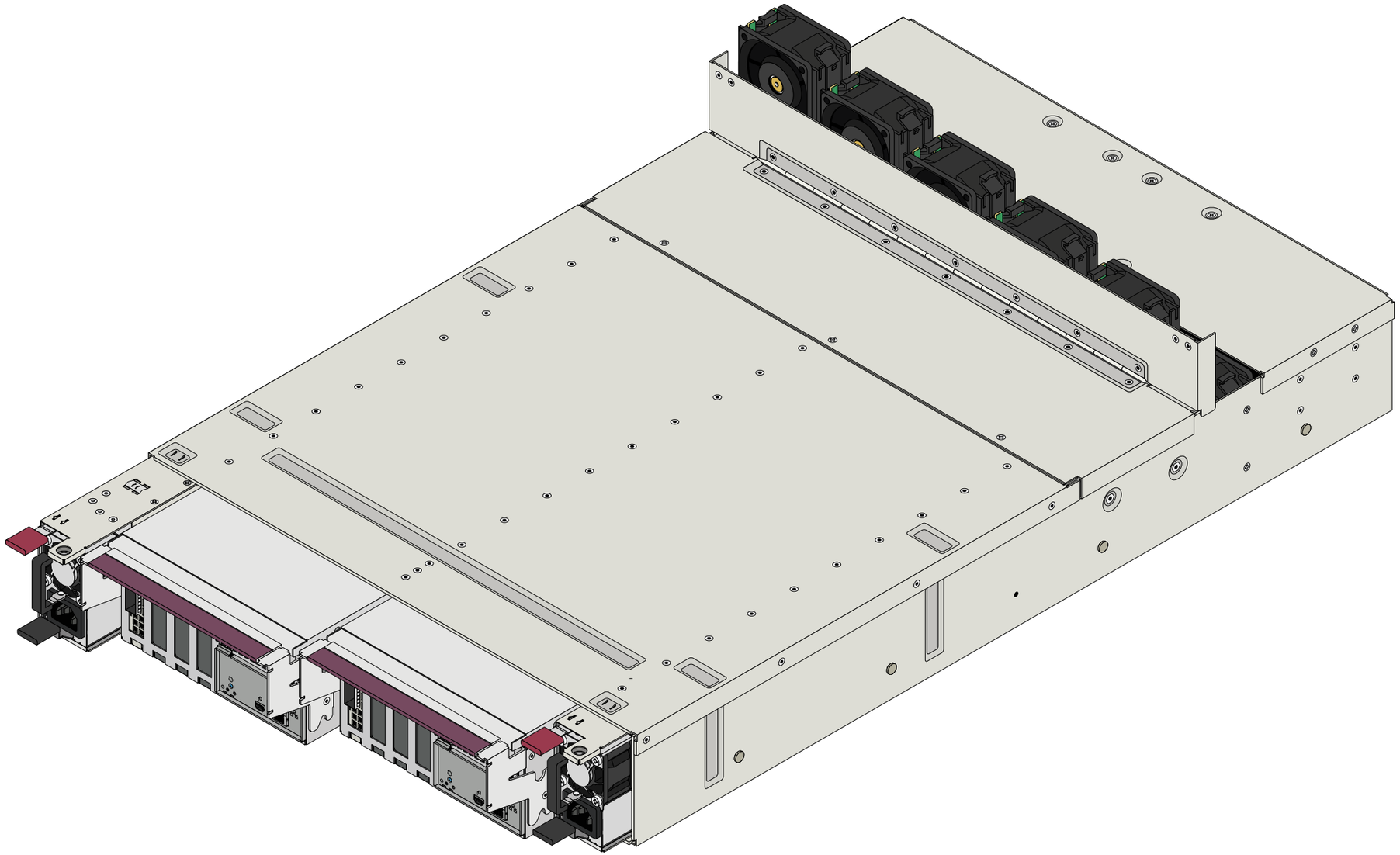


ES24N Service Guide Revision History

Revision	Change / Update	Date	Change Order	Prepared / Revised	Approver
25051	Initial Creation	05/22/24	--	Tony Rivera	--
24081	https://ixsystems.atlassian.net/browse/PD-1321 • service matrix integration	08/01/24	--	Tony Rivera	--
25021	https://ixsystems.atlassian.net/browse/PD-1739 and https://ixsystems.atlassian.net/browse/PD-1573 • Remove service matrix tables and replace with link • Added cabling, deployment, and troubleshooting instructions	02/24/25	--	Tony Rivera	--
26011	https://ixsystems.atlassian.net/browse/PD-2505 • Added firmware and upgrade instructions	01/07/26	CH018	Tony Rivera	Jeff Ervin
26031	https://ixsystems.atlassian.net/browse/PD-2573 • New firmware files and IOM firmware update process changes	03/13/26	--	Tony Rivera	Jeff Ervin

Table of Contents

1 General Care and Handling

1.1 Hot-Swapping

If a component is hot-swappable, you do not need to power down the TrueNAS system to replace it. Otherwise, power down the TrueNAS system and unplug the power cable. We recommend you note or take pictures of the wires connected to the back of the system if you have to disconnect them.

Important - Data Loss

Replacing the wrong component on a system can result in production or data loss. Disks, PSUs, fans, and controllers/IOMs are usually hot-swappable. Replaceable components have fault lights that indicate when they need attention or replacement. If you leave the system online while replacing components (“hot-swapping”), make sure they are faulted or offline.

1.2 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 components. We always recommend wearing an anti-static wristband and using a grounding cable.
- Store all system components in anti-static bags.

1.3 Personal Protective Equipment (PPE) and Handling

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.

Hold the system from the sides or bottom. Be mindful of loose cables or connectors, and avoid pinching or bumping them. This guide uses “left” and “right” based on your perspective when facing the system/component.

