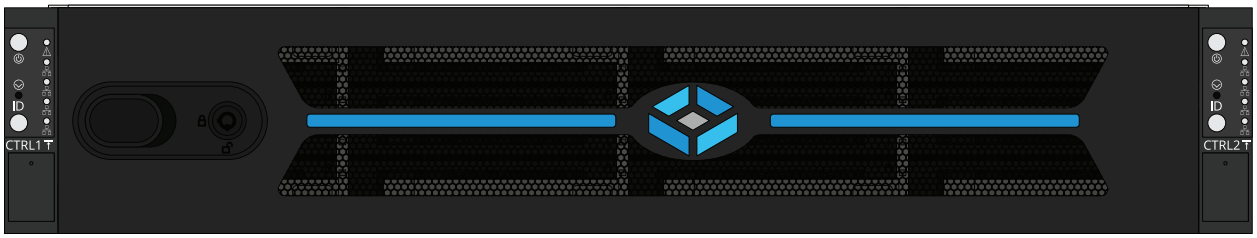
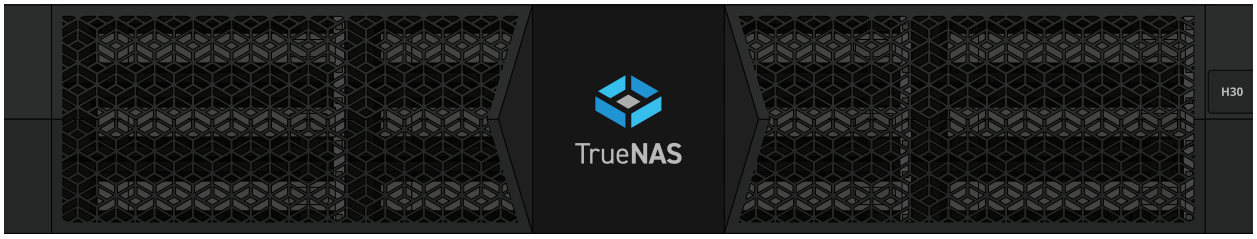
TrueNAS® H-Series User Manual

v.250101





Contents

1 Introduction

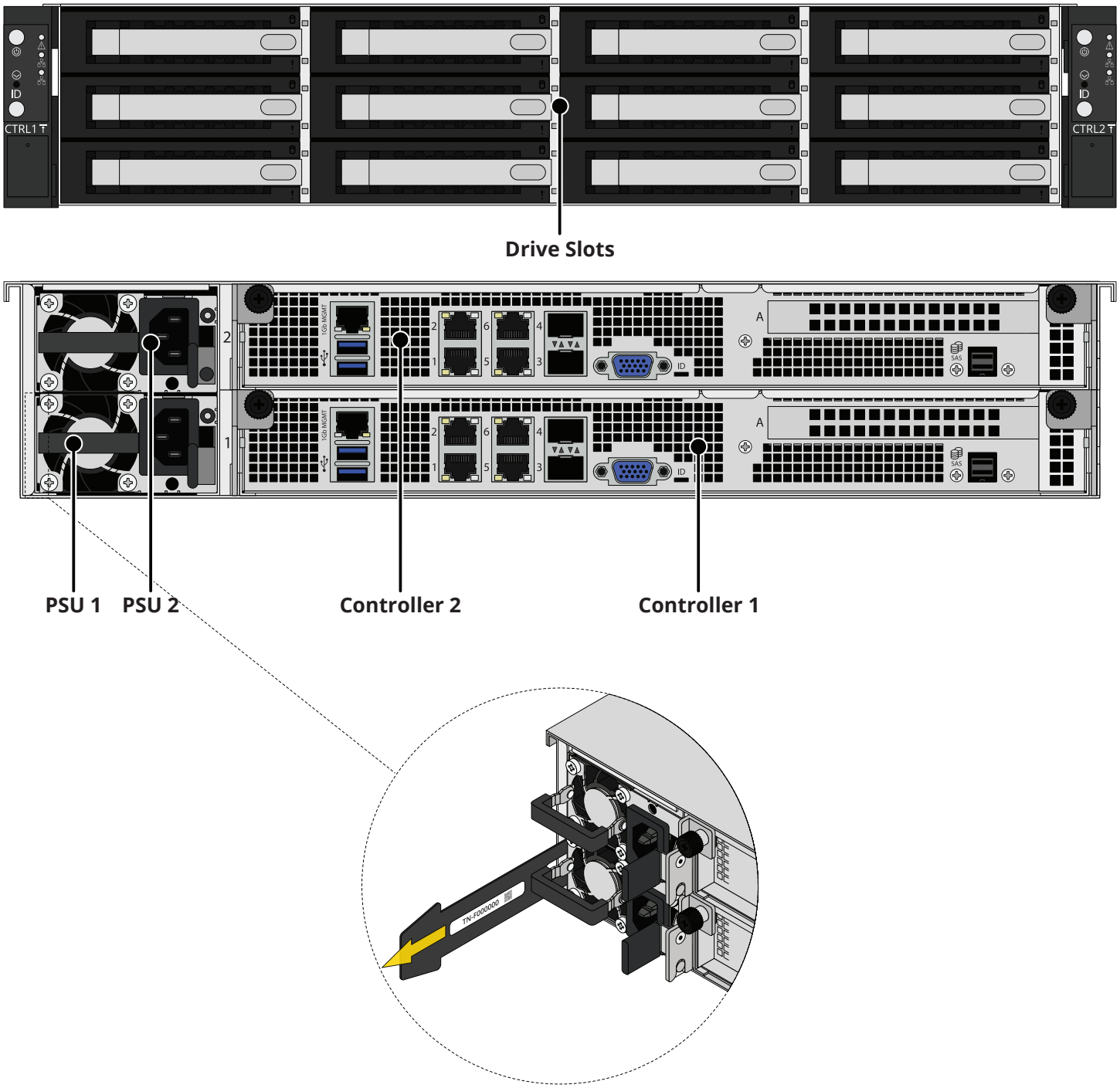
The TrueNAS H-Series is a 2U, 12-bay, High-Availability storage array with redundant power supplies.

You can find your system serial number on the pull-out black tab next to PSU1.

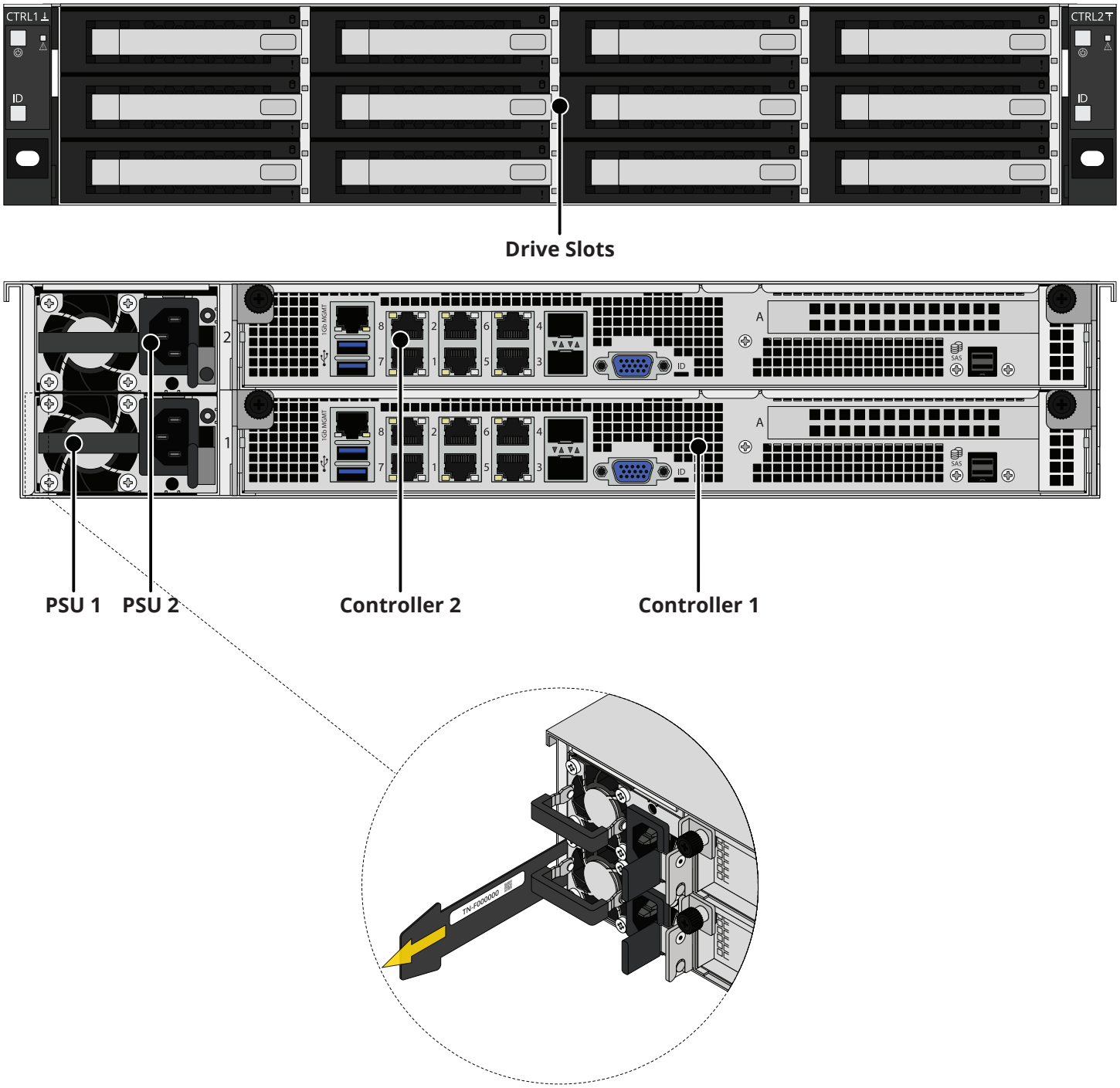
Your system comes with the TrueNAS operating system preloaded.

Review the safety considerations and requirements before interacting with the H-Series.

H10 and H20



H30


CTRL1
ID
CTRL2
ID
Drive Slots
2
1
1Gb MGMT
ID
A
SAS
PSU 1
PSU 2
Controller 2
Controller 1

2 Safety

2.2 Anti-Static Precautions

Warning - Electrostatic Discharge (ESD)

Static electricity can build up in your body and discharge when touching conductive materials. Electrostatic Discharge (ESD) is harmful to sensitive electronic devices and components. Keep these safety recommendations in mind before opening the system case or handling non-hot-swappable system components.

- Turn off the system and remove power cables before opening the case or touching internal components.
- Place the system on a clean, hard work surface like a wooden tabletop. Use an ESD dissipative mat if possible to protect the internal components.
- Touch the metal chassis with your bare hand to dissipate static electricity in your body before handling any internal components, including components not yet installed in the system. We always recommend wearing an anti-static wristband and using a grounding cable.
- Store all system components in anti-static bags.

2.3 Personal Protective Equipment (PPE)

Warning - PPE

Wear proper PPE, like anti-static wrist straps and smocks before touching any sensitive equipment inside the chassis. If you are unsure how to properly replace any parts, contact iXsystems Support.

2.4 Handling the System

Hold the system from the sides or bottom whenever possible. Always be mindful of loose cabling or connectors, and avoid pinching or bumping these elements.

These instructions use “left” and “right” according to your perspective when facing the system or rack.

Warning - Damage or Injury

The H-Series weighs 67 lbs (30.4 kg) fully-loaded and requires a minimum of **two** people to lift.

When handling rails, system components, or drives, never force movement if a component seems stuck. Gently remove the component and check for pinched cables or obstructing material before installing it again. Installing a component with excessive force can damage the system or cause personal injury.

3 Recommended Tools

We recommend these tools when interacting with the TrueNAS H-Series:

- Long #2 Phillips head screwdriver
- Tape measure
- Level

4 Specifications

Drive Count	12 3.5-inch SAS HDDs or SSDs	
Cooling Fans	4	
Power Supplies (200v)	2	
Power Distribution Requirements	100V - 240V	
Controllers	2	
Dimensions (H x W x L)	3.5” x 19” x 26.8”	89mm x 483mm x 681mm
Net Weight (Fully Loaded)	67 lbs	30.4 kg
Operating Temperature	41°F - 95°F	5°C - 35°C
Non-Operating Temperature	-22°F - 140°F	-30°C - 60°C

4.1 H-Series Models

	H10	**H20**	**H30**
Processor	Quad-Core	Deca-Core	Icosa-Core
RAM (Max)	64 - 128 GB	128-256 GB	256
Read Cache (Max)	1600 GB SAS SSD	2x 1600 GB SAS SSD	2x 1600 GB SAS SSD
Write Cache (Max)	16 GB SAS SSD	2x 16 GB SAS SSD	2x 16 GB SAS SSD
Onboard Networking	4x 1GBase-T	4x 1GBase-T	2x 10GBase-T 4x 1GBase-T
Additional Networking (Optional)	Up to 4x 10/25GbE	Up to 4x 10/25GbE or 2x 10/25GbE + 2x 40/100GbE	Up to 4x 10/25GbE or 2x 10/25GbE + 2x 40/100GbE
Max Storage (Raw)	1.5 PB	2.5 PB	2.5 PB
Storage Expansion	1x ES24/F or ES60	1x ES24/F, ES60, or ES102	1x ES24/F, ES60, or ES102
Average Power Draw	200W	300 Watts	300 Watts
Peak Power Draw	250W	350 Watts	350 Watts
Max Heat Output	700 BTU/h	1000 BTU/h	1000 BTU/h

5 Space Requirements

Note - Rack Space

The H-Series requires 2U of rack space and a #2 Phillips head screwdriver to install in a rack.

The system is 26.7” (68 cm) long. Rack posts must be 23” - 35.75” (58.4 cm-90.8 cm) apart to install the rail kit.

You must have at least 27” (68.58 cm) of space in front of the rack to safely install the H-Series.

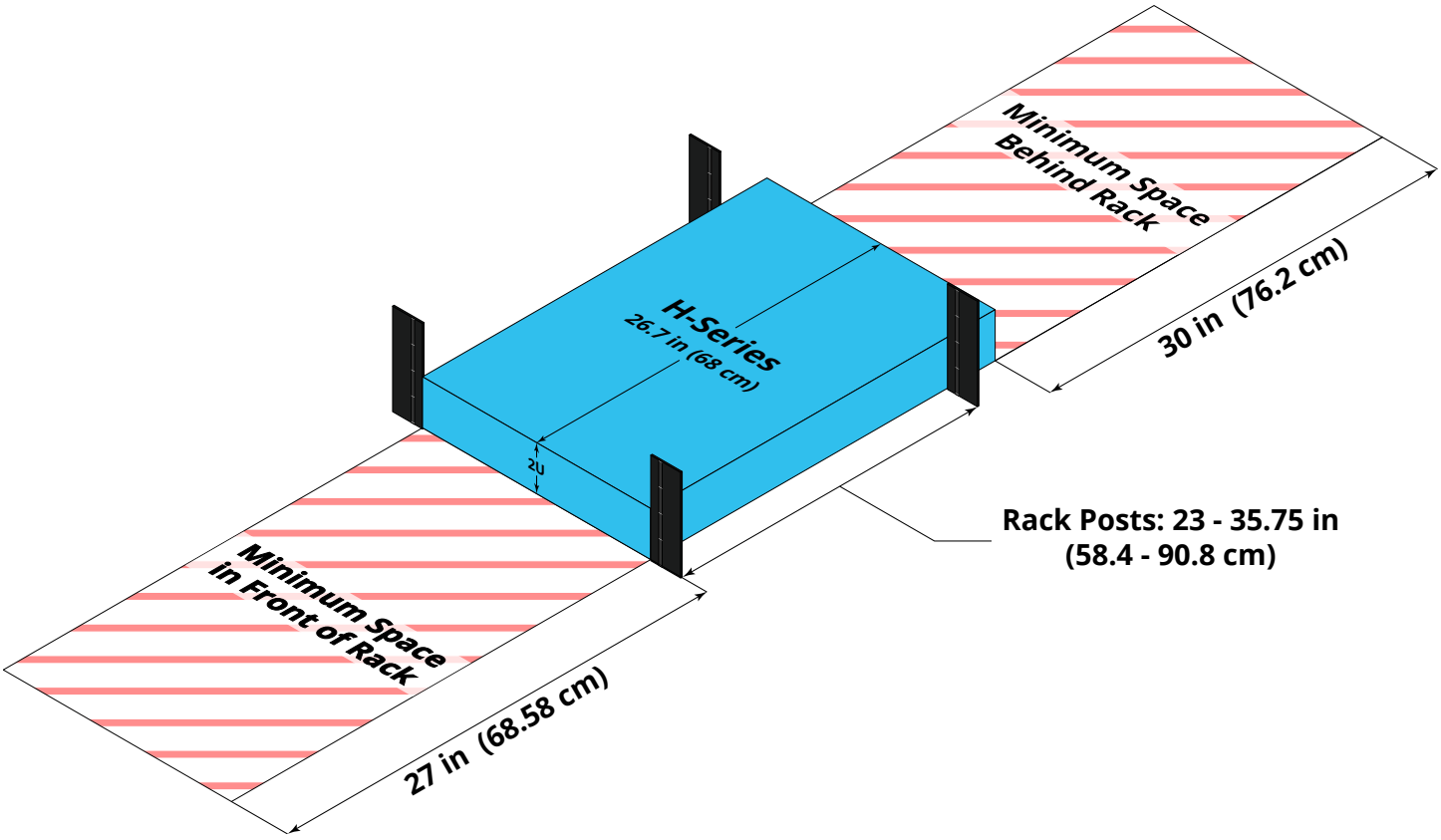
You must also have at least 30” (76.2) of space behind the rack to install the cables.

