

TrueNAS® ES24 Expansion Shelf Basic Setup Guide

Version 1.11



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The TrueNAS ES24 is a 4U, 24-bay, SAS3 (12 Gb/s) expansion shelf with dual expansion controllers and redundant power supplies.

1 Unpacking the Unit

TrueNAS units are carefully packed and shipped with trusted carriers to arrive in perfect condition. If there is any shipping damage or missing parts, please take photos and contact iXsystems support immediately at support@ixsystems.com, 1-855-GREP4-iX (1-855-473-7449), or 1-408-943-4100.

Please locate and record the hardware serial numbers on the back of each chassis for quick reference.

Carefully unpack the shipping boxes and locate these components:



ES24 Expansion Shelf



Set of rackmount rails. The rails have a specific front end, identified by a label visible on the left above. The front ends of the rails must be installed facing the front of the rack.



A total of 24 populated or empty “airbaffle” drive trays. Trays must be installed in all bays to maintain proper airflow for cooling.



Two 3-meter Mini SAS HD to Mini SAS HD cables



One Serial Cable



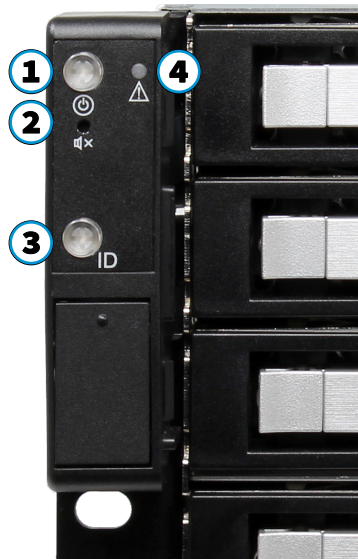
Accessory kit with 2 IEC C13 to NEMA 5-15P power cords, 2 IEC C13 to C14 cords, and a set of velcro cable ties.



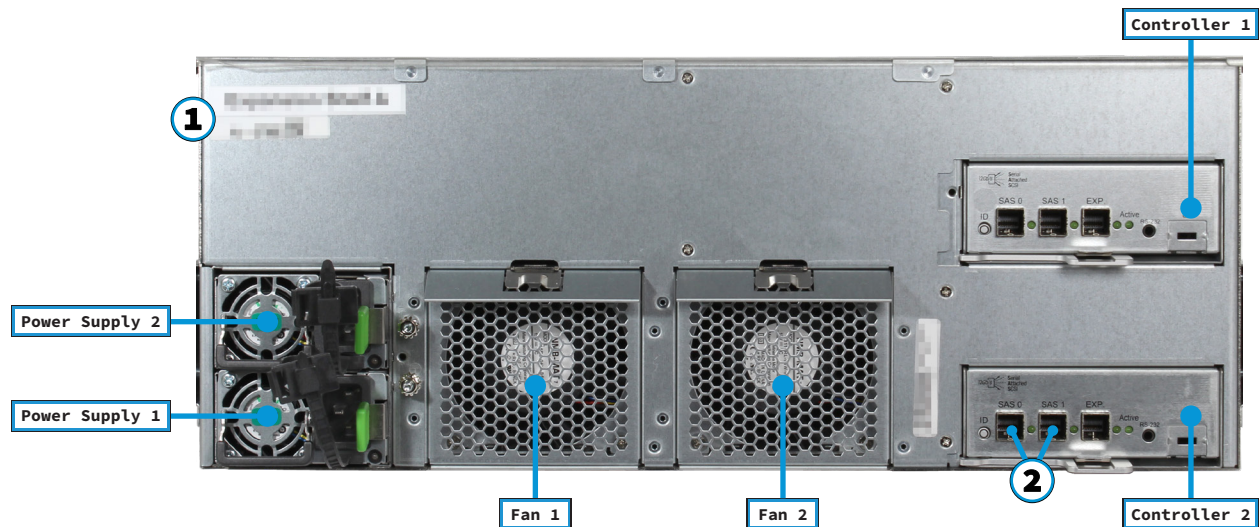
Hardware for system racking.

2 Ports and Indicators

The ES24 has front panel buttons for power (1), alarm mute (2), and locate ID (3). There are lights for power (1), locate ID (3), and fault (4). The fault light illuminates during the initial power-on self-test (POST) or when the TrueNAS software generates an alert.



The back panel has the controllers, power supplies, fans, and connection ports:

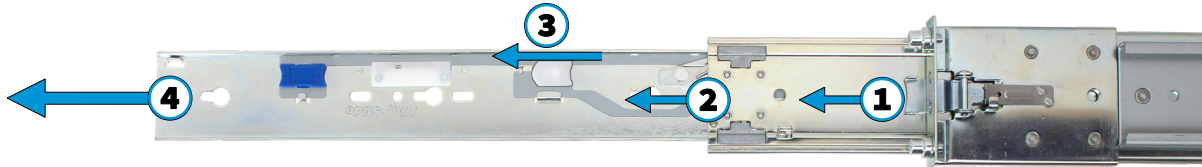


1. Serial number
2. HD Mini SAS3 ports

3 ES24 Rail Kit Assembly

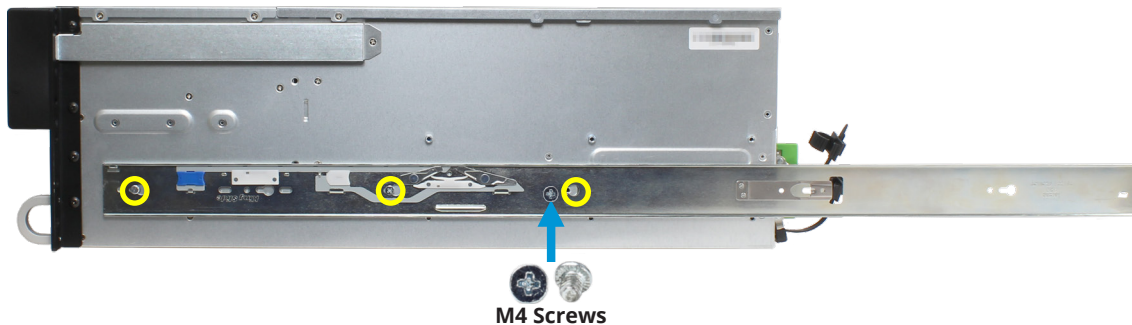
3.1 Separate Cabinet Rails from Rack Rails