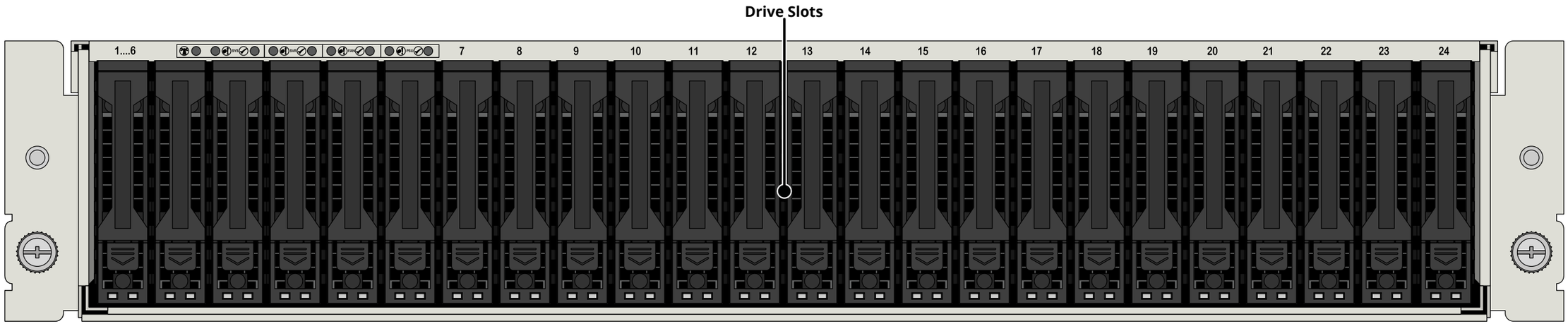
2 Service Matrix

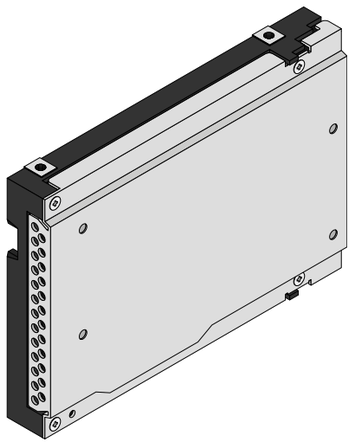
ES24N Service Matrix

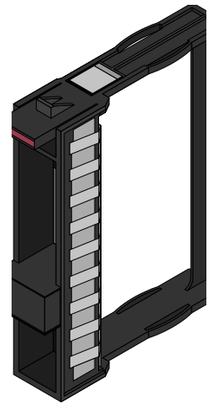
3 ES24N Part Locations