Important - Damage or Injury

When handling rails, system components, or drives, never force movement if a part seems stuck or does not insert properly. Gently remove the part and check for pinched cables or obstructing material before installing it again. Installing a part with excessive force can damage the system or cause personal injury.

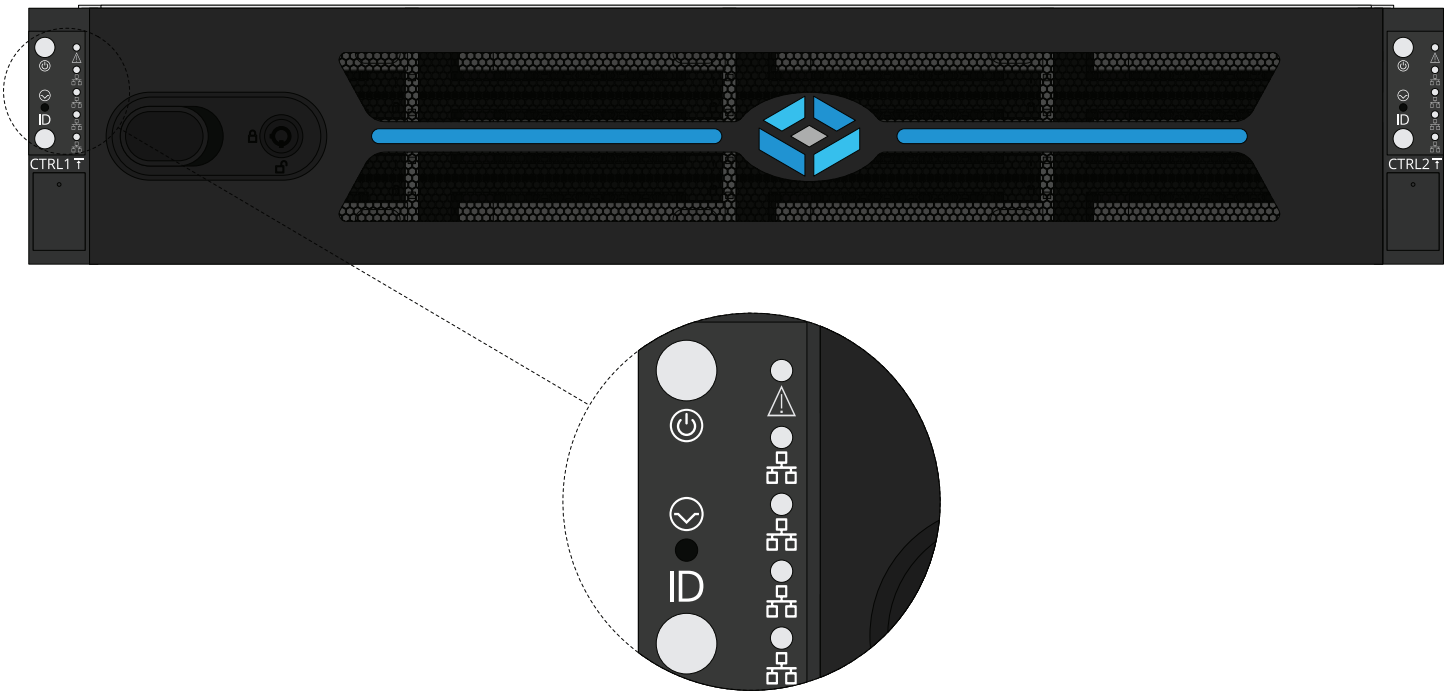
Warning - Team Lift

The H-Series requires two people to lift safely. Failure to follow safety recommendations can lead to severe system damage or personal injury.



6 Buttons and LED Indicators

6.1 H10 and H20 Front Indicators and Buttons

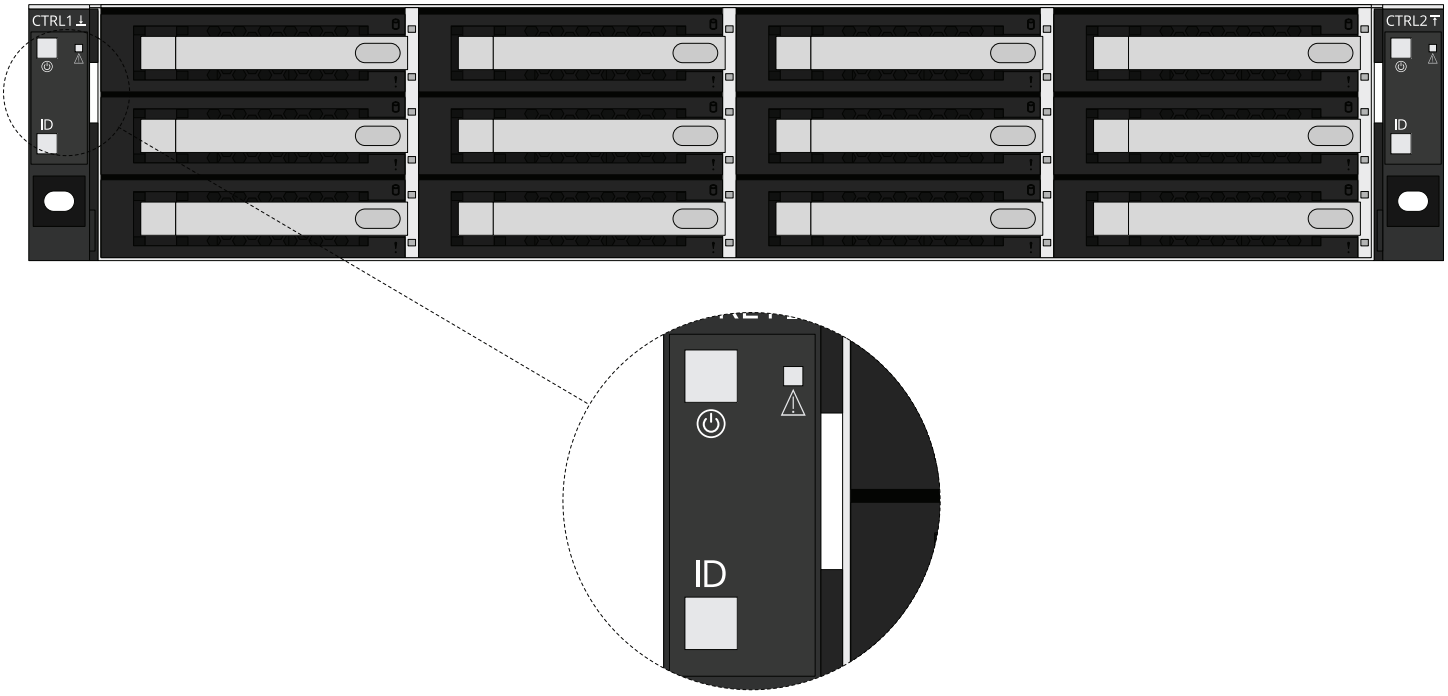


Light / Button	Function	Color and Indication
⏻	To restart the system, press and hold for three seconds before releasing. To shut down the system, press and hold for five seconds before releasing.	Blue (Solid): System Ready Off, No Light (Solid): System Powered Off
⌔	Resets the system	N/A
ID	Activates Locate ID	Blue (Flashing): Locate ID active
⚠	N/A	Red (Flashing): Fan or PSU Fault Red (Solid): Overheat Condition
🖧	N/A	Amber (Flashing): Link Active

6.2 H10 and H20 Drive Indicators

Light	Color and Indication
🛢	Blue (Flashing): Disk Activity
!	Amber (Solid): Drive Fault

6.3 H30 Front Indicators and Buttons



Light / Button	Function	Color and Indication
⏻	To restart the system, press and hold for three seconds before release. To shut down the system, press and hold for five seconds before release.	Blue (Solid): System Ready Off, No Light (Solid): System Powered Off
ID	Activates Locate ID	Blue (Flashing): Locate ID active
⚠	N/A	Red (Flashing): Fan or PSU Fault Red (Solid): Overheat Condition

6.4 H30 Drive Indicators

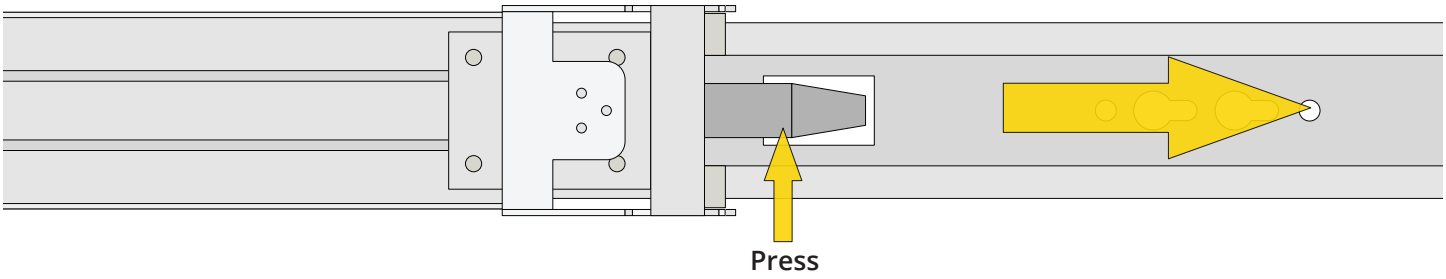
Light	Color and Indication
⛁	Blue (Flashing): Disk Activity
!	Amber (Solid): Drive Fault

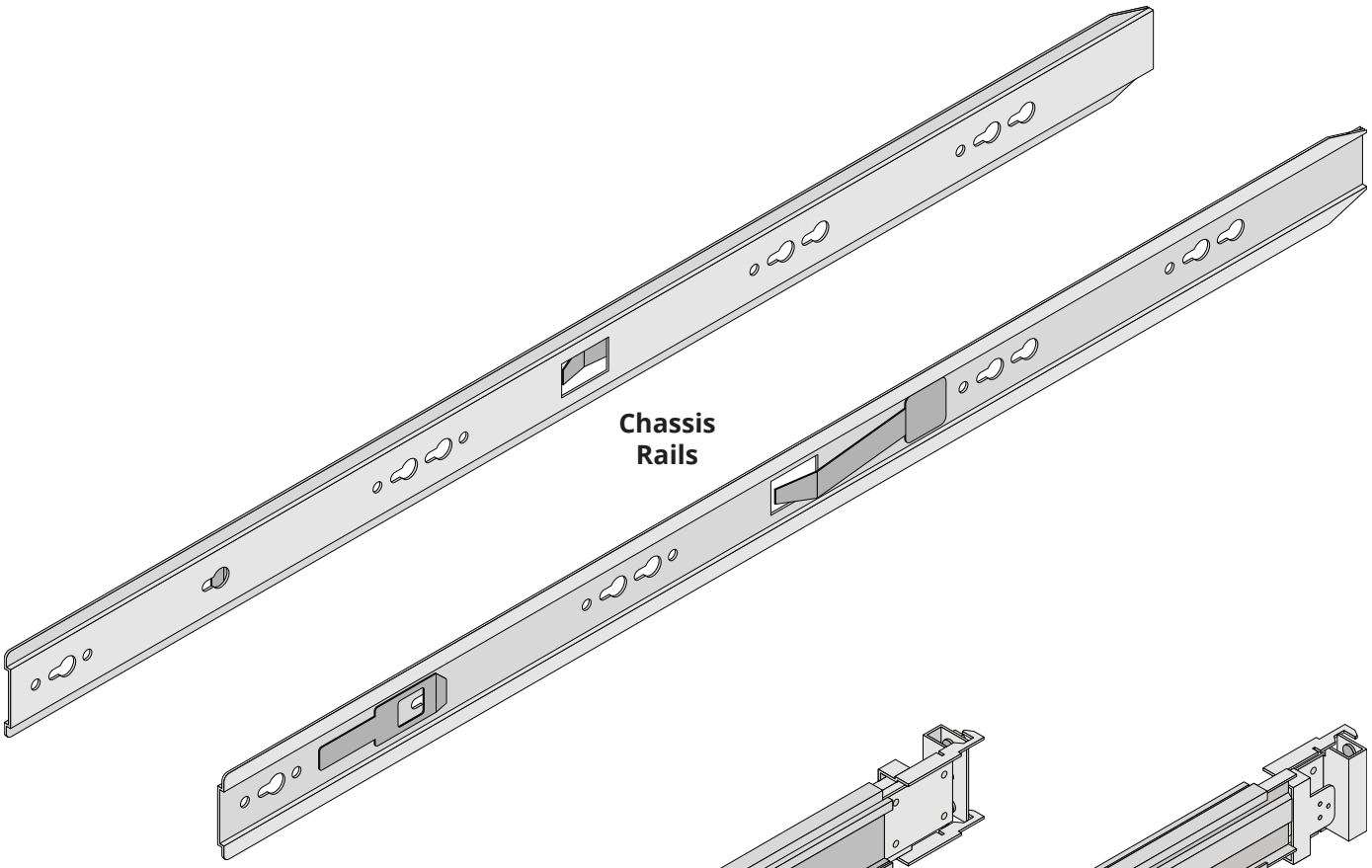
7 Racking Procedure

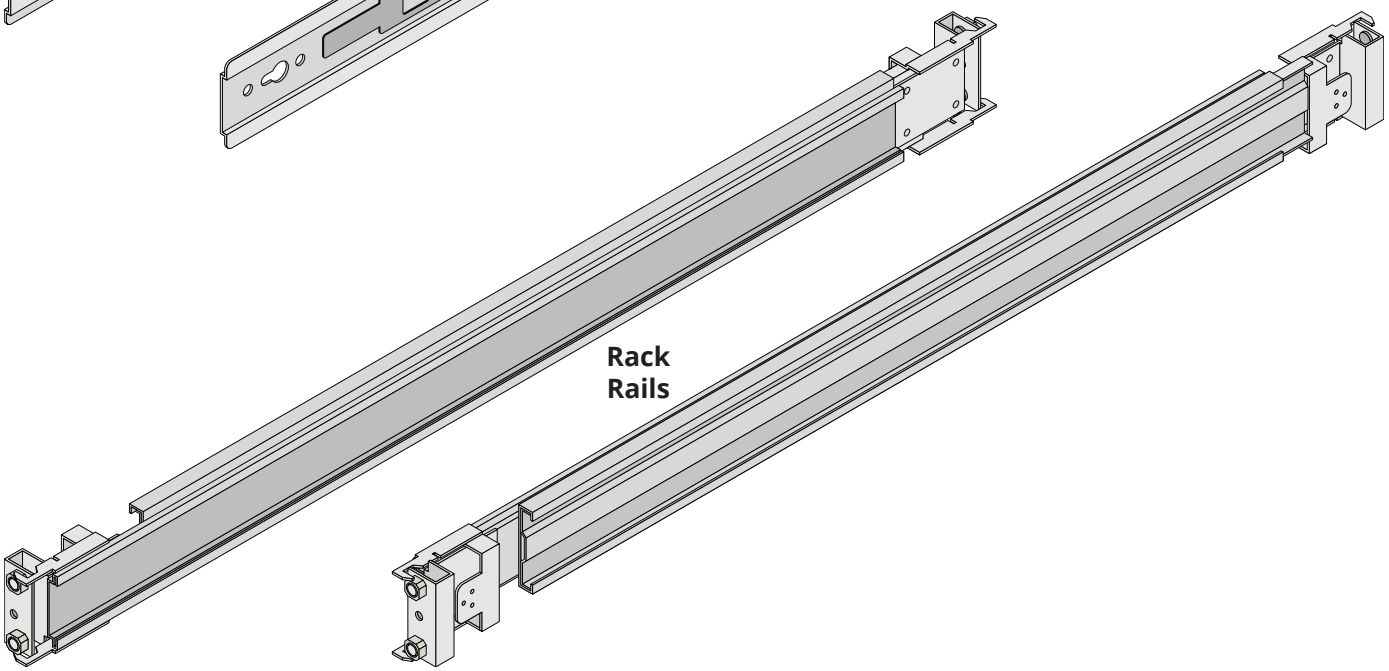
7.1 Remove Chassis Rail from Rack Rail

The rail kit separates into two pieces, the inner chassis rail and the outer rack rail.