Extend the inner rack rail until it locks in place (1). Slide out the cabinet rail until it stops (2). Remove the cabinet rail by sliding the white release tab away from the inner rack rail (3), then pull the cabinet rail free (4).



3.2 Mount Cabinet Rails

The cabinet rails are mounted on both sides of the system cabinet. Align the cabinet rail key holes with the three posts on the side of the chassis and slide the rail until the post is secured in the key holes of the rail.



Align the rail hole with the screw hole and secure the rail with one M 4x4 L screw. Repeat this process to mount and secure the second cabinet rail on the other side.

3.3 Mount the Rack Rails

A TrueNAS ES24 requires 4U of vertical rack space. The rack rails are installed in the bottom 2U of the total 4U height. The inner rack rail must be unlocked and retracted before installing the rail in the rack. Rotate the release lever on the back of the inner rail clockwise as shown on the arrow label (1). Push the inner rail towards the back of the rail assembly until it stops (2).

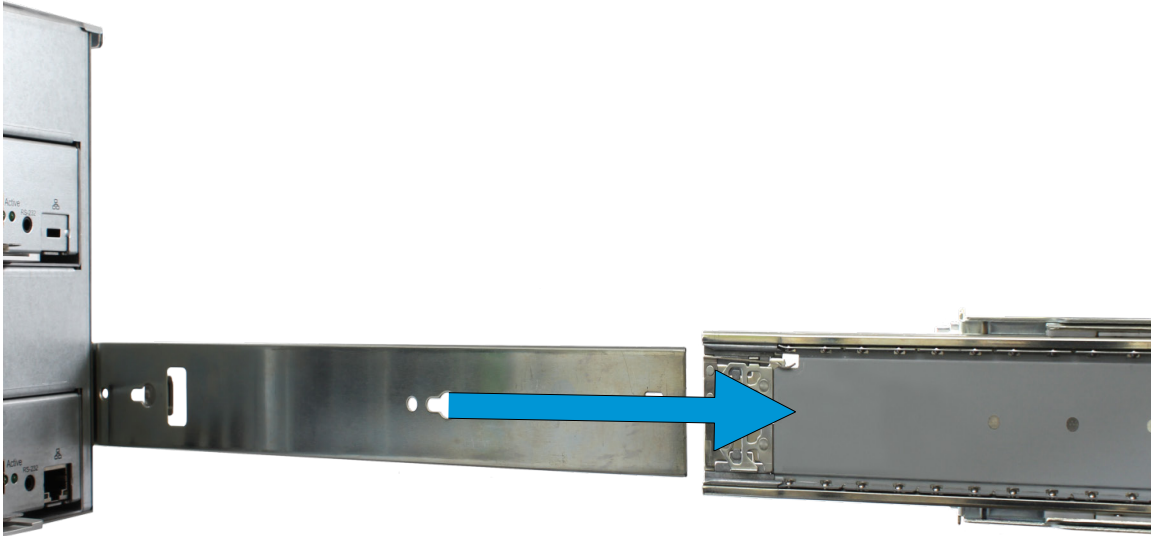


Place the rail in the rack with the front end toward the front of the rack. Align the pins with the mounting holes in the front of the rack. Push the pins into the holes until the latch clicks. At the rear of the rail, align the pins with the holes. Make sure the rail is level. Swing the latch handle out (1) and pull it to extend the rail rearwards until the pins are fully seated in the rack holes (2). Release the latch to lock it in place. Repeat the process for the second rack rail.

3.4 Mount the Unit in the Rack

Caution: Two people are required to safely lift the chassis for rack installation or removal. Do not install drives until after the chassis has been installed in the rack, and remove all drives before removing the chassis from the rack.

Extend both inner rails outwards from the rack until they lock in place. Align the cabinet rails with the inner rack rails and slide them into the rack rails until they are fully seated.



When both cabinet rails are secured in the rack rails, gently push the chassis until it stops halfway in. Slide the blue release tabs on both cabinet rails towards the front of the system (1) while pushing the unit into the rack. Push the chassis into the rack until it is flush with the front of the rack (2).

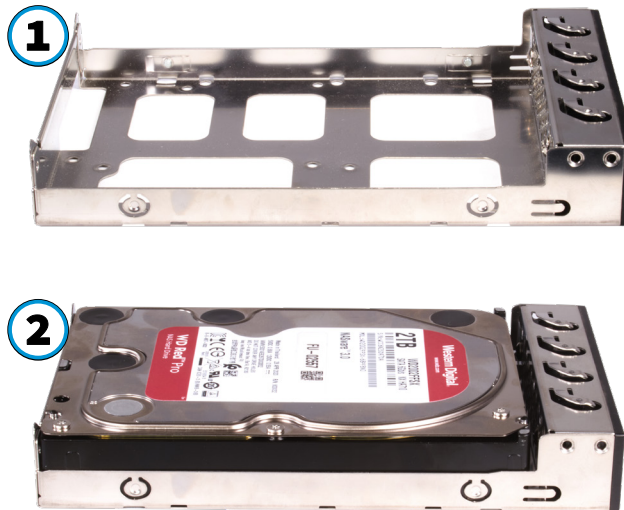


Anchor the unit in the rack on both sides with long M5 screws (3).