3.1 Front Components

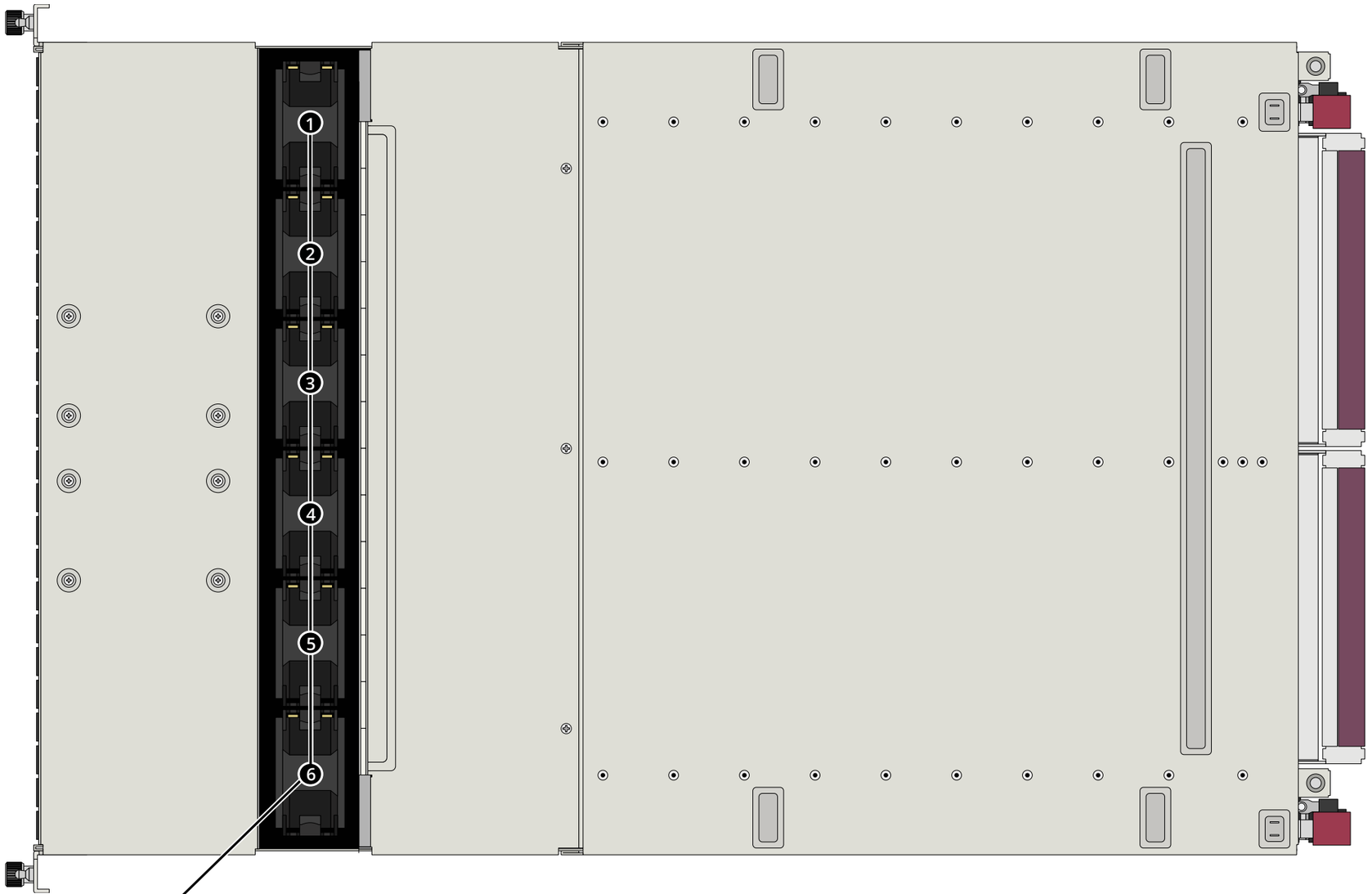
The ES24N chassis has 24 NVMe SSD slots, six internal cooling fans, two power supply units (PSU), and two storage expanders.