Slide the chassis rail out of the rack rail until it stops, then push the metal safety catch and remove the chassis rail.

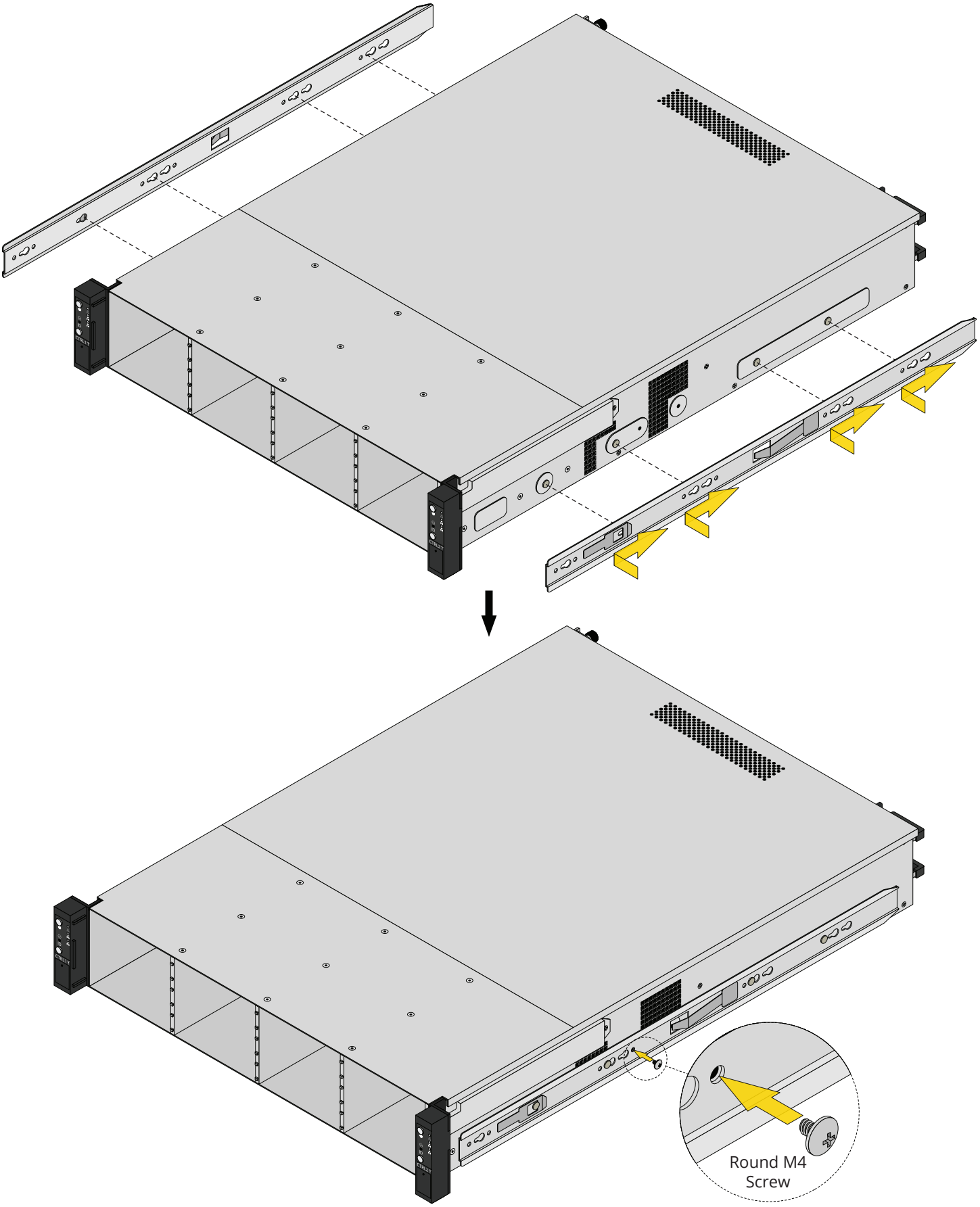






7.2 Install the Chassis Rail on the System

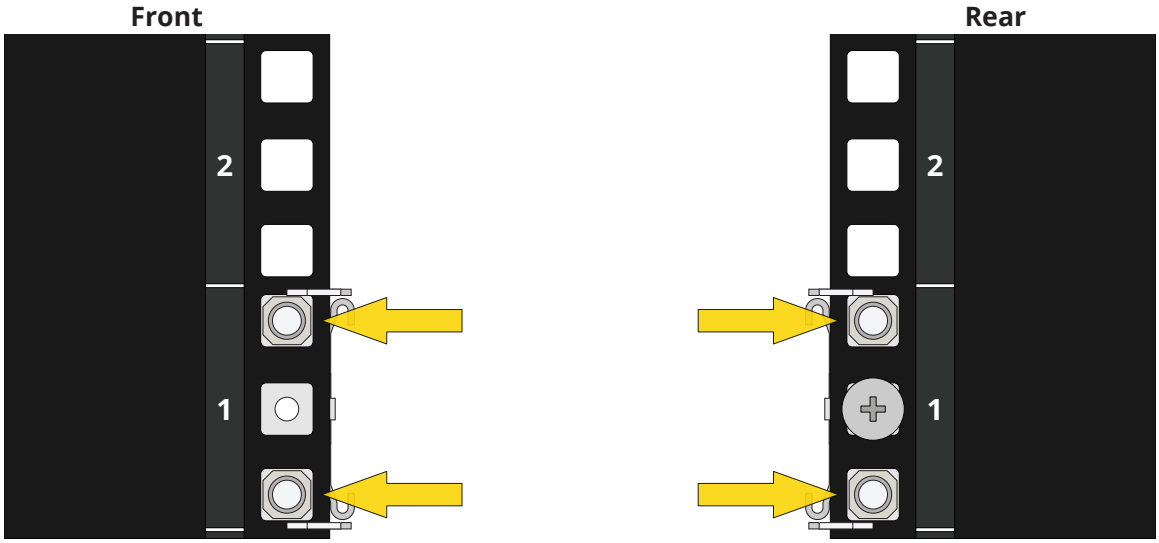
Fit the rail keyholes over the mounting pegs on the system and slide the rail toward the back of the system until it locks. Use a round M4 rail screw to secure the rail to the chassis. Repeat the process for the second chassis rail.

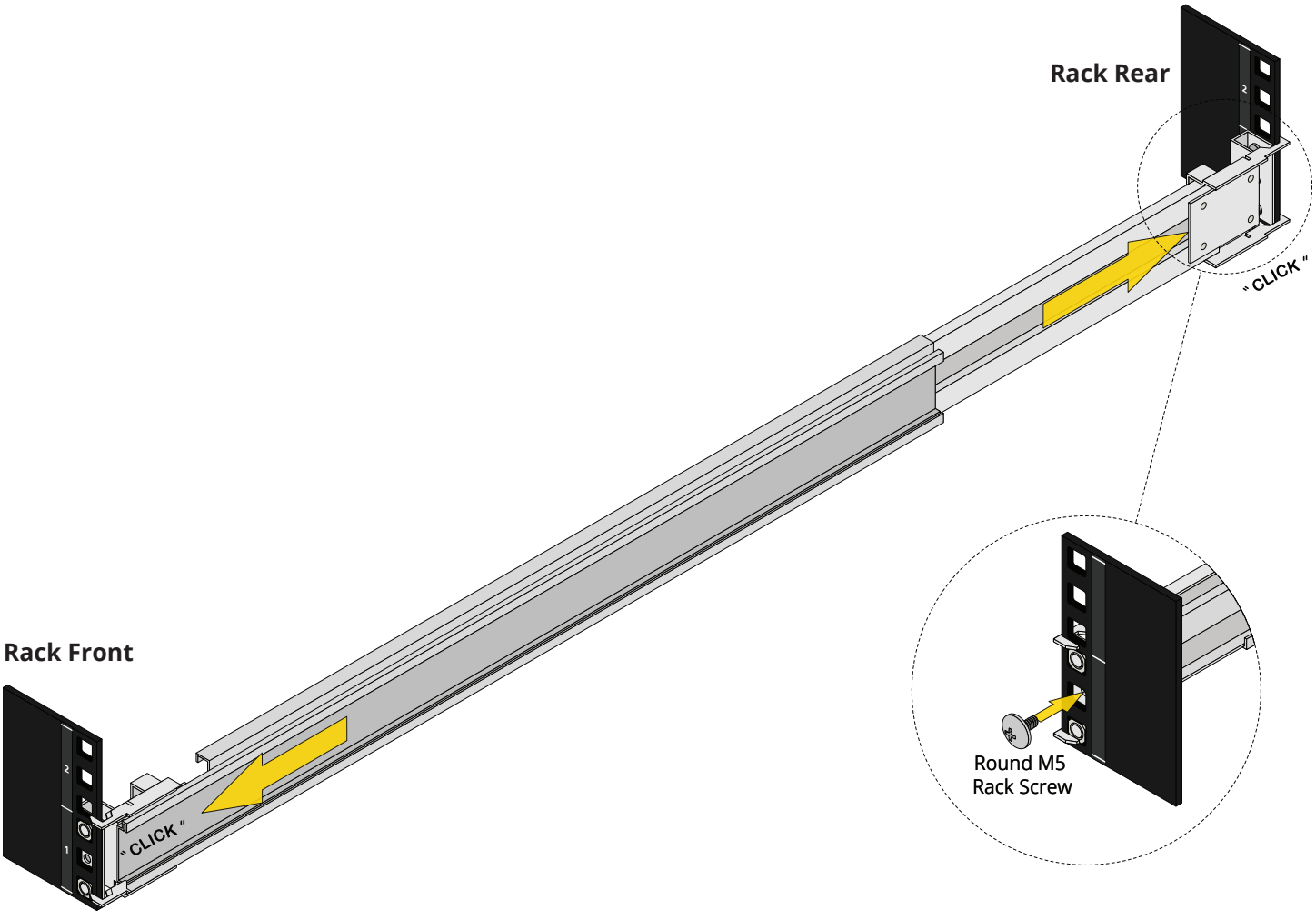


7.3 Install the Rack Rail in the Rack

Align the rail end stamped “FRONT” with the front of the rack. Face the “FRONT” text inside the rack so the chassis rails can slide into the rack rails. Align the rail front pegs with the top and bottom holes in the bottom 1U and push the rail into the holes until the spring latch locks the rail in place.

After you install the front of the rail, extend the back of the rack rail towards the equivalent attach points on the rear rack post. Make sure the rail remains level from front to back. Repeat this process to install the other rack rail.



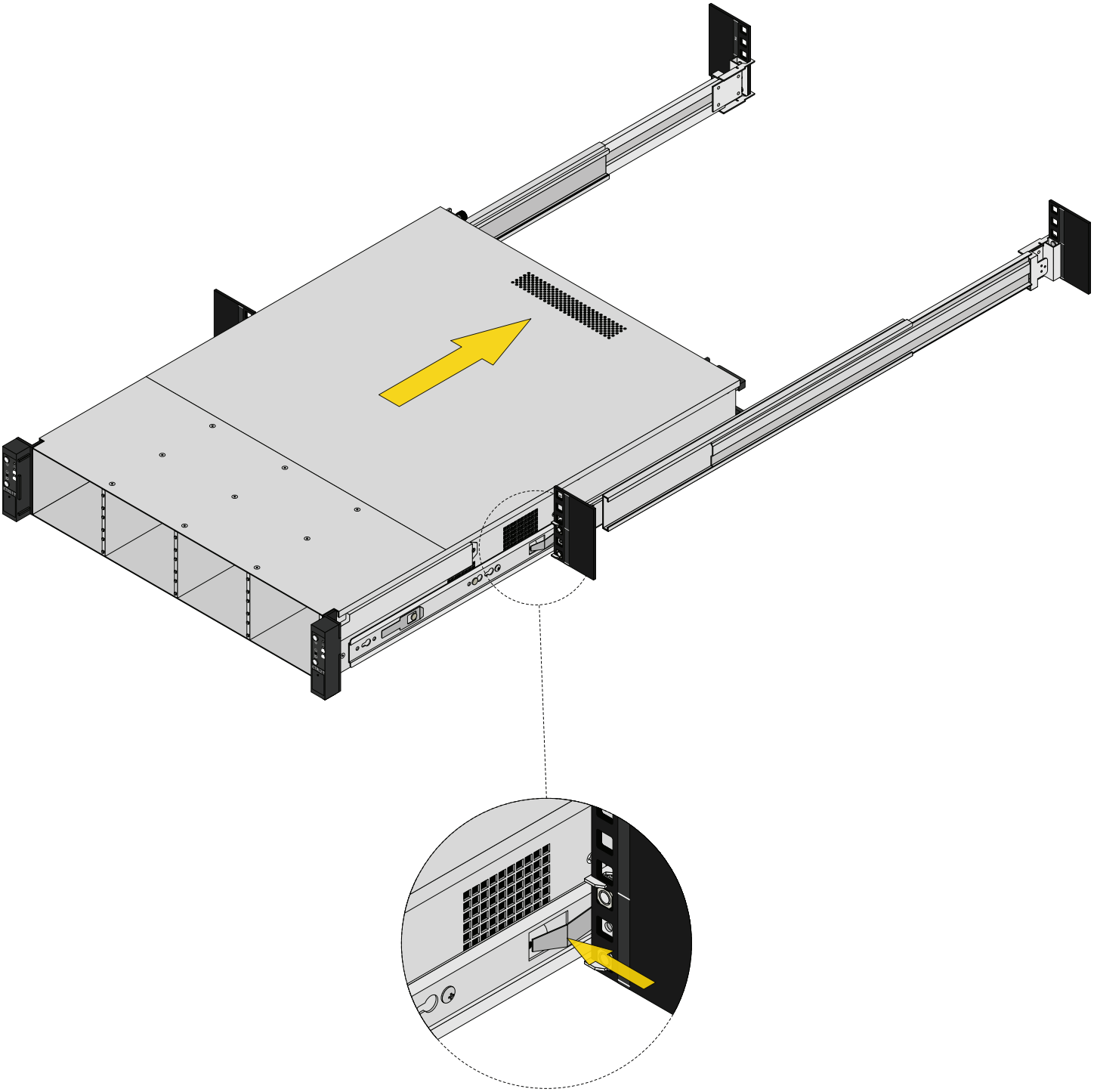


7.4 Install the System in the Rack

Team-lift the system and align the chassis rails with the rack rails.

Slide the ends of the chassis rails into the rack rails and push the system into the rack until the metal safety catches on the chassis rials click and lock the system into place.

Squeeze the safety catches against the sides of the system and slide the system into the rack.