4 Install Drive Trays

TrueNAS appliances only support qualified hard drives and SSDs. Contact the Sales Team if you need more drives or replacements. Adding unqualified drives to the system voids the warranty. Call Support if drives are improperly installed in trays.

To add a new drive into an empty tray, place the tray on a flat surface (1) and push the hard drive into the tray (2). Make sure the connector is at the rear of the tray.



Drive trays are then installed in drive bays in the ES24 chassis.

Each drive bay in the chassis has two indicator lights to the right of the tray. The upper light is blue when the drive is active or a hot spare. The lower light is solid red if a fault has occurred.

Press the silver button on the drive tray to open the latch. Carefully slide the tray into a drive bay until the right side of the latch touches the metal front edge of the chassis, then gently swing the latch closed until it clicks into place.

All drive bays must be filled to maintain proper air flow for cooling. If fewer than 24 drives are connected, filler blanks must be placed in the empty bays.



5 Connect Power Cables

Do not plug the power cords into a power outlet yet. Connect a power cord to the back of one power supply. Place the cord in the plastic clamp and press the tab into the latch to lock it in place. Repeat the process for the second power supply and cord.



5.1 Programming the ES24 Power Loss Mode

The ES24 can be programmed to automatically restart if the power input has been lost and subsequently restored. By default, if the ES24 loses power it does not automatically start when power has been restored. The power button must be pressed to turn the system on. However, the ES24 can be set to automatically restart when power is restored to the system.

To activate this mode, quickly press the power button three times.

The power button blinks to indicate the current mode. When it is blinking quickly, the system automatically starts when power is restored. When the button is blinking slowly, you must manually power on the system after a power loss event. To test the current setting, disconnect the power, wait a few moments, and plug the system back in.



6 Connect SAS Cables

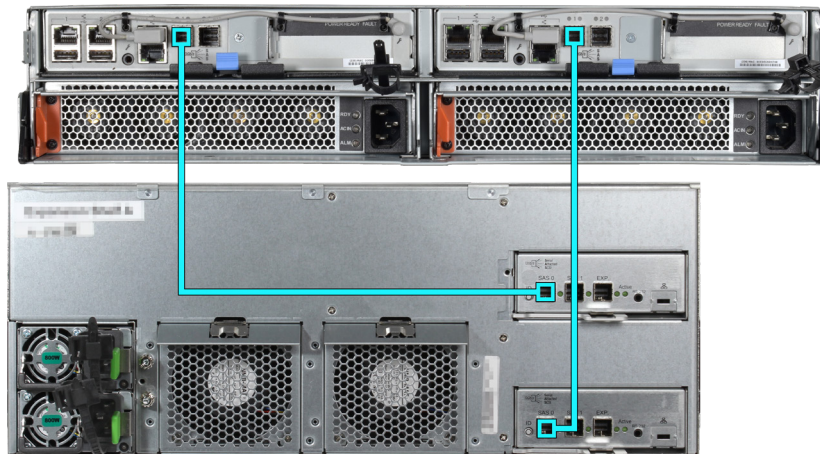
Plug the ES24 power cords into power outlets. **Wait two minutes for the drives to start.** The ES24 is compatible with several TrueNAS systems. Typical SAS cable connections for up to two ES12 expansion shelves on TrueNAS High Availability (HA) systems are shown here.

To set up SAS between your TrueNAS system and Expansion Shelves, cable the first port on the first TrueNAS Controller to the first port on the first Expansion Shelf Controller. High Availability systems require another cable from the first port on the second TrueNAS Controller to the first port on the second Expansion Shelf Controller. We **DO NOT** recommend other cabling configurations. Contact iX Support if you need other cabling methods.

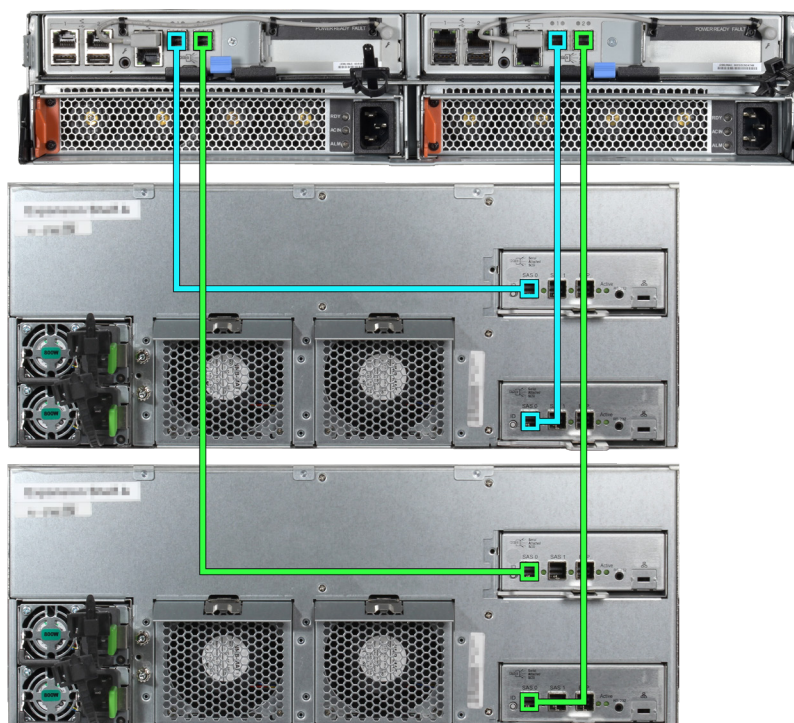
Warning: When setting up your SAS connections, please adhere to the wiring examples in this guide. Connecting expansion shelves incorrectly will cause errors. Never cable a single controller to different expanders on the same expansion shelf.