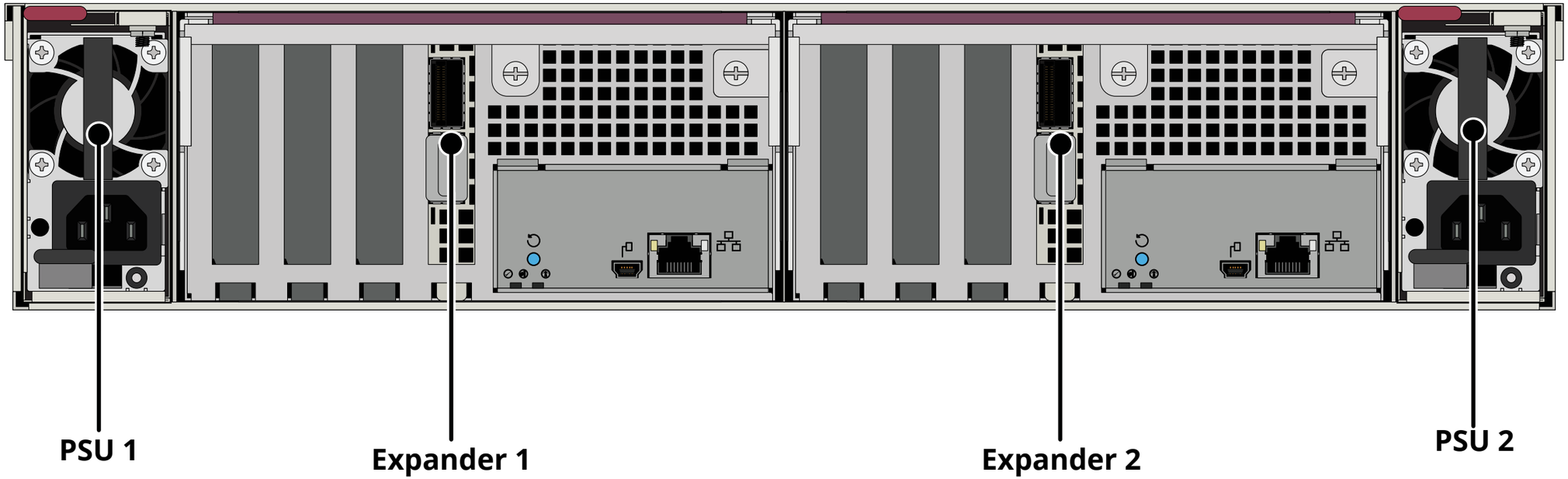




3.2 Top Components



3.3 Rear Components

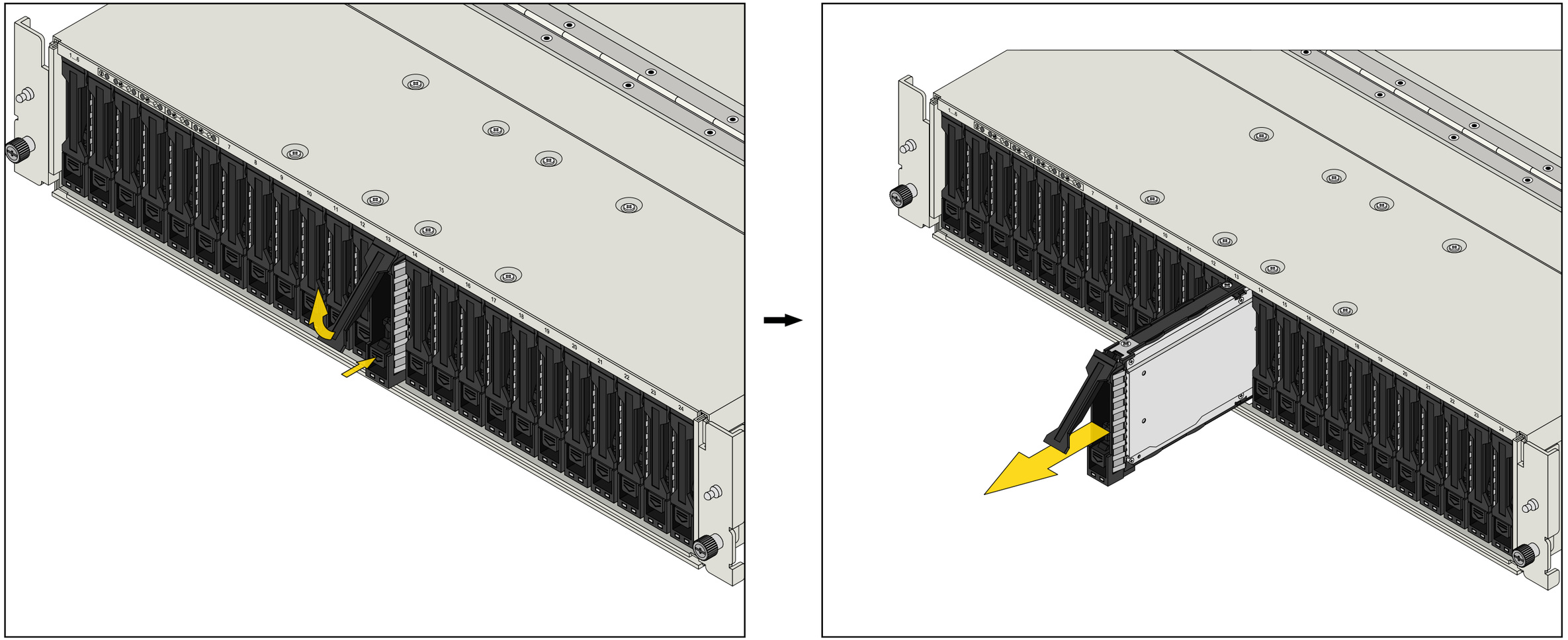


4 Drive Replacement

Personnel	Estimated Minutes	Required Tools	Hot-Swappable	Power-Down
1	10	Phillips Screwdriver	Yes	No

