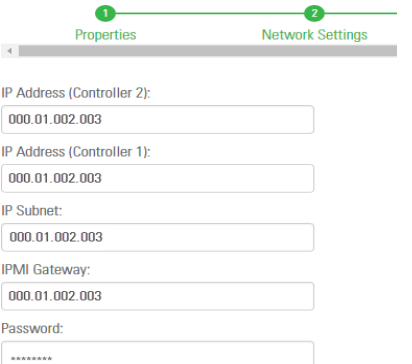
NOTE: The Default Gateway address should be in the same domain as the Primary Data Network (nx0).

D Click the **Next** button to continue.

▶ Step 3: Configure IPMI settings

This step prompts you to configure the Intelligent Platform Management Interface (IPMI) settings. To enable IPMI for Unity, you must connect a network cable to the dedicated IPMI GbE LAN port on the back of each controller of the Unity Storage System enclosure. Enter IP addresses for Controller 1, Controller 2, and the IP Subnet and IPMI Gateway.

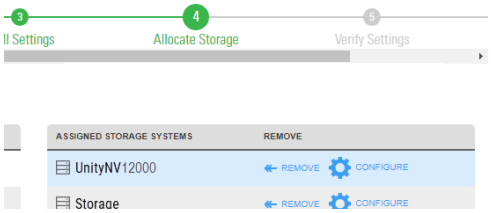
A Enter and confirm the IPMI password.



B Click the **Next** button to continue.

▶ Step 4: Allocate storage

This step prompts you to allocate RAID storage.



A Click **Allocate** to assign the storage system to the UNITY NV12000.

B Click **Configure** to specify RAID settings. Recommended RAID set levels, number of RAID sets, hot spares, and volume names are preconfigured.

C Click the **Apply** button to apply the RAID settings and then repeat for the second controller.

D Click the **Next** button to continue.

▶ Step 5: Verifying configuration settings

In this step, review the summary of the settings you have set up.

- To change a configuration setting, click the step identifier at the top of the System Configuration wizard panel to go back to a specific step. For example, if you want to change the Unity System name, click the Step 2 icon.
- To finalize the Unity Storage System setup, click **Create**.

▶ Step 6: Applying configuration settings

The System Configuration wizard applies your settings, displaying the progress as the wizard configures Unity.

- To change a configuration setting, click the step identifier at the top of the System Configuration wizard panel to go back to a specific step. For example, if you want to change the Unity System name, click Step 2.
- When Unity System configuration is complete, you can open the **Add Storage Pool** wizard, OR
- Click **No I'm finished** to close the wizard.

Unity opens and displays the dashboard, where you can view Cluster Status, Events, Storage System statistics, Storage Pools, File Systems, and LUNs.

▶ What's next

Please see the *Unity Setup Guide* included with your Unity System for basic setup instructions for:

- Authentication
- Adding a storage pool, file system and LUN
- Mounting an iSCSI LUN on a Windows client
- Mapping a CIFS file system to a Windows client

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 Nexsan storage enclosures on the rack.
- Situate the rack so that full air flow at both the front and the rear of Nexsan storage enclosures is possible.
- Ensure that the floor beneath the mounting rack has enough load-bearing capacity to support the rack and all mounted components.
- Take precautions to discharge any electrostatic charge from your person before and while handling components with your hands or any tools. Use an anti-static wrist-strap.
- Always fully secure all rack-mounting hardware when installing Nexsan storage enclosures 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.
- The system has multiple power connections; as a result, you must remove all power leads to completely isolate the power and always use the IEC power cords supplied with the system.
- Only a fully-trained Service Engineer is authorized to disassemble any other part of the hardware, and then only when the hardware is powered off.

Rack and enclosure specifications

- 2U enclosure height
- The rack must have square holes
- Maximum distances: 30" (800 mm)
- Height: 03.47" 88 mm
- Width: 17.7" 449 mm
- Depth: 30.0" 762 mm
- Weight: 66.8 lbs 30.3 kg (no drives installed)
  75.3 lbs 34.2 kg (all drives installed)

Power requirements

- Power supplies: 2x 2000W Redundant Titanium Level
- Input: 200-240 VAC, 11.8 - 9.8A, 50-60 Hz
- Output: 2000 Watt, +12V (164.68A max.)
  +12Vsb (2.07A max.)
- Power consumption varies depending on the number and size of drives, running fans, and room temperature.

NEXSAN

Part number: P04500198. Rev: 10.27. Release Date: Nov. 2026

Related Documentation: Nexsan Unity Hardware Maintenance Guide, Nexsan Unity Software User Guide, Nexsan Unity Help, Unity Setup Guide, Unity nxadmin CLI Reference Guide.

Technical Support

By Email: support@nexsan.com

By Web: https://www.nexsan.com/support/

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