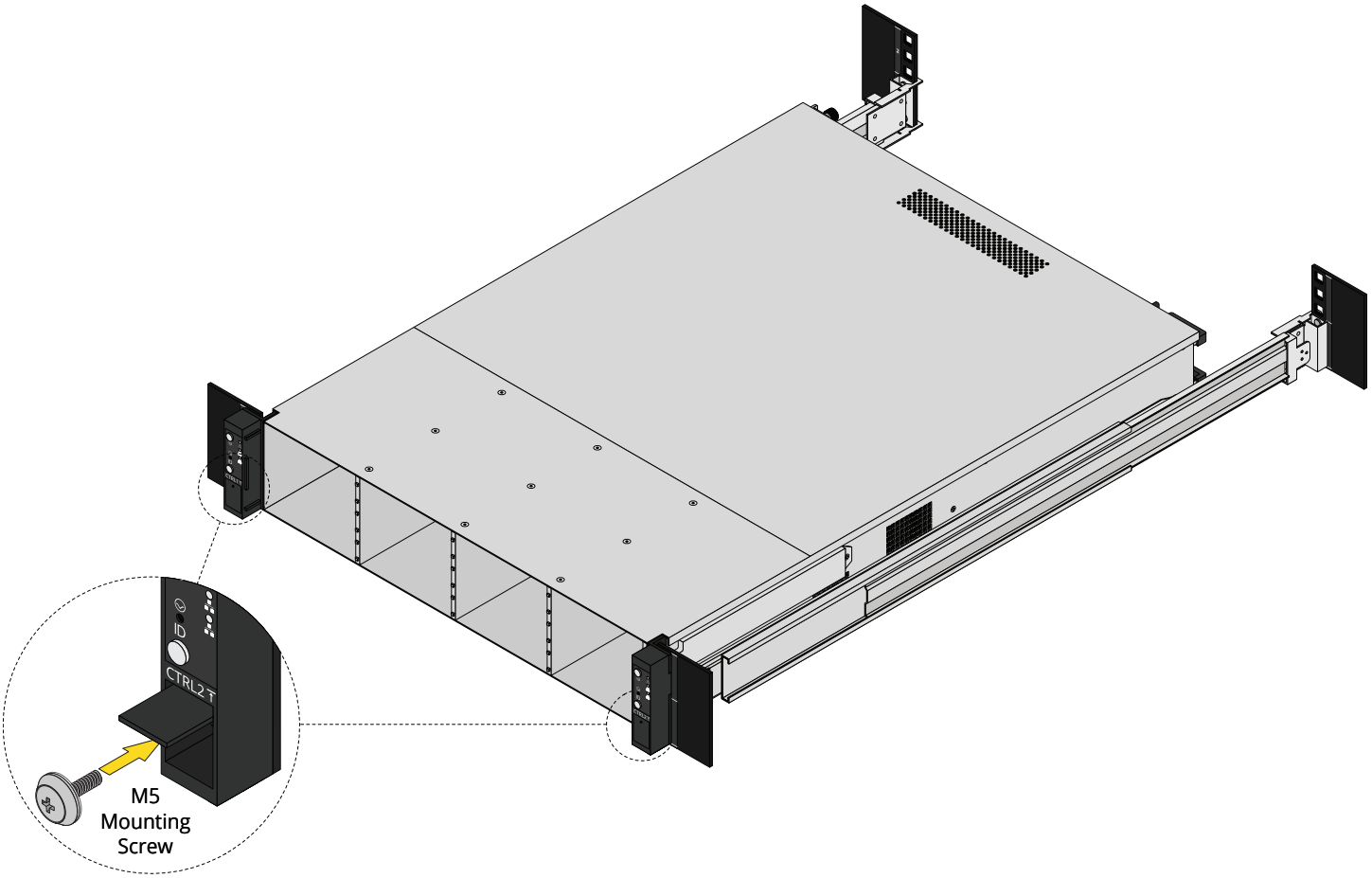


7.5 Secure the System to the Rack

7.5.1 Secure the H10 or H20 to the Rack

The rail kit includes several round M5 rack screws you can use to secure the chassis ears to the rack.

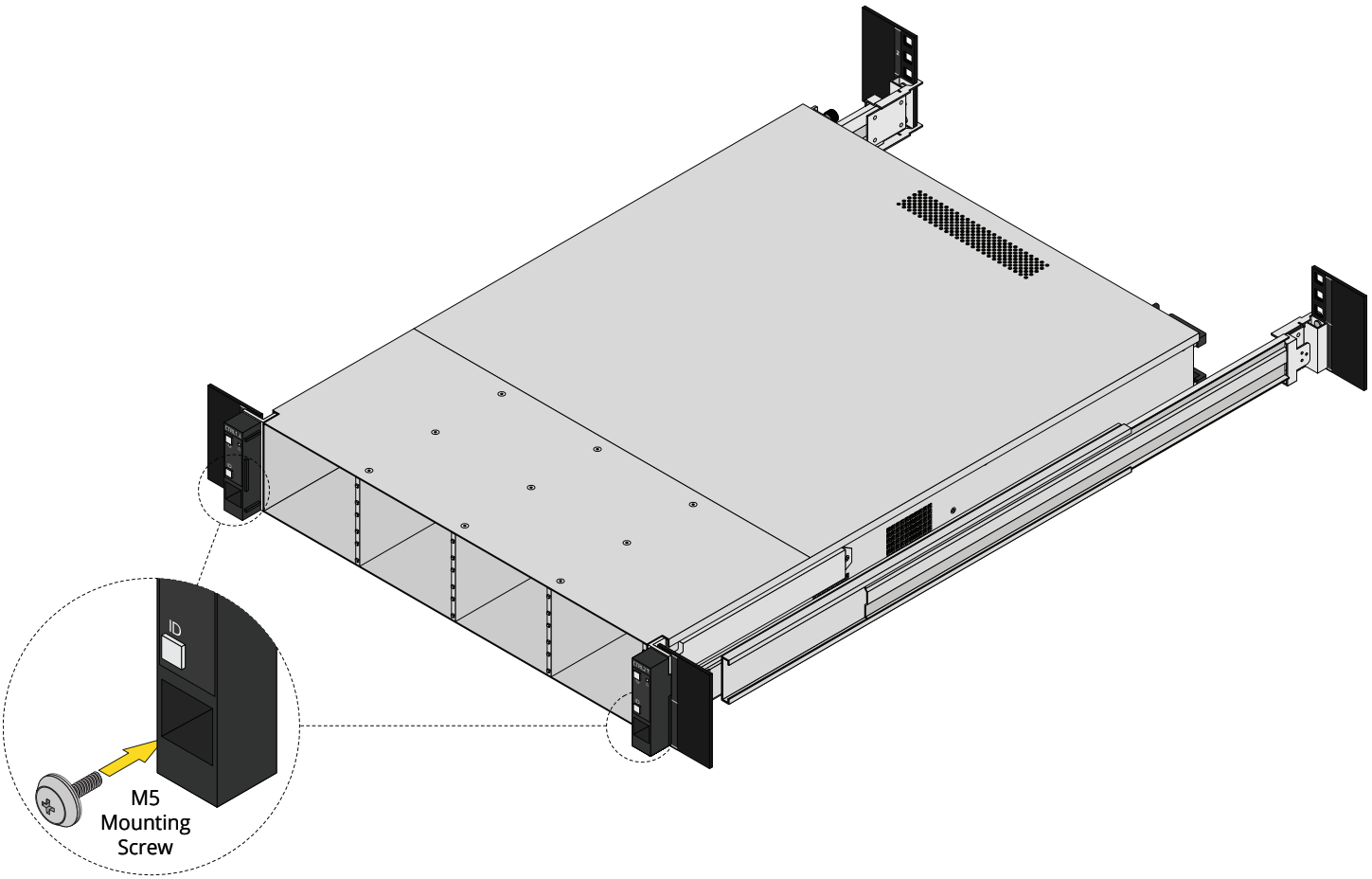
Push in the hinged doors on each ear to open them, then install the round M5 rack screws.



7.5.2 Secure the H30 to the Rack

The rail kit includes two M5 mounting screws you can use to secure the chassis ears to the rack.

Locate the mounting points on each ear, then install the M5 mounting screws.



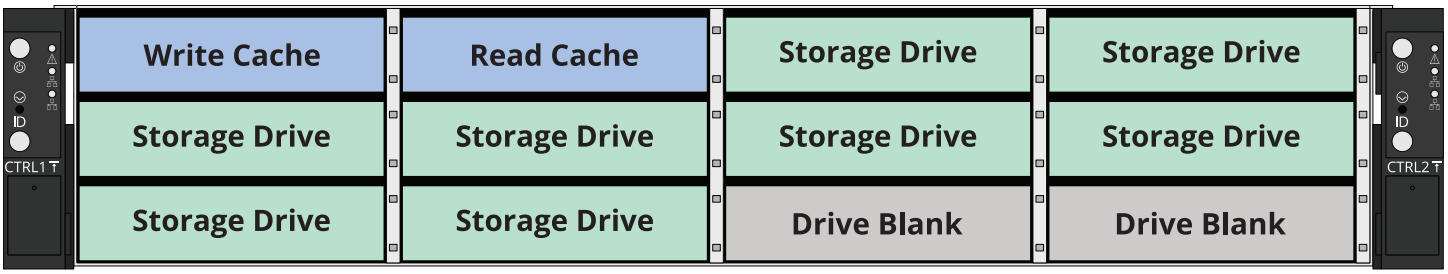
7.6 Install Drives

Tip - Drive Population

We recommend a standard drive tray installation order to simplify support:

- SSD drives for write and read caches (if present)
- HDDs or SSDs for data storage
- Drive Blanks to maintain proper airflow for remaining empty bays (if present)

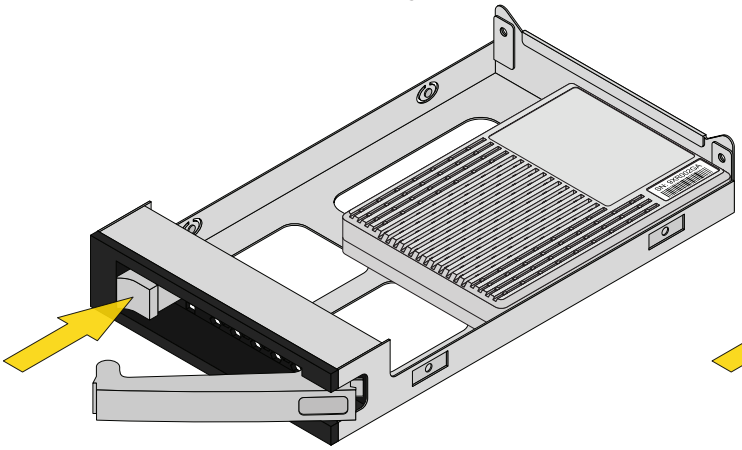
Install the first drive in the top left bay. Install the next drive to the right of the first. Install remaining drives to the right across the row. After filling a row, move down to the next row and start again with the left bay.



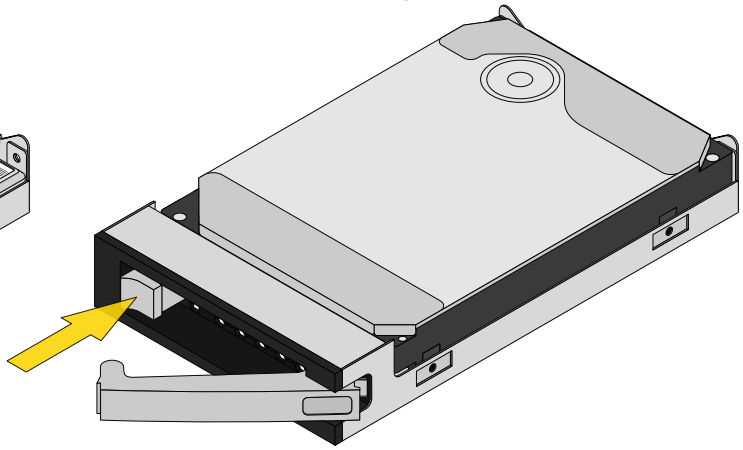
Retrieve a drive assembly and press the locking arm release on the left side of the tray. Drive trays either contain HDDs or SSDs depending on your order.

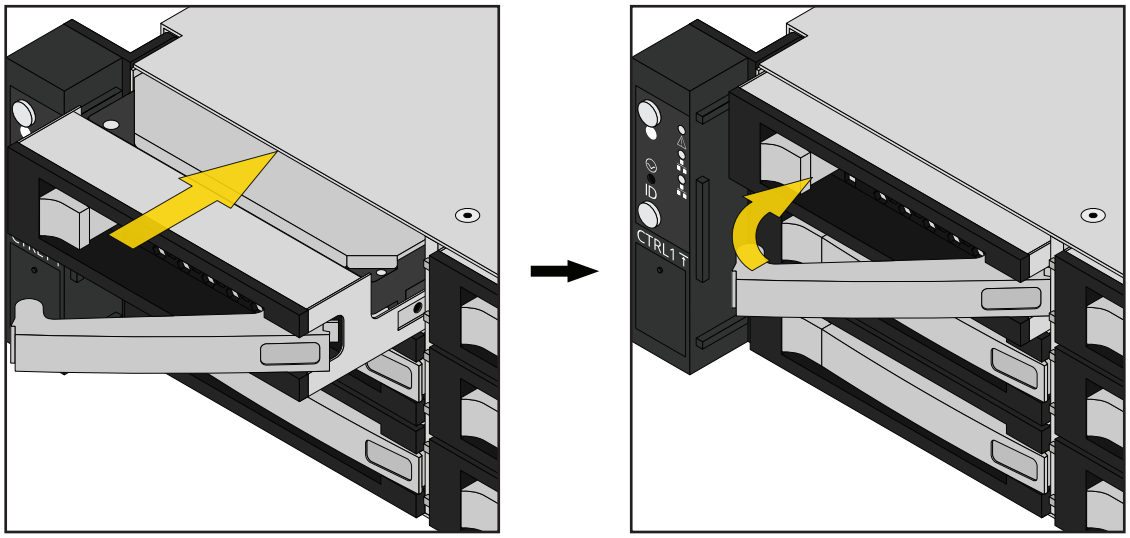
Align the drive assembly with an empty slot on the system and push it in until the locking arm begins to swing closed. Gently close the arm to fully seat the drive tray and lock it into the system.