6.1 X-Series

X-Series with a single ES24 Expansion Shelf



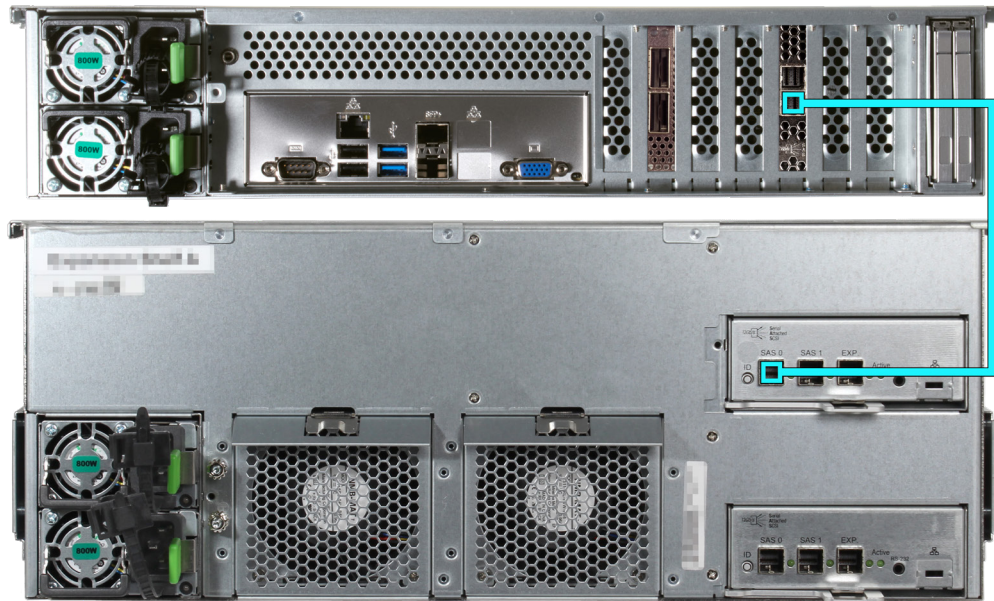
X-Series with two ES24 Expansion Shelves