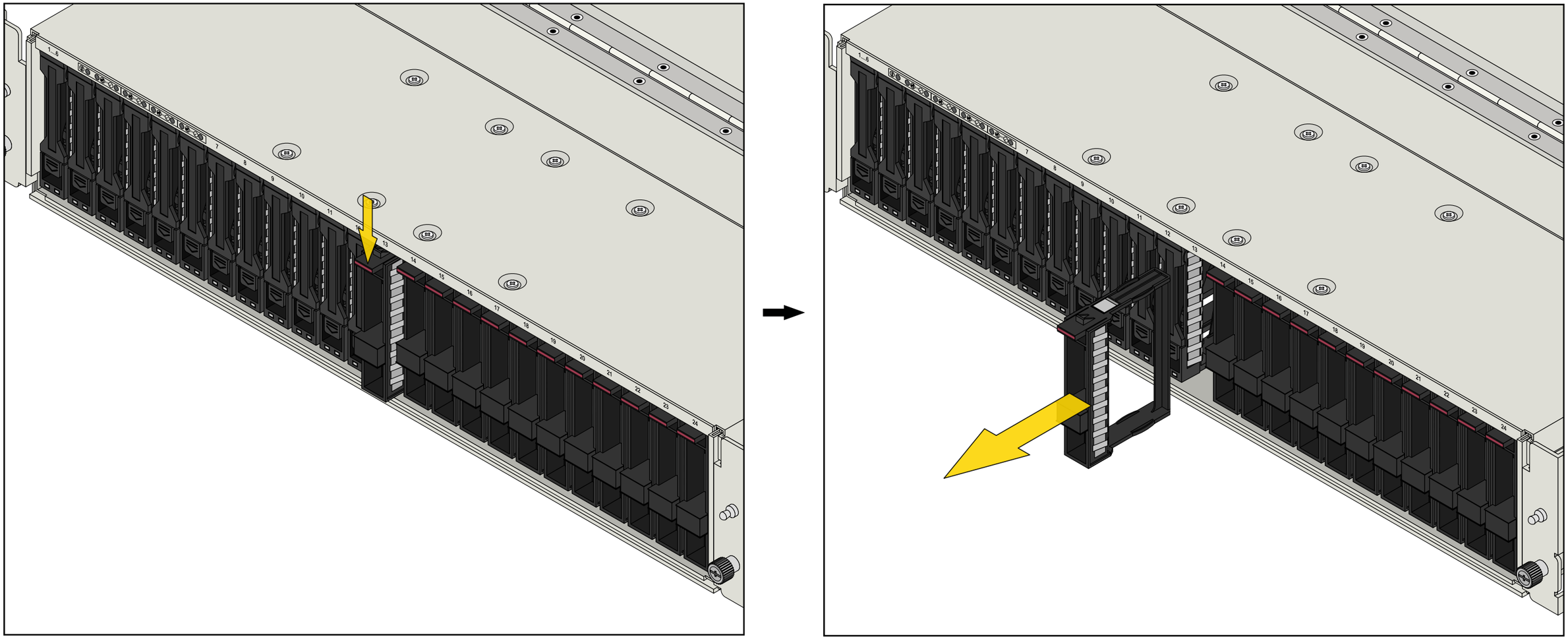
4.1 Remove Drive Tray

To remove a drive tray, push the button on the bottom end of the tray to release the locking arm. Gently open the arm until it stops, then pull the tray out from the system.



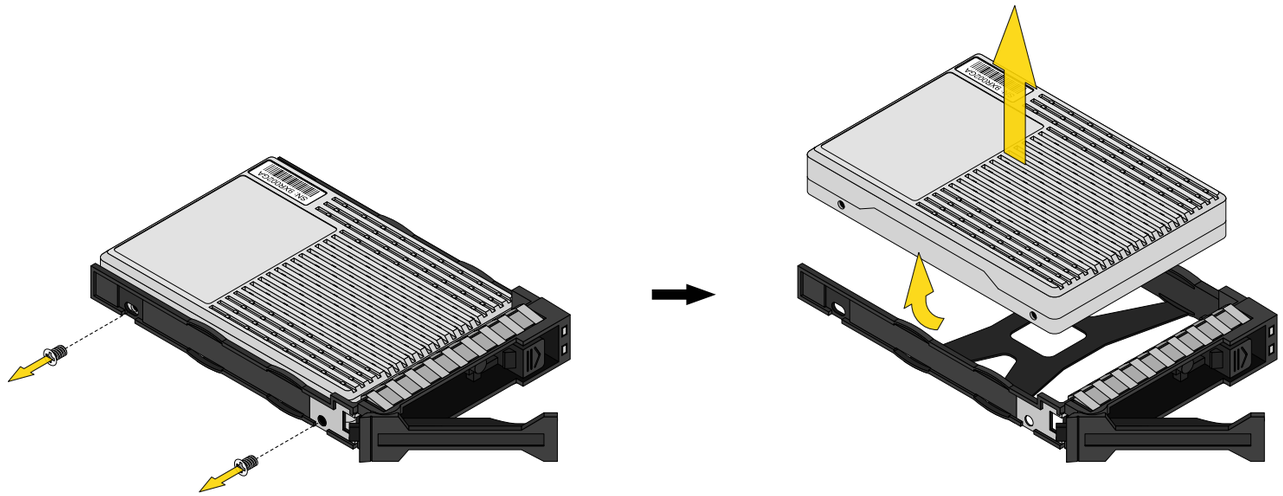
4.1.1 Remove Drive Blank

If you are replacing a drive blank with a drive assembly, remove the drive blank by pushing down on the drive blank locking tab and pulling it out of the system.