Drive Assembly with SSD



Drive Assembly with HDD

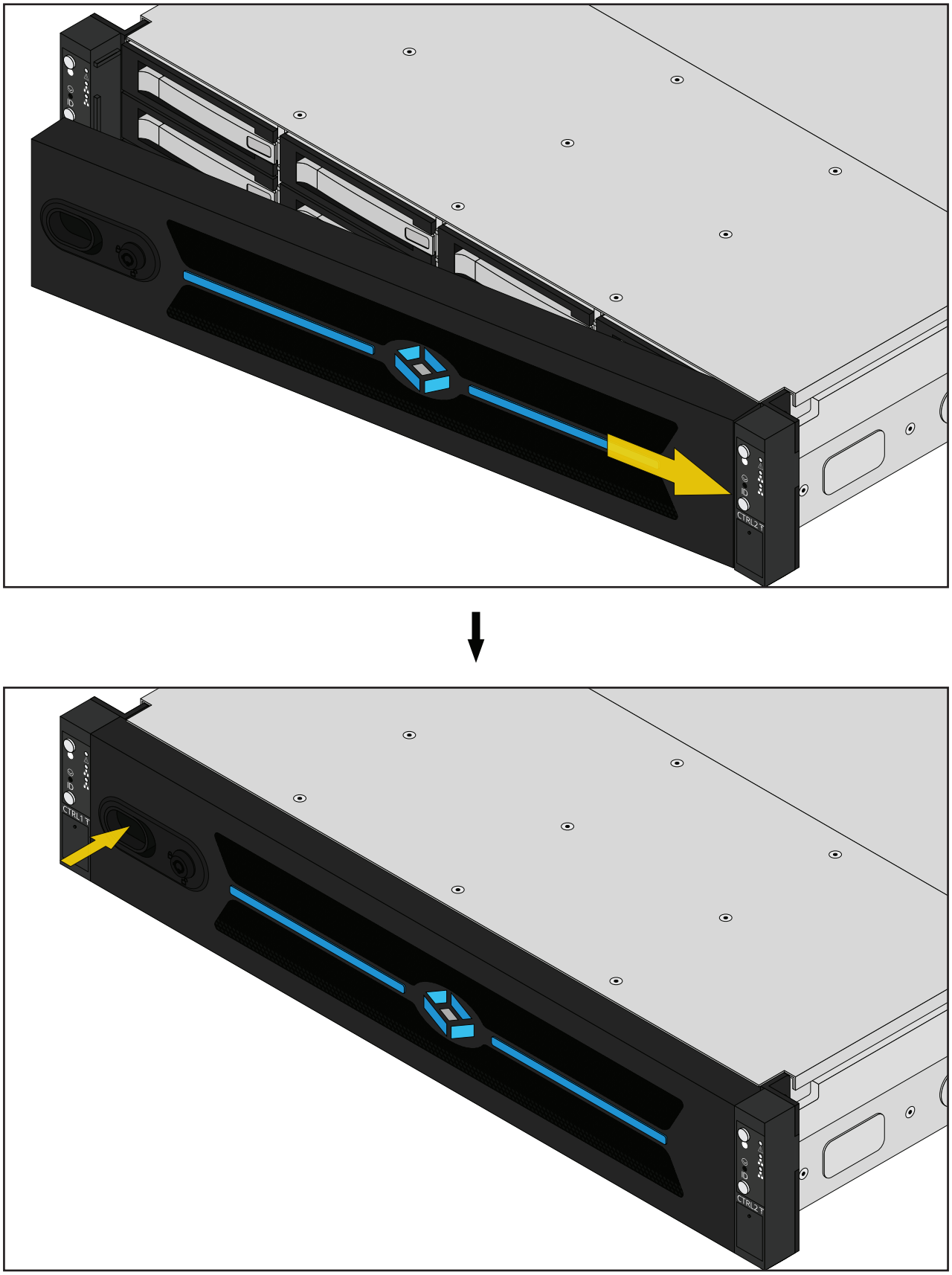




7.7 Install Bezel

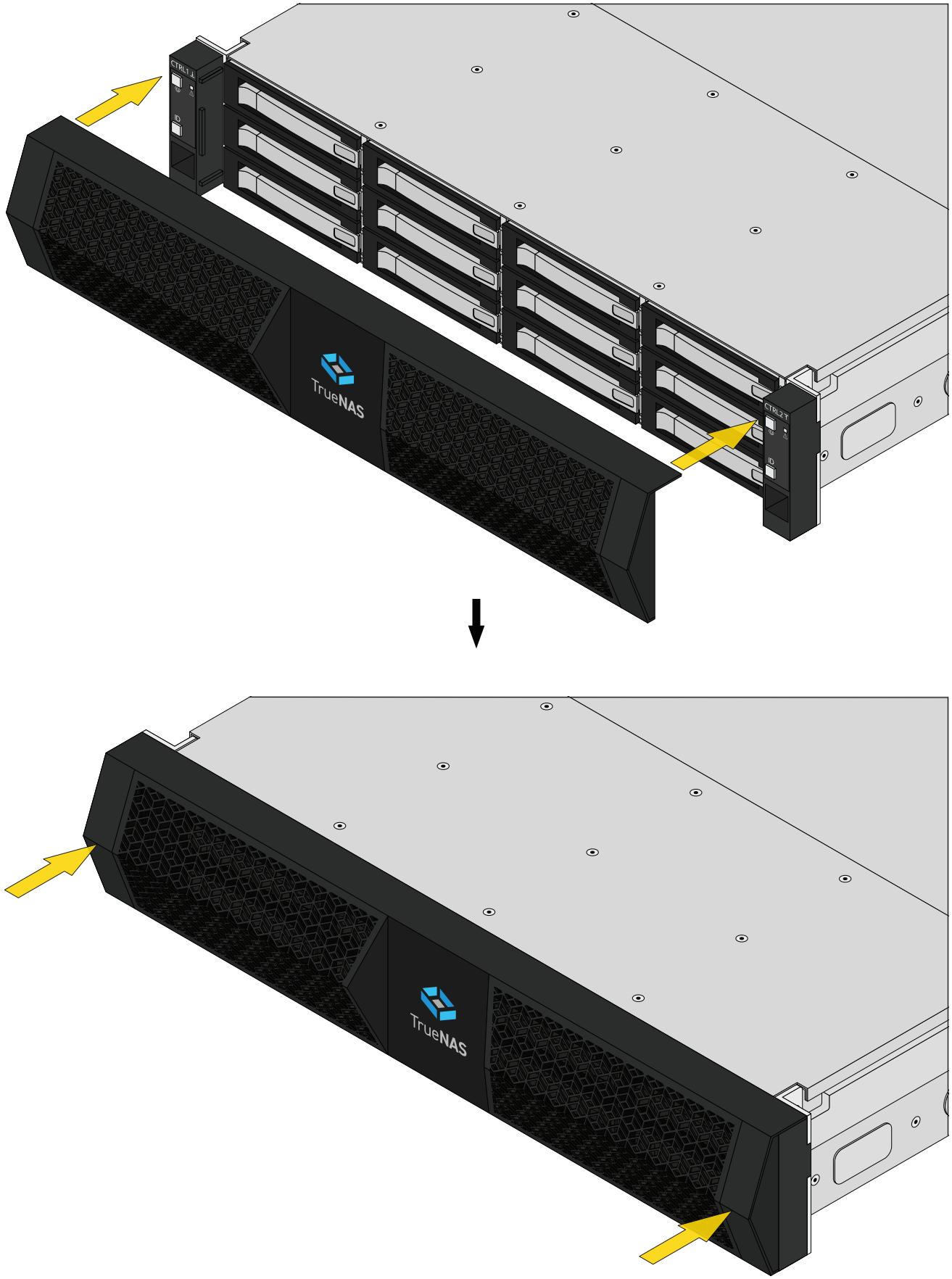
Align the right side of the bezel with the attach points on the right ear, then push the left side of the bezel into the attach points on the left ear until it clicks and locks into place.

7.7.1 Install H10 or H20 Bezel



7.7.2 Install H30 Bezel

Align the bezel with the front of the H30 and fit it over the chassis ears. The bezel attaches to the H30 magnetically.



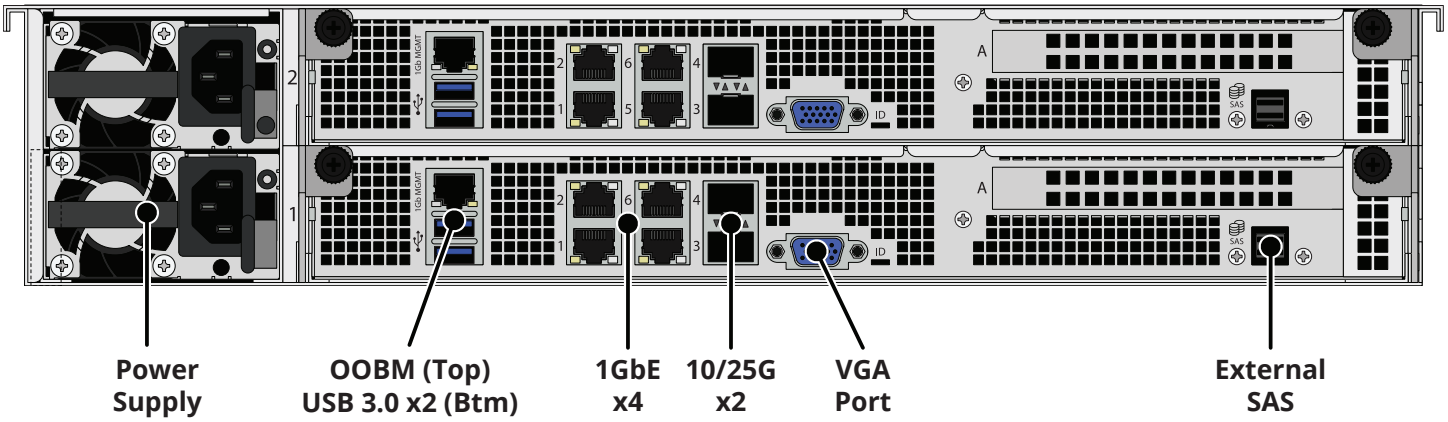
7.8 Install Cables

Connect one ethernet network cable from your local switch or management network to the Out-of-Band Management (OOBM) port, and another one to the first 1GbE ports (port 1) **on both controllers**.

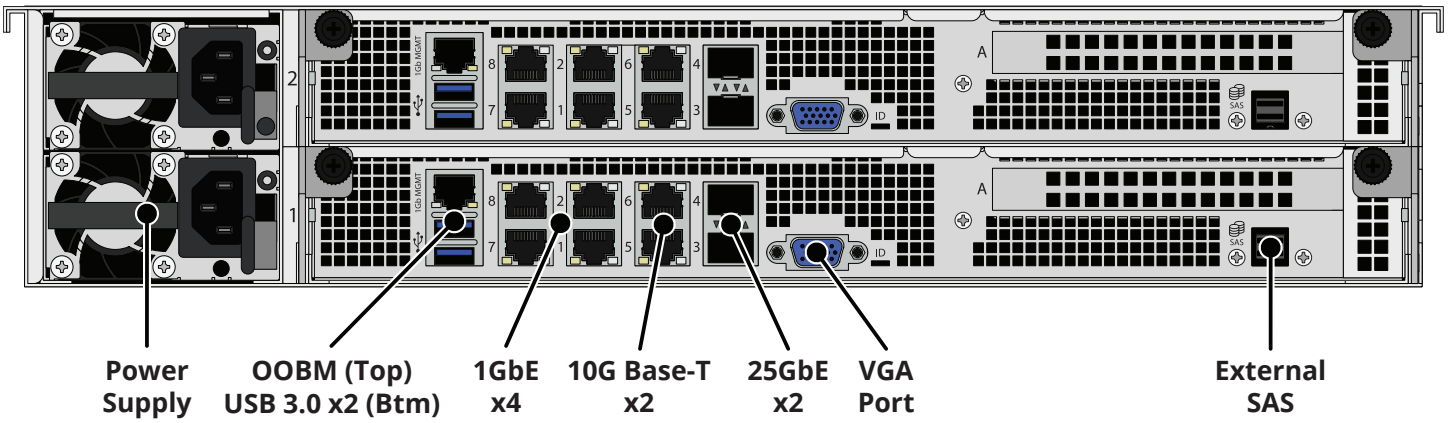
Next, connect a monitor and keyboard to the VGA and USB ports on the same controller.

Finally, connect the power cables **to both power supplies**, then plug them into a power distribution unit.

H10 and H20



H30



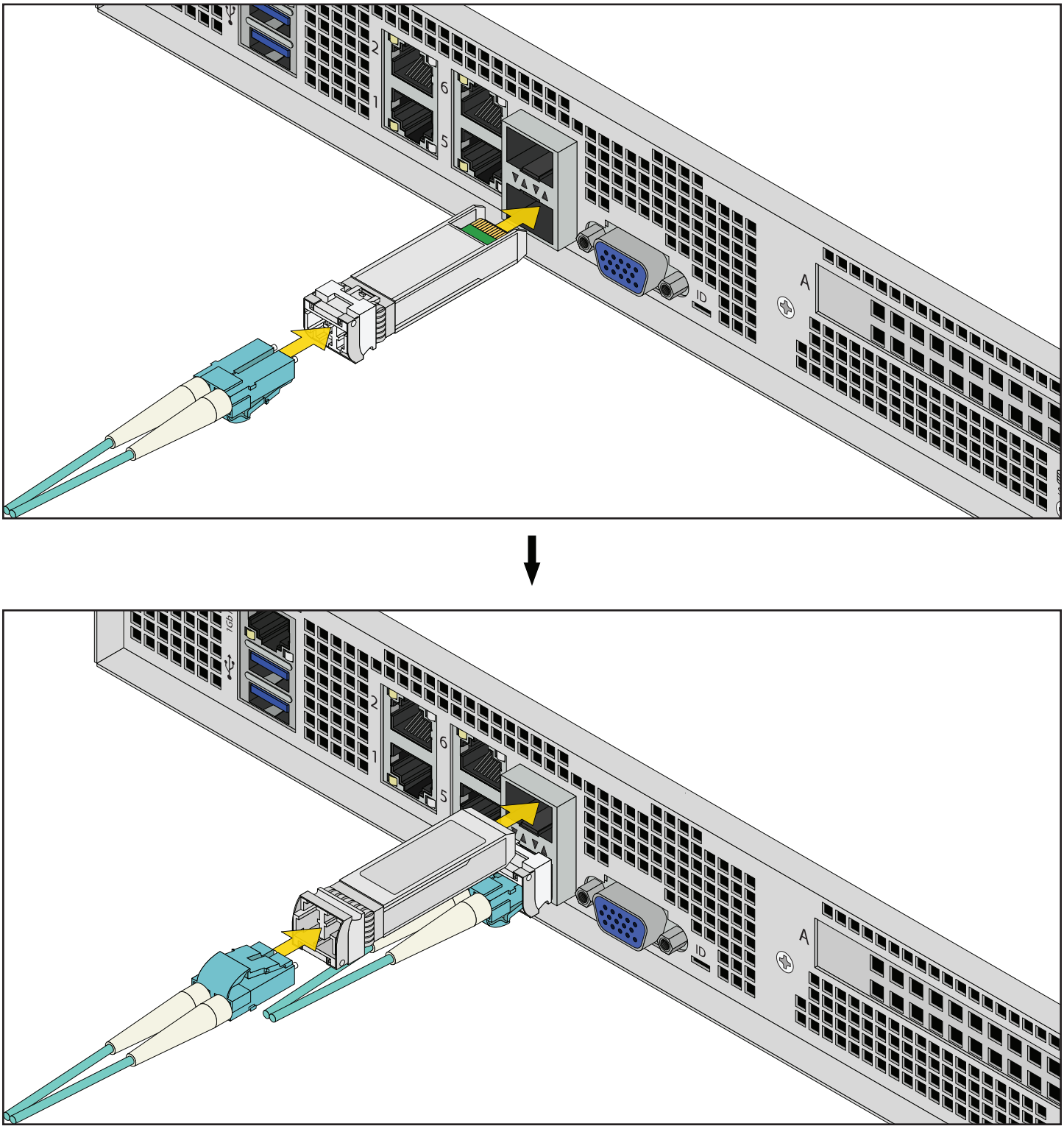
7.8.1 10/25G Cabling

If you wish to use the 10/25G networking ports, you can set them up now. Insert SR optics into the bottom port with the gold connectors facing up, then plug the SR cable into the back of the optics.

Insert the other optics in the top port with the gold connectors facing down, then plug the cable into the optics.

Note - 10GBase-T Transceivers

10GBase-T optics (transceivers) in the H-Series SFP+ ports can not operate at 1G. They can only operate using 10G connections to other 10G devices.

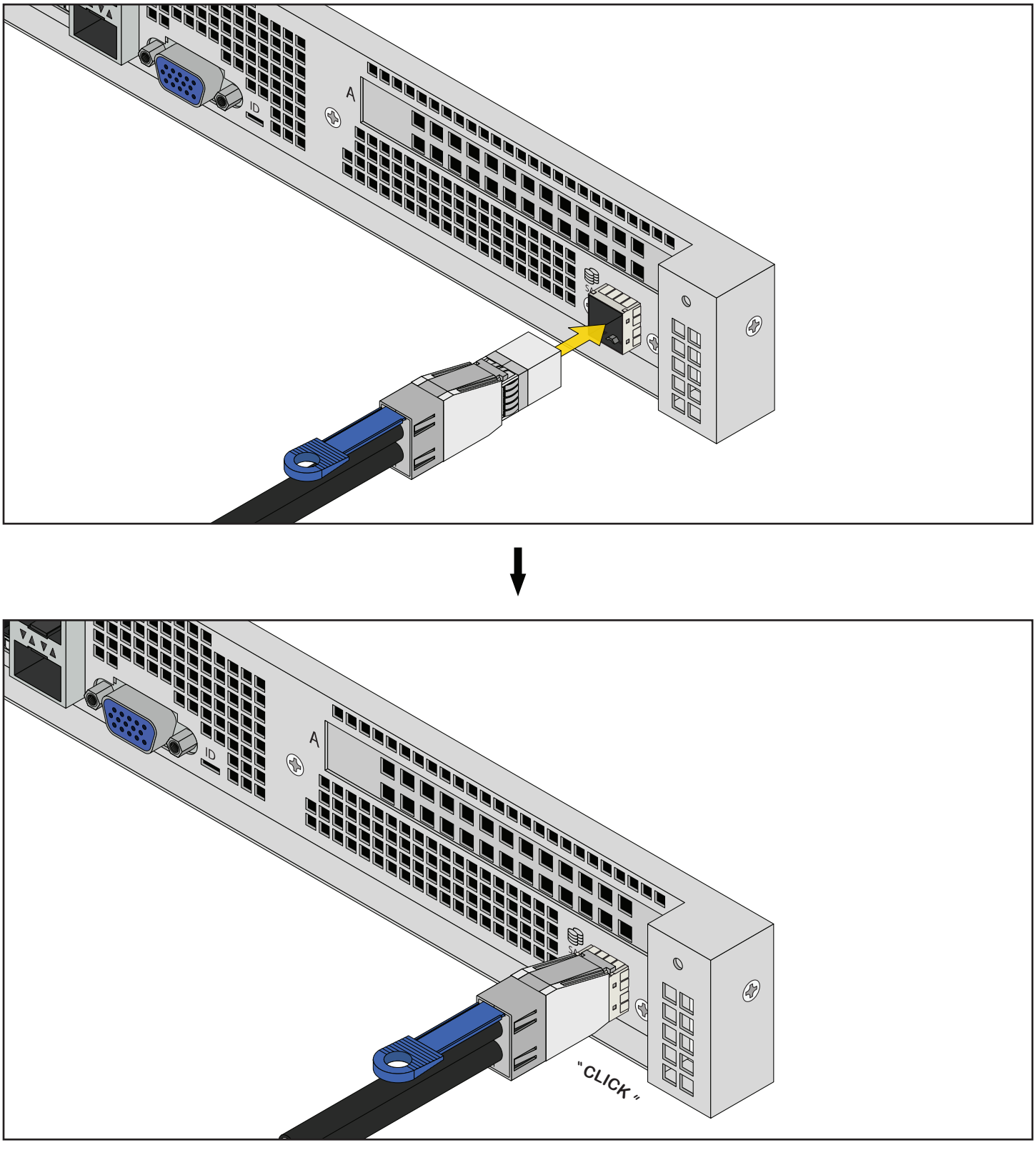


7.8.2 SAS Cabling

If you ordered your system with an expansion shelf, you can set up the SAS3 cable now. Line the SAS3 cable connector up with the SAS port on the back of the system.

Ensure the blue tab on the SAS cable is facing up. Gently push the connector into the port until it clicks.

See “8 SAS Connections” on page 21 or your expansion shelf documentation for SAS connection diagrams before booting the H-Series.



7.9 Boot the System

After plugging the power cables into outlets, the system powers on and boots into TrueNAS.