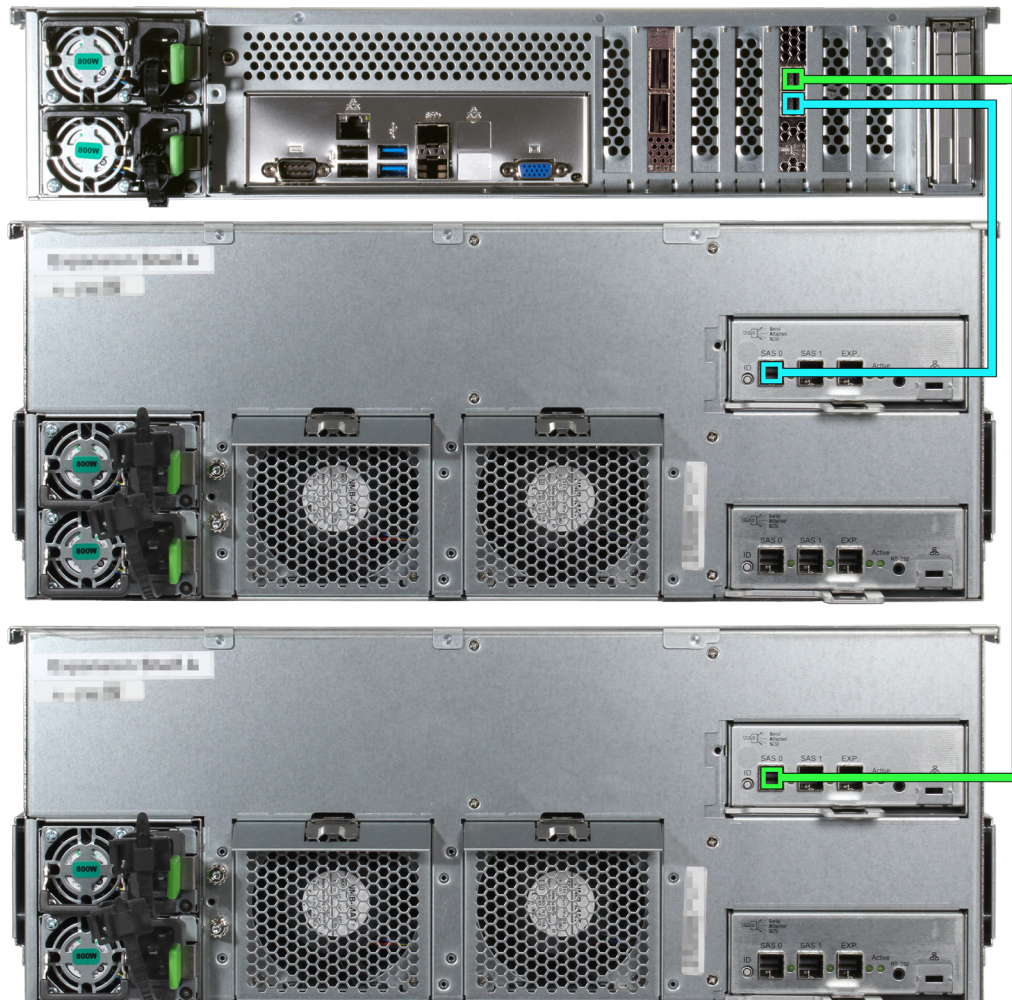
6.2 R-Series

6.2.1 R20

R20 with a single ES24 Expansion Shelf

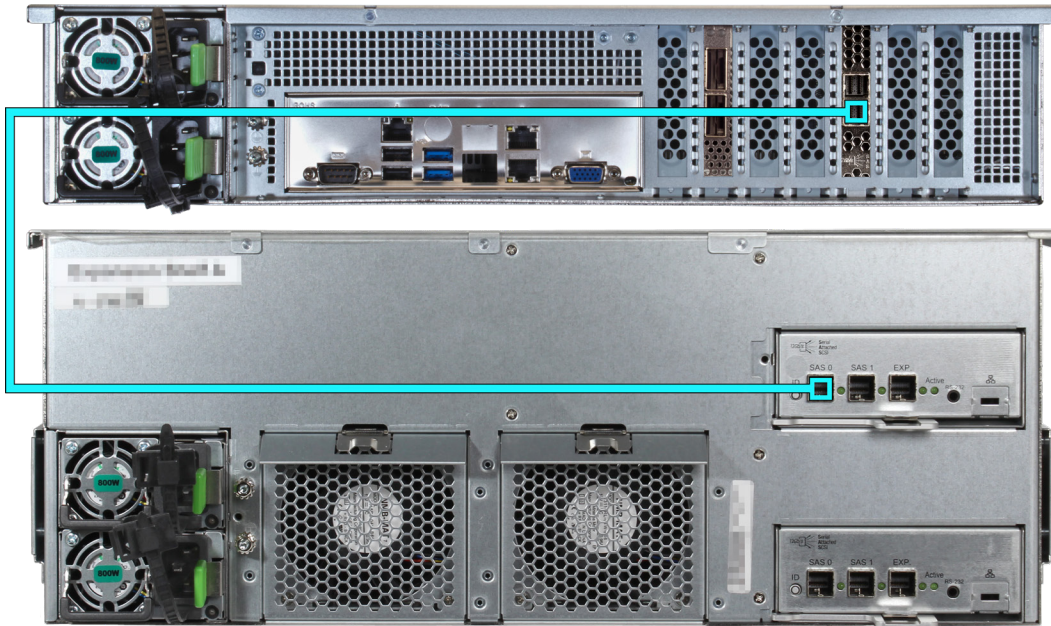


R20 with two ES24 Expansion Shelves

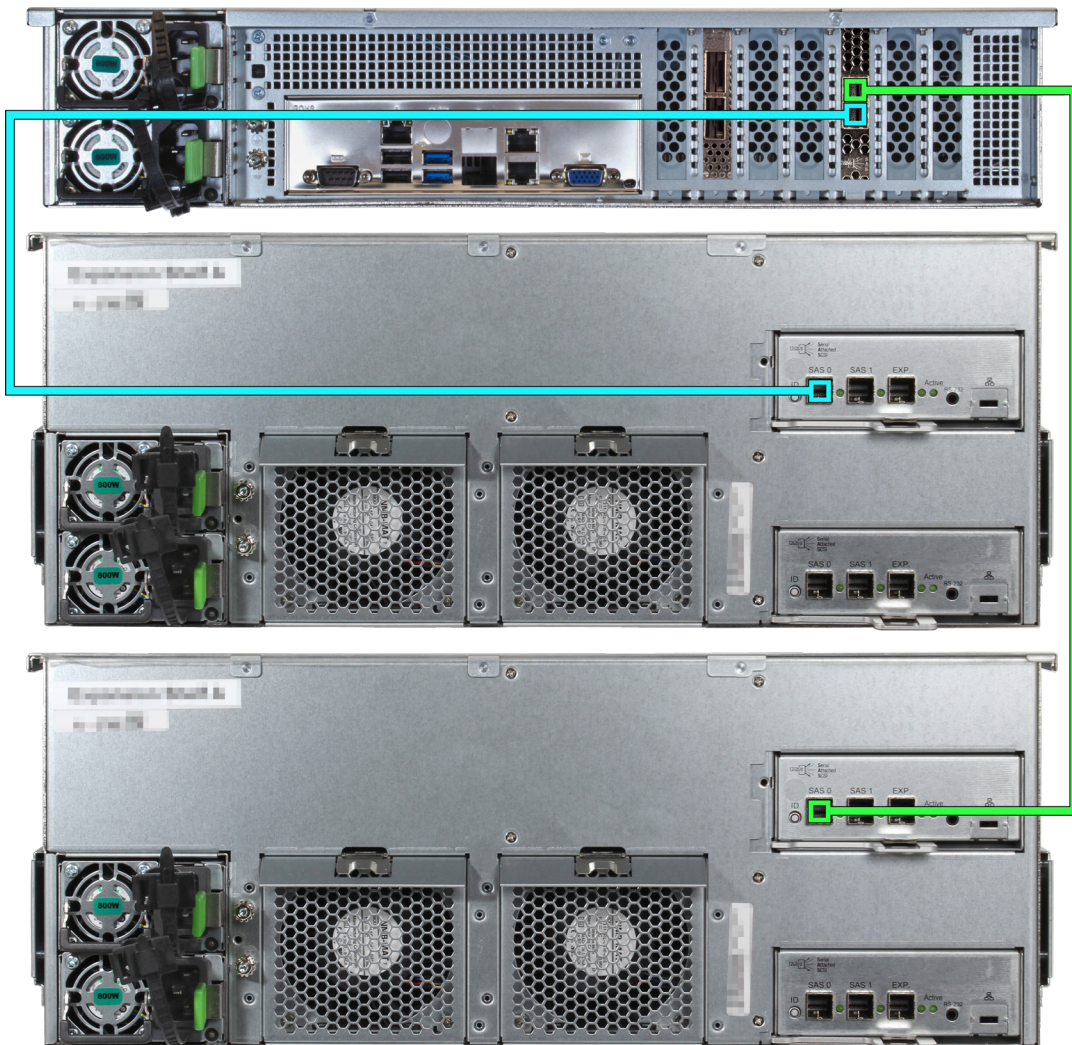


6.2.2 R40

R40 with a single ES24 Expansion Shelf

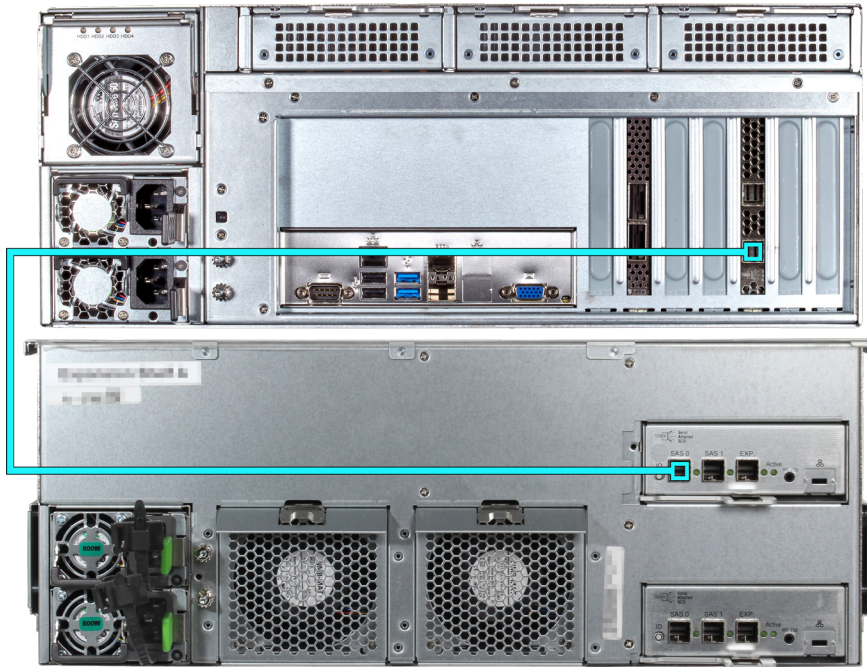


R40 with two ES24 Expansion Shelves

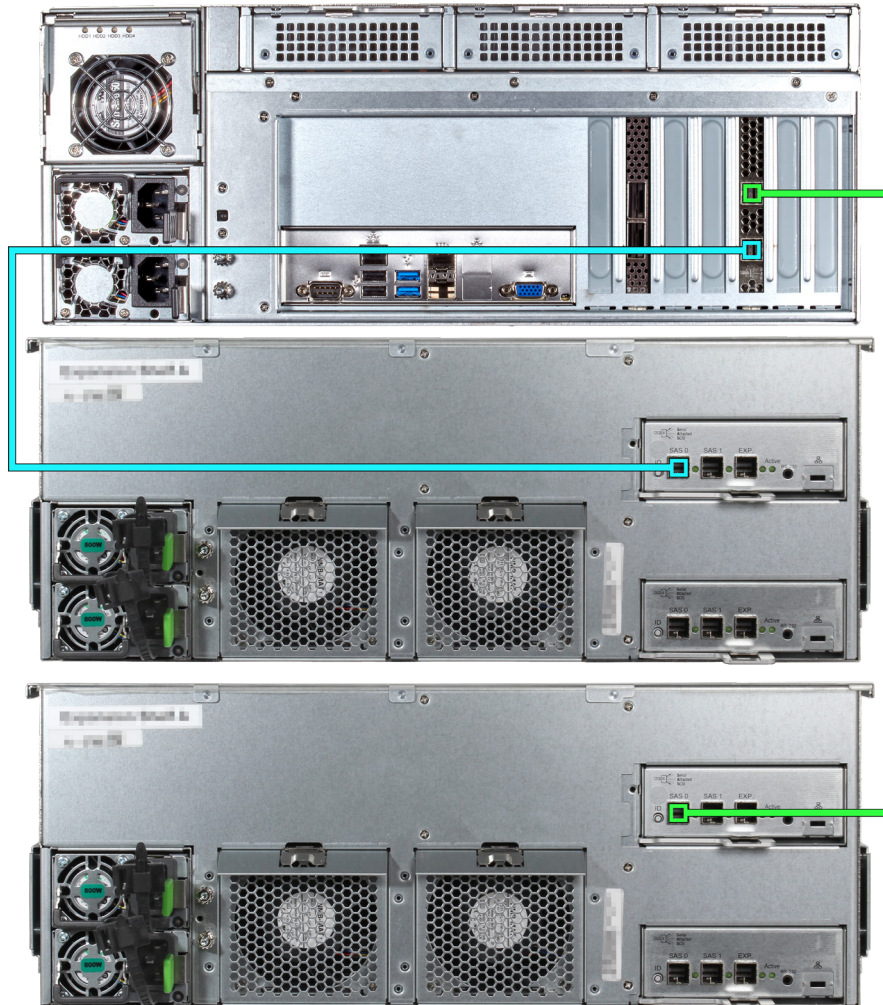


6.2.3 R50

R50 with a single ES24 Expansion Shelf



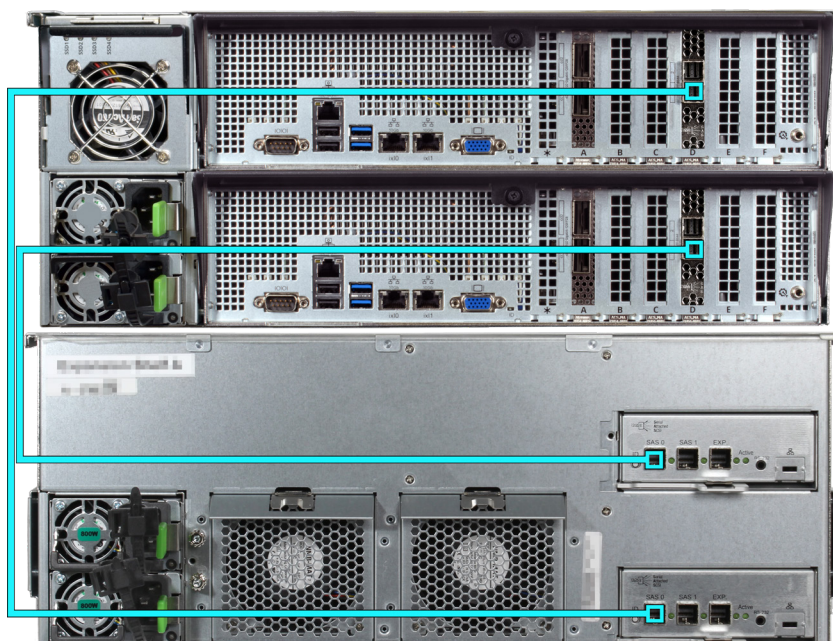
R50 with two ES24 Expansion Shelves