When booted, the system console displays the TrueNAS web UI IP address, which is either preconfigured according to customer guidelines or automatically generated with DHCP.

Enter the IP address into a browser on a computer on the same network to access the web user interface.

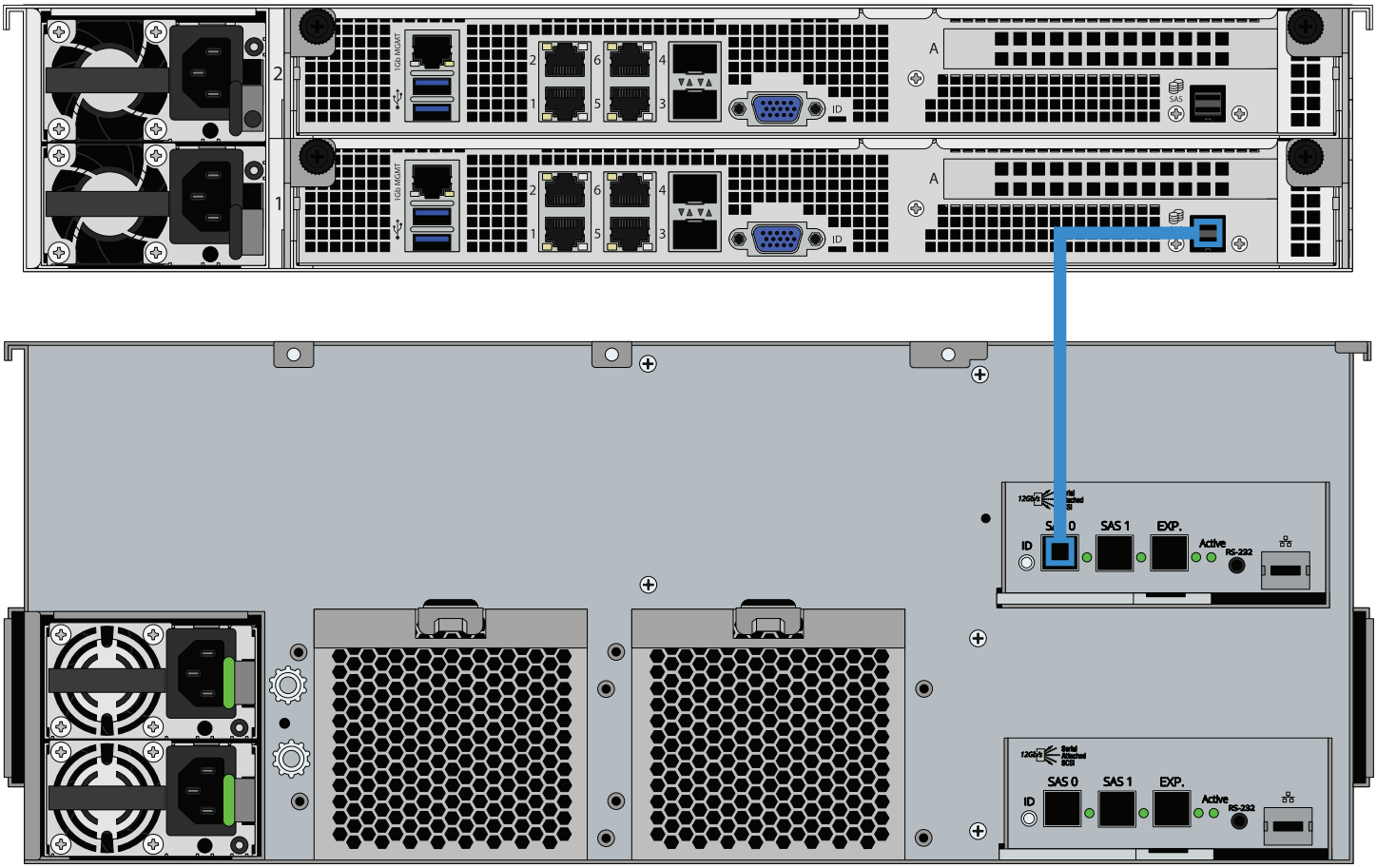
See your welcome email or the password stickers on each controller at the rear of the unit for login credentials.

8 SAS Connections

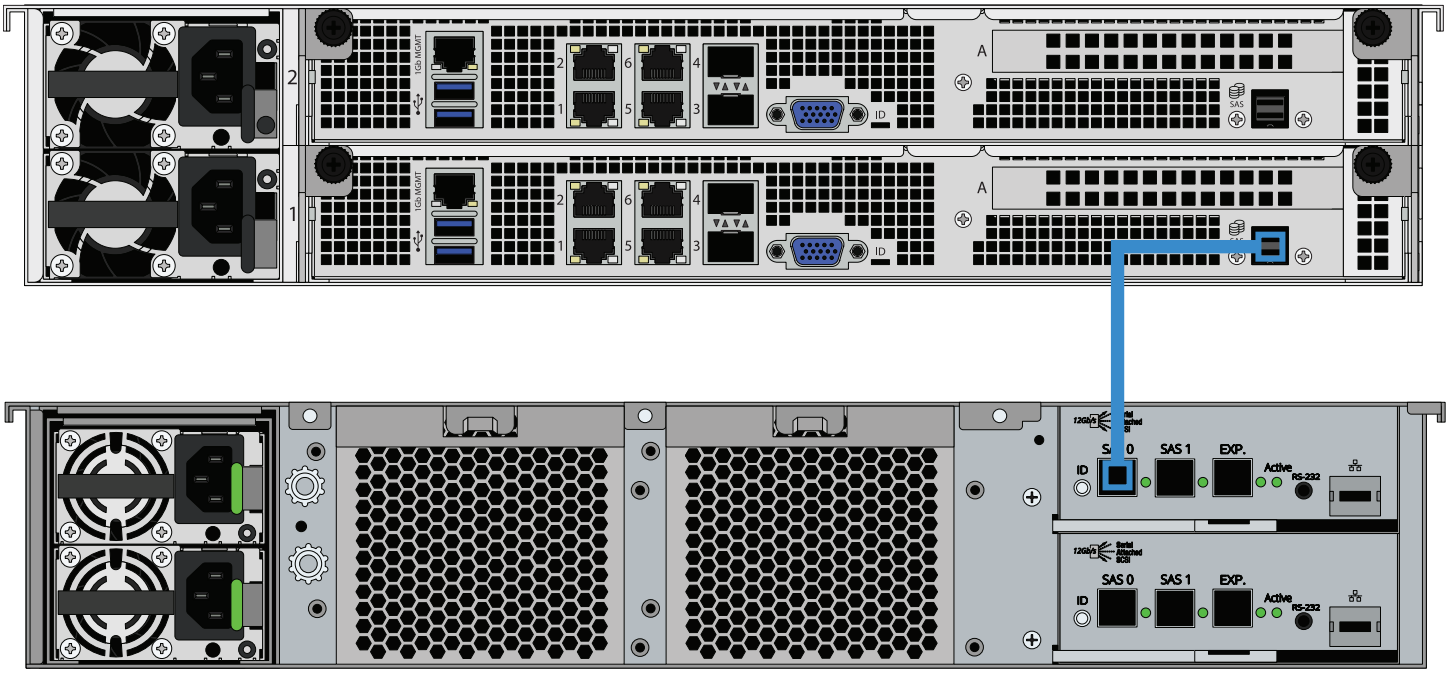
Important - SAS Configuration

When setting up SAS connections, please adhere to the wiring example below. Connecting Expansion Shelves incorrectly causes errors. Never cable a single controller to different IOMs/expanders on the same shelf.

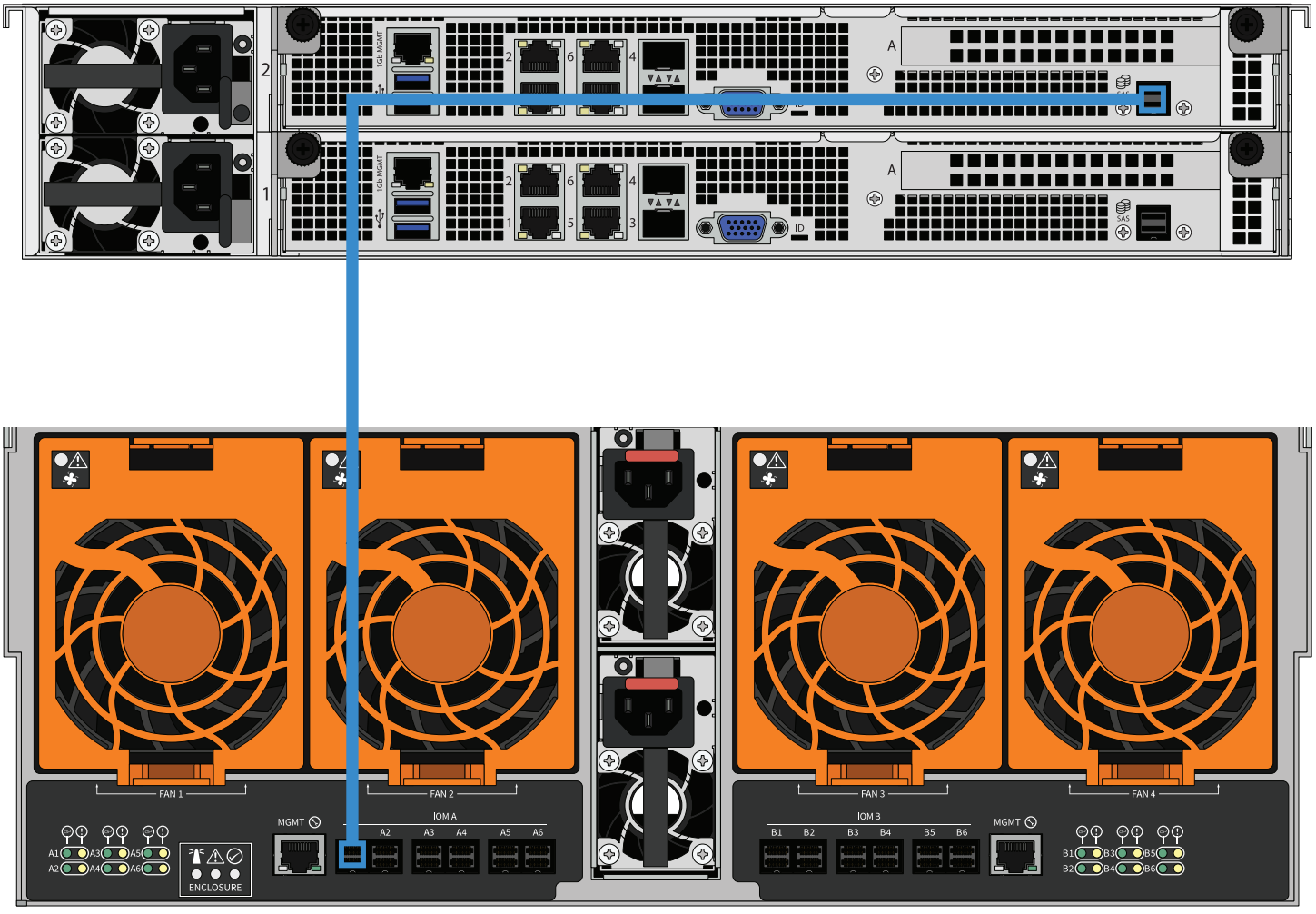
8.1 ES24



8.2 ES24F



8.3 ES60



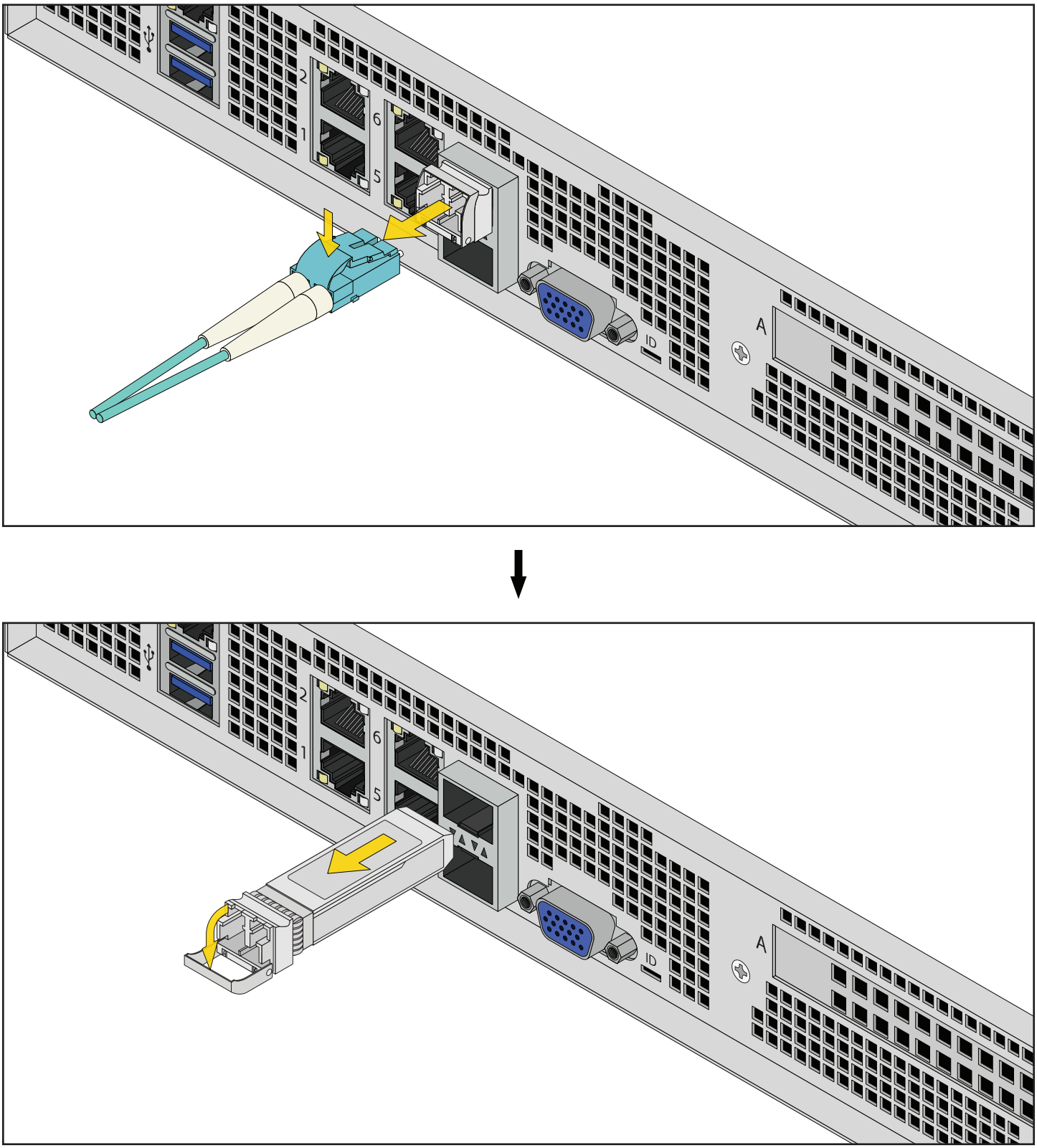
9 Unracking Procedure

9.1 Uninstall Cables

Disconnect both power cables from the PSUs, then disconnect all USB and networking cables.

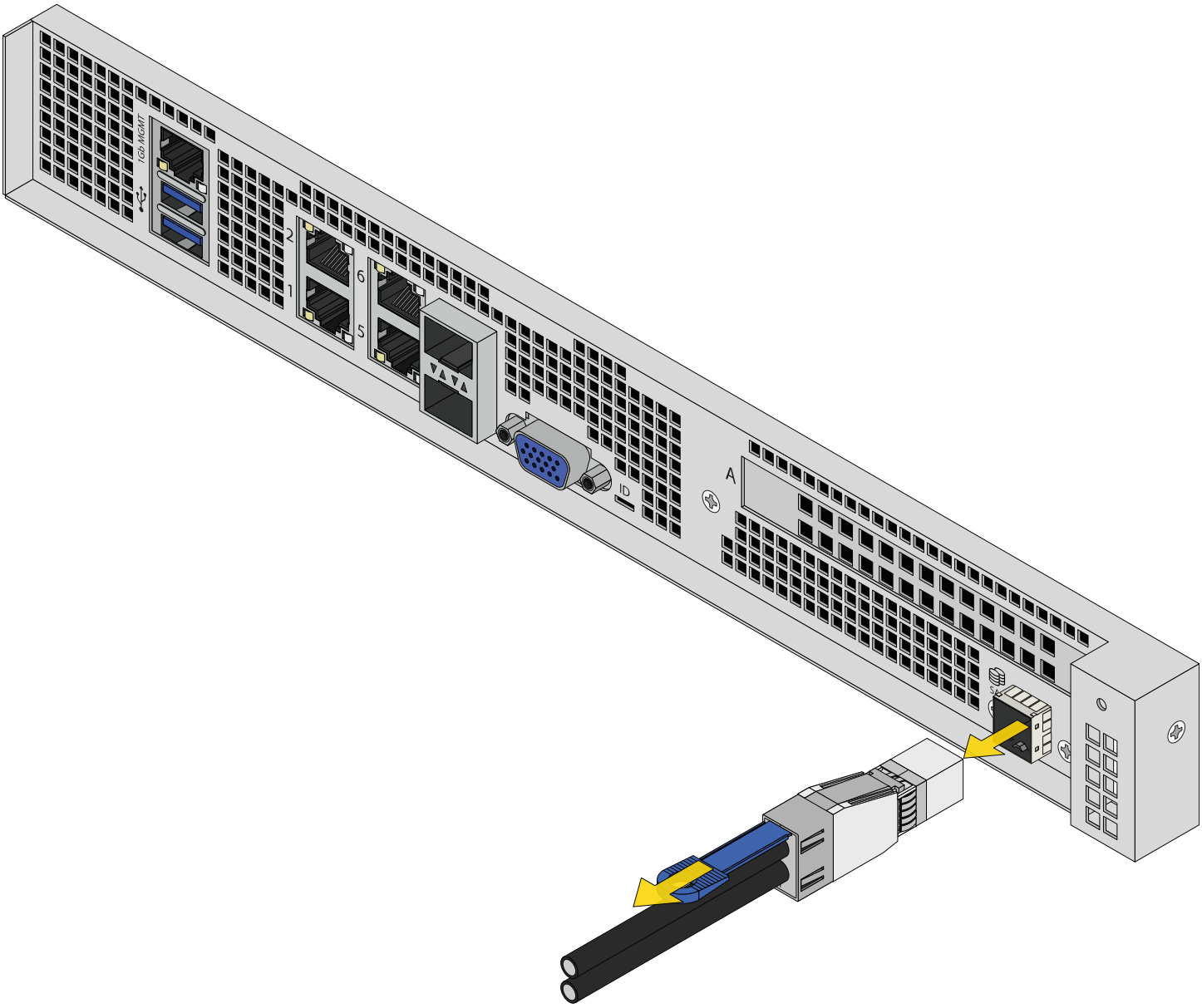
9.1.1 Disconnect 10/25G SR Cabling

Push the blue tab down on the connector to remove it from the optics. Pull the release on the optics to release them from the network port.



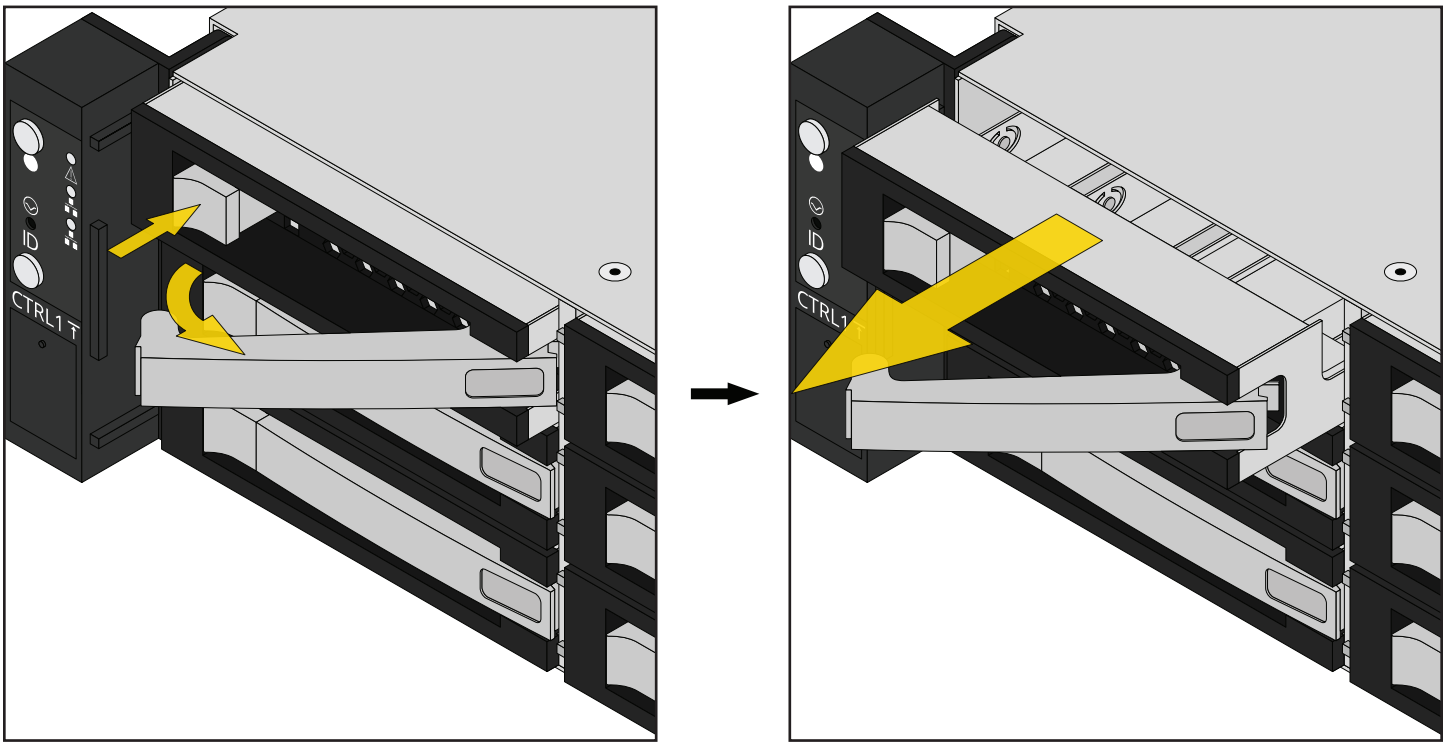
9.1.2 Disconnect SAS Cables

Pull the blue tab on top of the SAS cable to release it from the SAS port.



9.2 Remove Drives

Press the locking arm release on the left side of a tray. Swing the locking arm out until it stops, then pull the tray out of the system.

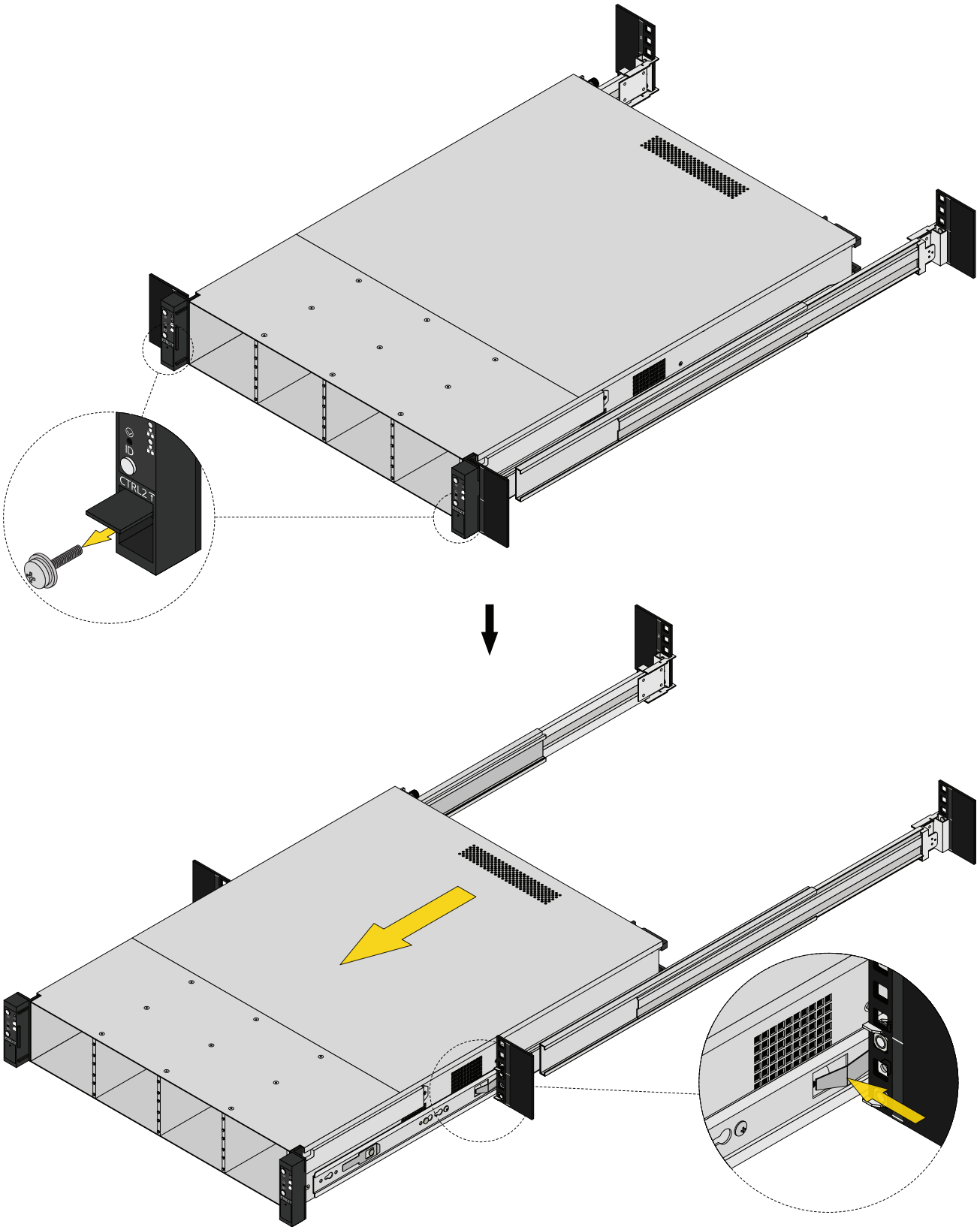


9.3 Remove the System From the Rack

9.3.1 Remove the H10 or H20 From the Rack

Push in the hinged doors on each ear and remove the rack screws.

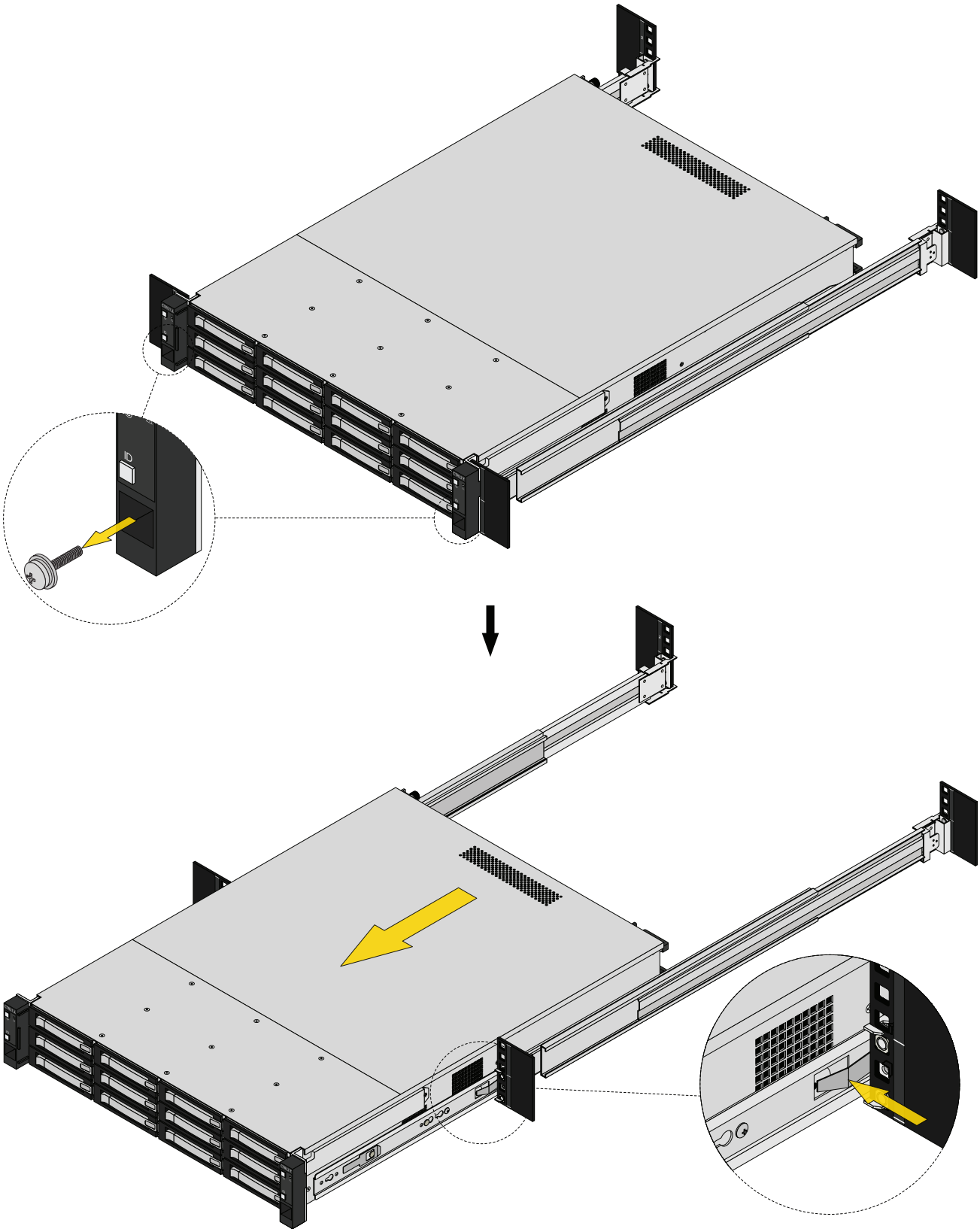
Pull the system out of the rack until the metal safeties click and lock. Squeeze the safety catches against the sides of the system and team-lift it out of the rack.



9.3.1 Remove the H30 From the Rack

Remove the rack screws from each ear.

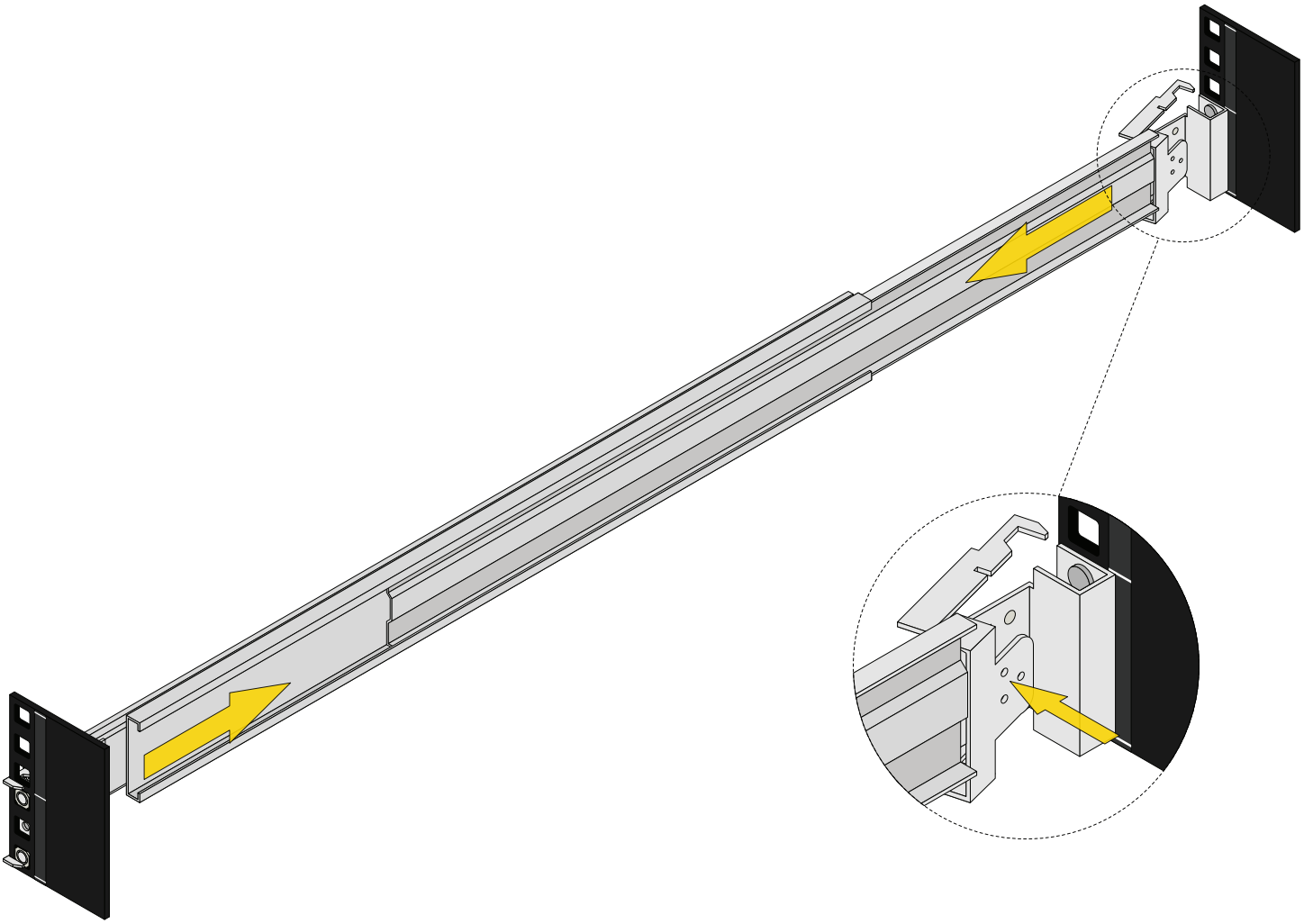
Pull the system out of the rack until the metal safeties click and lock. Squeeze the safety catches against the sides of the system and team-lift it out of the rack.