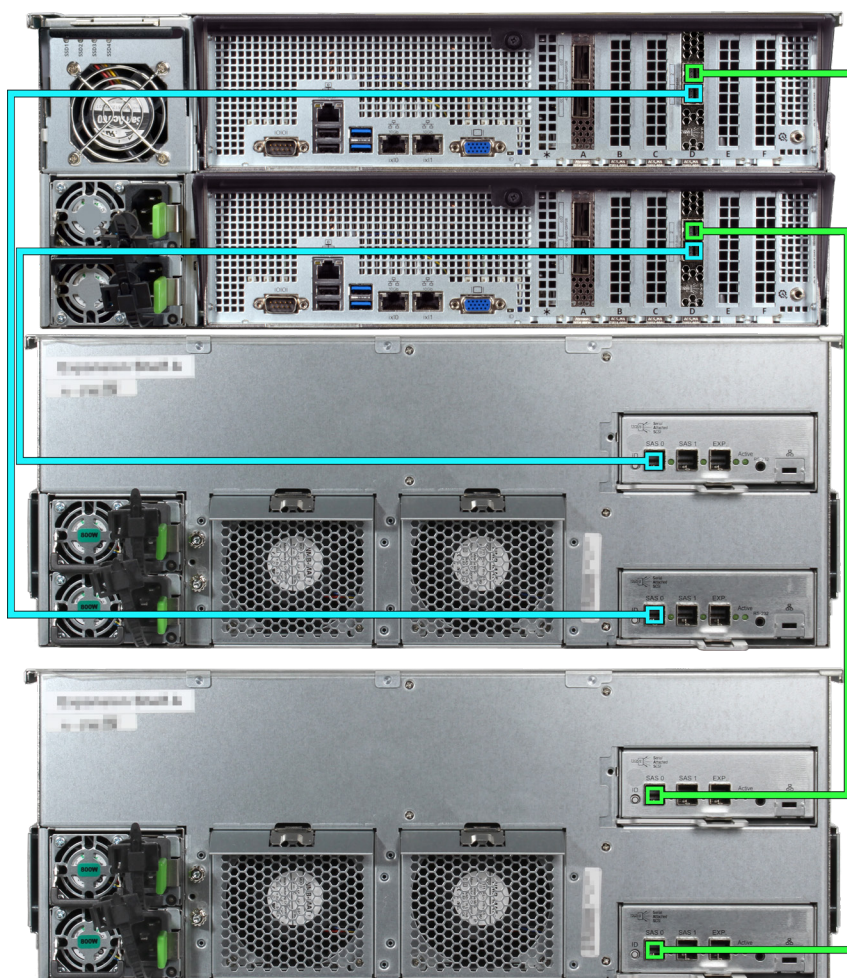
6.3 M-Series

6.3.1 M40

M40 with a single ES24 Expansion Shelf

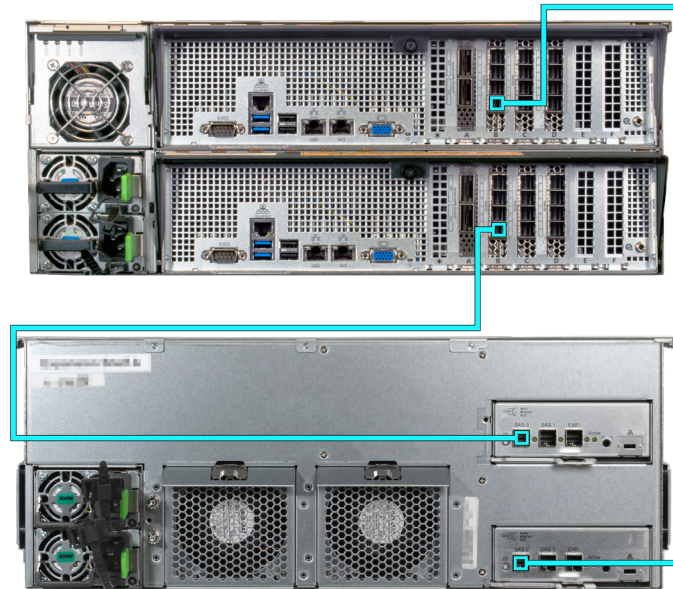


M40 with two ES24 Expansion Shelves

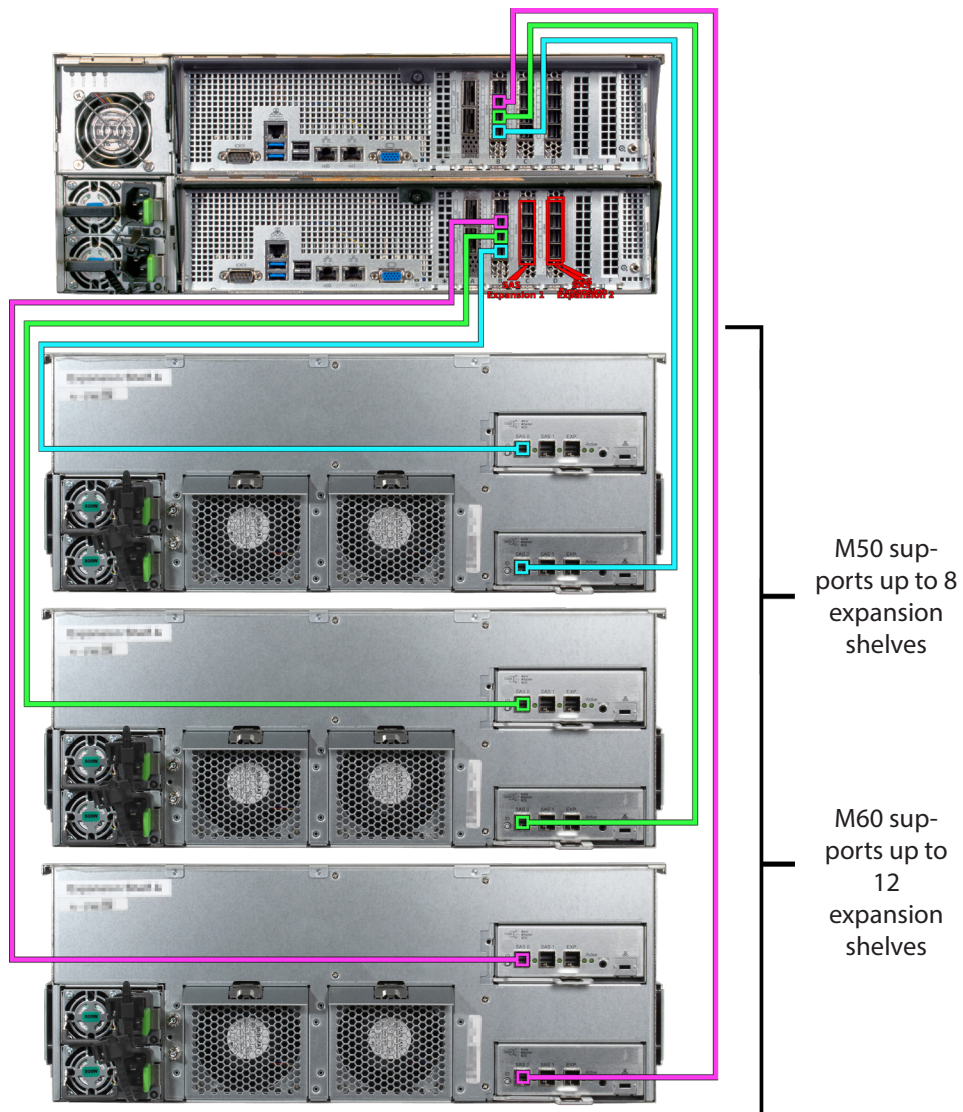


6.3.2 M50 and M60

M50 with a single ES24 Expansion Shelf



M50/M60 with three ES24 Expansion Shelves. The M50 can support up to 8 total Expansion Shelves with the use of additional SAS cards. The M60 can support up to 12 total Expansion Shelves with the use of additional SAS cards.



7 Additional Resources

The TrueNAS Documentation Hub has complete software configuration and usage instructions. Click **Guide** in the TrueNAS web interface or go directly to:

<https://www.truenas.com/docs/>

Additional hardware guides and articles are in the Documentation Hub's Hardware section:

<https://www.truenas.com/docs/hardware/>

The TrueNAS Community forums provide opportunities to interact with other TrueNAS users and discuss their configurations:

<https://www.truenas.com/community/>

8 Contacting iXsystems

For assistance, please contact iX Support:

Contact Method	Contact Options
Web	https://support.ixsystems.com
Email	support@ixsystems.com
Telephone	Monday-Friday, 6:00AM to 6:00PM Pacific Standard Time: <ul style="list-style-type: none">• US-only toll-free: 1-855-473-7449 option 2• Local and international: 1-408-943-4100 option 2
Telephone	Telephone After Hours (24x7 Gold Level Support only): <ul style="list-style-type: none">• US-only toll-free: 1-855-499-5131• International: 1-408-878-3140 (International calling rates will apply)