9.4 Remove the Rack Rail From the Rack

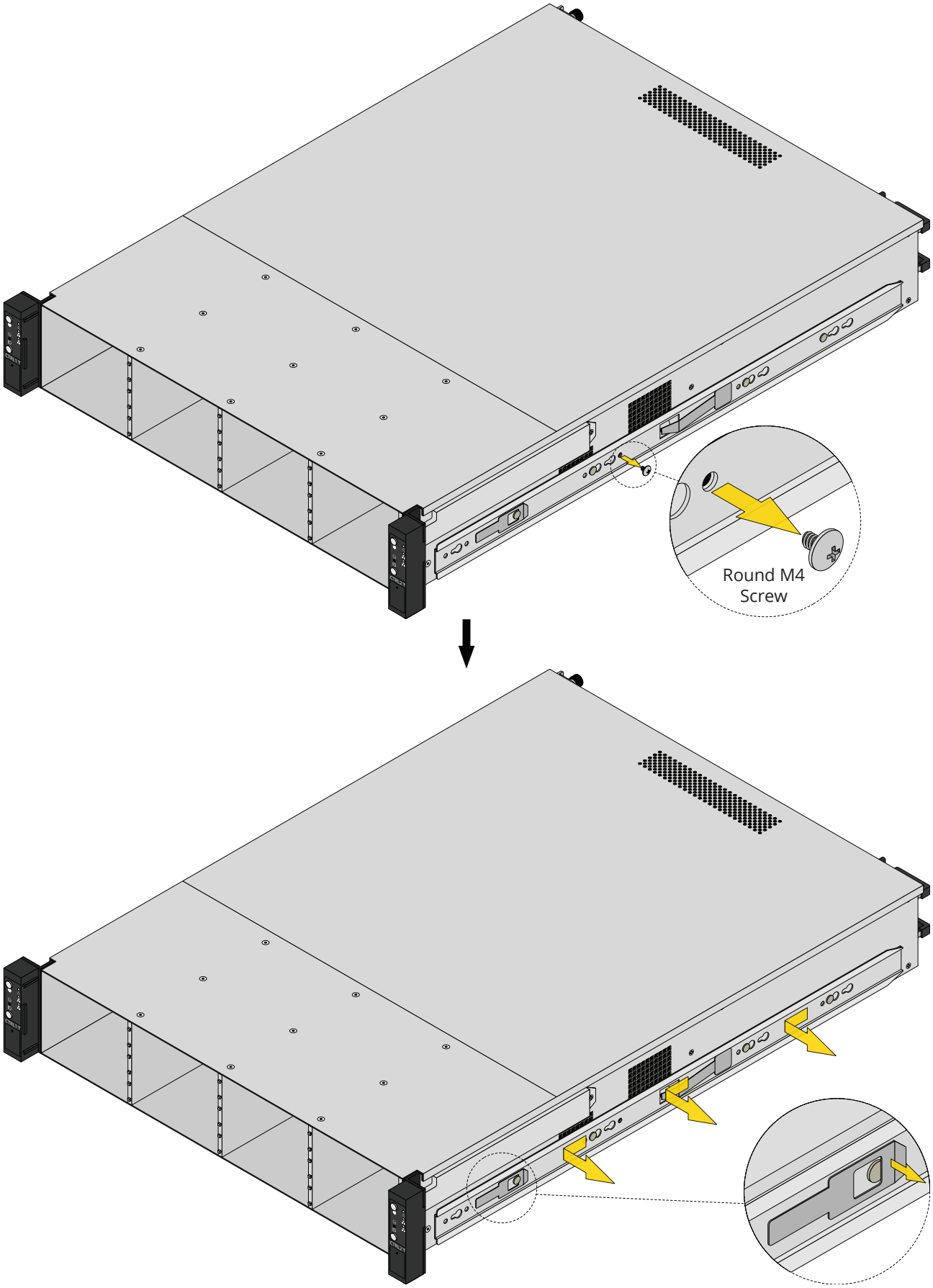
Press the spring latch plate on each side of the rail to release it from the rack, the remove the rail from the rack.

Repeat for the other rack rail.



9.5 Remove the Chassis Rail From the System

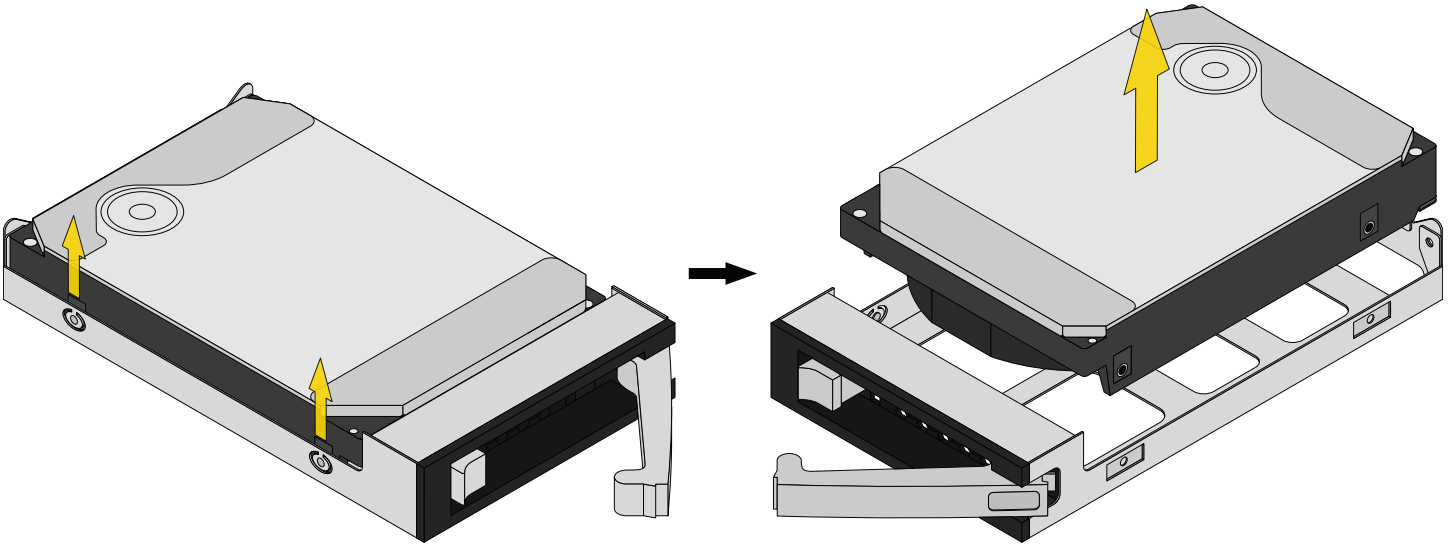
Remove the round M4 screws from the chassis rails, then pull the retention latches away from the chassis rails and slide them toward the front of the system. Pull the chassis rails over the mounting pegs and away from the system.



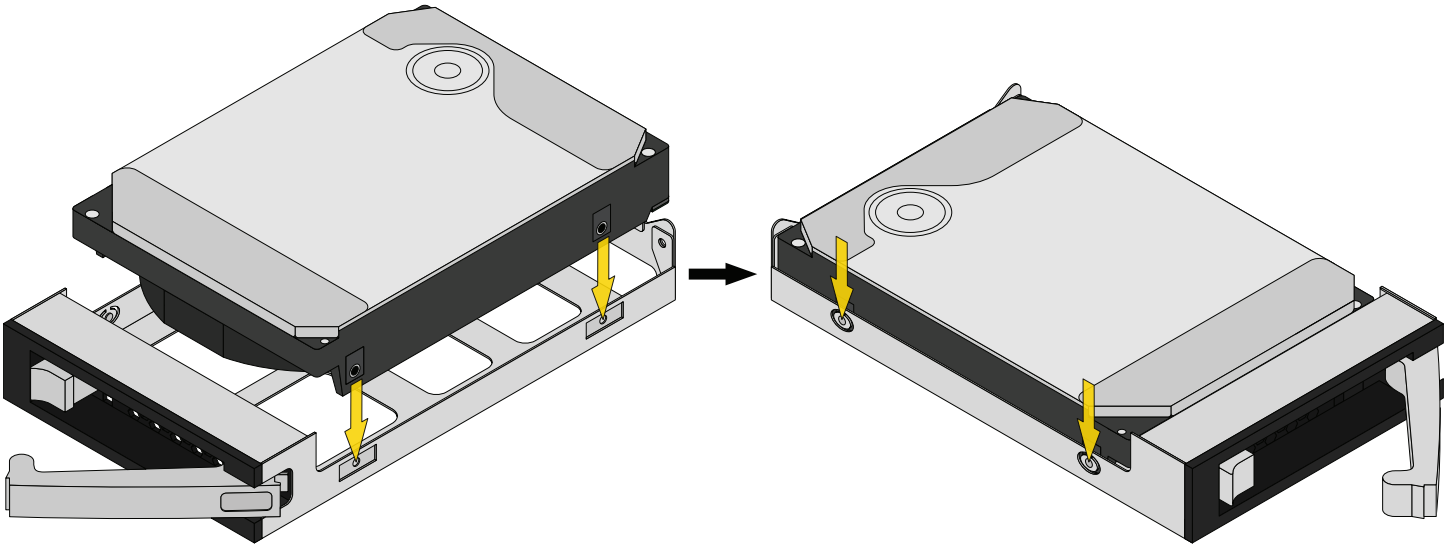
10 Drive Replacement

10.1 HDDs

To remove an HDD from a tray, push the side attached to the flexible pegs from underneath the tray, then lift the drive out.

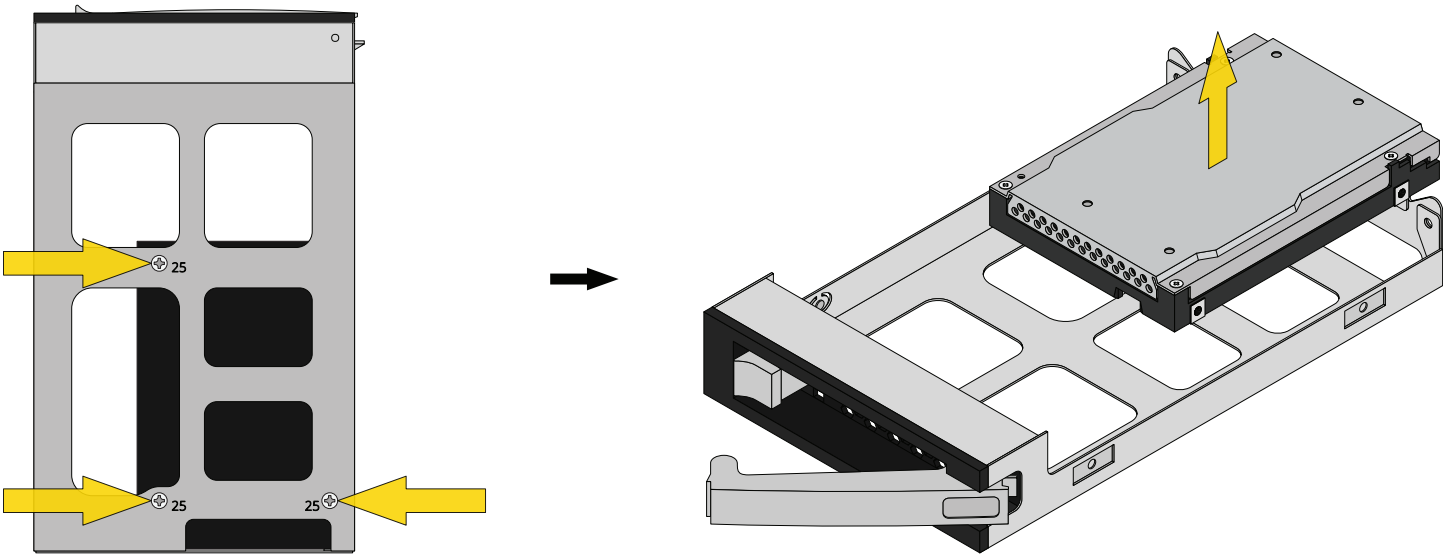


To install a drive in a tray, ensure the drive connectors point out the back of the tray and push the drive side screw holes into the fixed retention pegs on one side of the tray. Push the other side of the drive down into the flexible retention pegs to secure the drive.

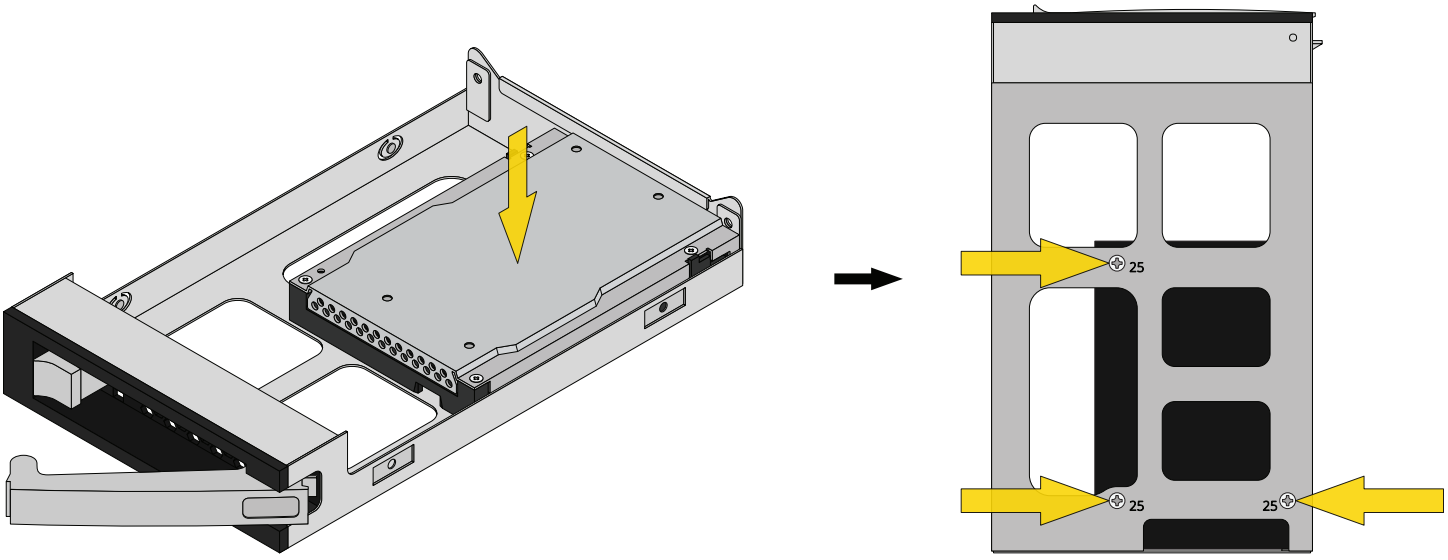


10.2 SSDs

To remove an SSD from a tray, remove the three 2.5” SSD screws from the bottom of the tray, then remove the drive from the tray.



To install an SSD in a tray, ensure the drive connectors point out the back of the tray, then lower the drive into the tray. Install three 2.5” SSD screws to secure the drive to the tray.



11 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 Forums provide opportunities to interact with other TrueNAS users and discuss their configurations:

https://forums.truenas.com/

12 Contacting Us

Having issues? Please contact TrueNAS Enterprise Support to ensure a smooth resolution.

Contact Method	Contact Options
Web	https://www.truenas.com/support
Email	support@truenas.com
Telephone	Monday-Friday, 6:00AM to 6:00PM Pacific Standard Time: • 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): • US-only toll-free: **1-855-499-5131** • International: **1-408-878-3140** (International calling rates will apply)