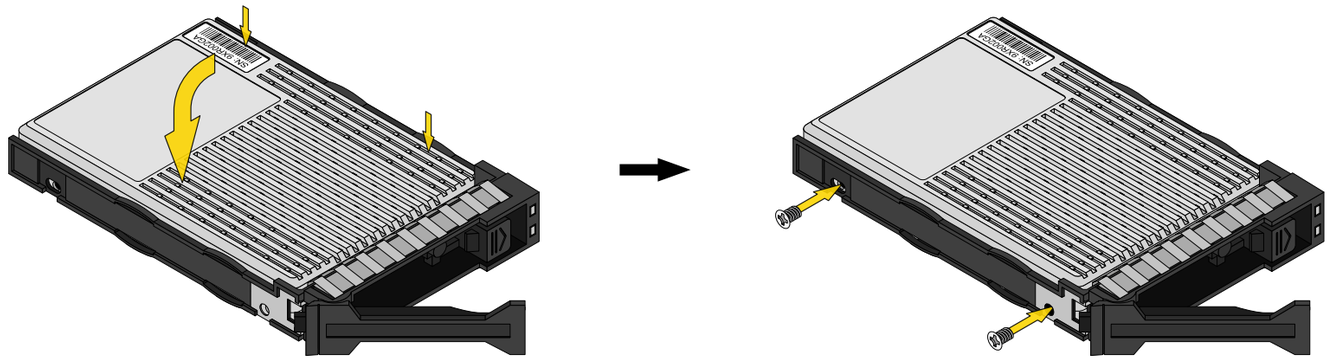
4.2 Remove a Drive From a Tray

Uninstall both SSD screws securing the drive to the tray, then gently lift the drive out of the tray.



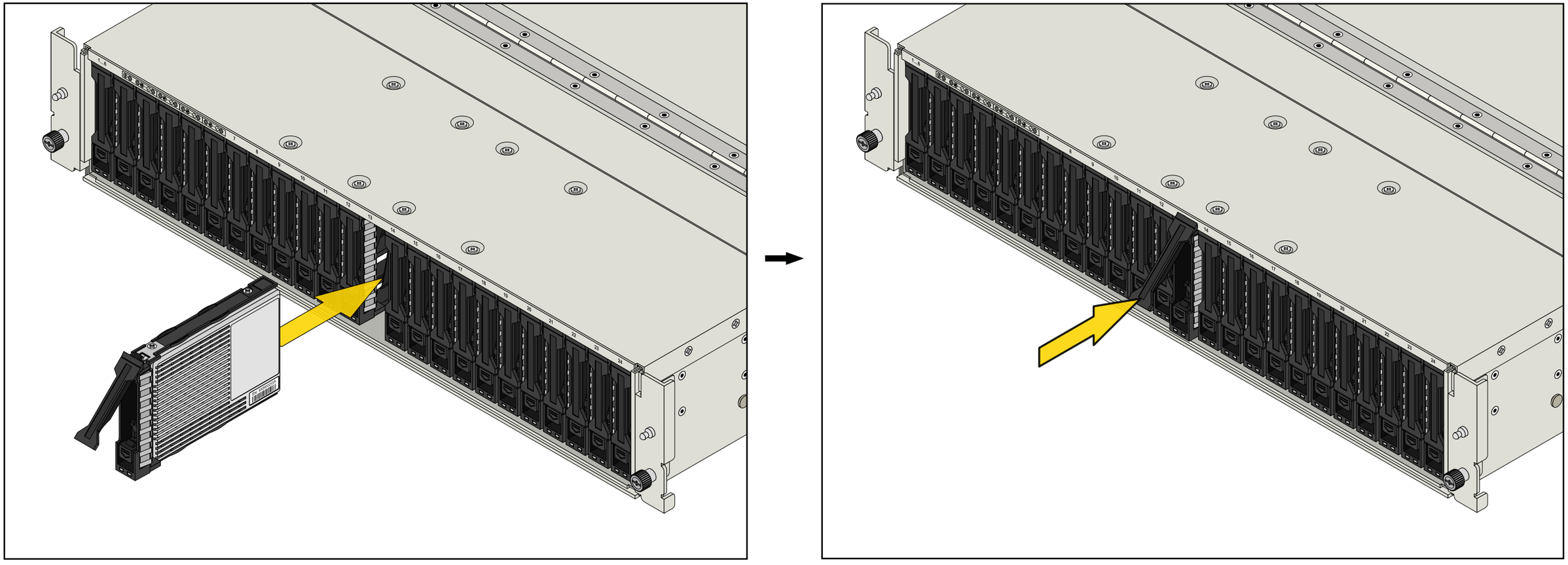
4.3 Install a Drive in a Tray

Ensure the drive connectors point out the back of the tray, then push the drive down into the tray. Secure the drive in the tray using two SSD screws.



4.4 Install a Drive Tray in the System

To remove a drive tray, push the button on the bottom end of the tray to release the locking arm. Gently open the arm until it stops, then pull the tray out from the system.



5 Fan Replacement

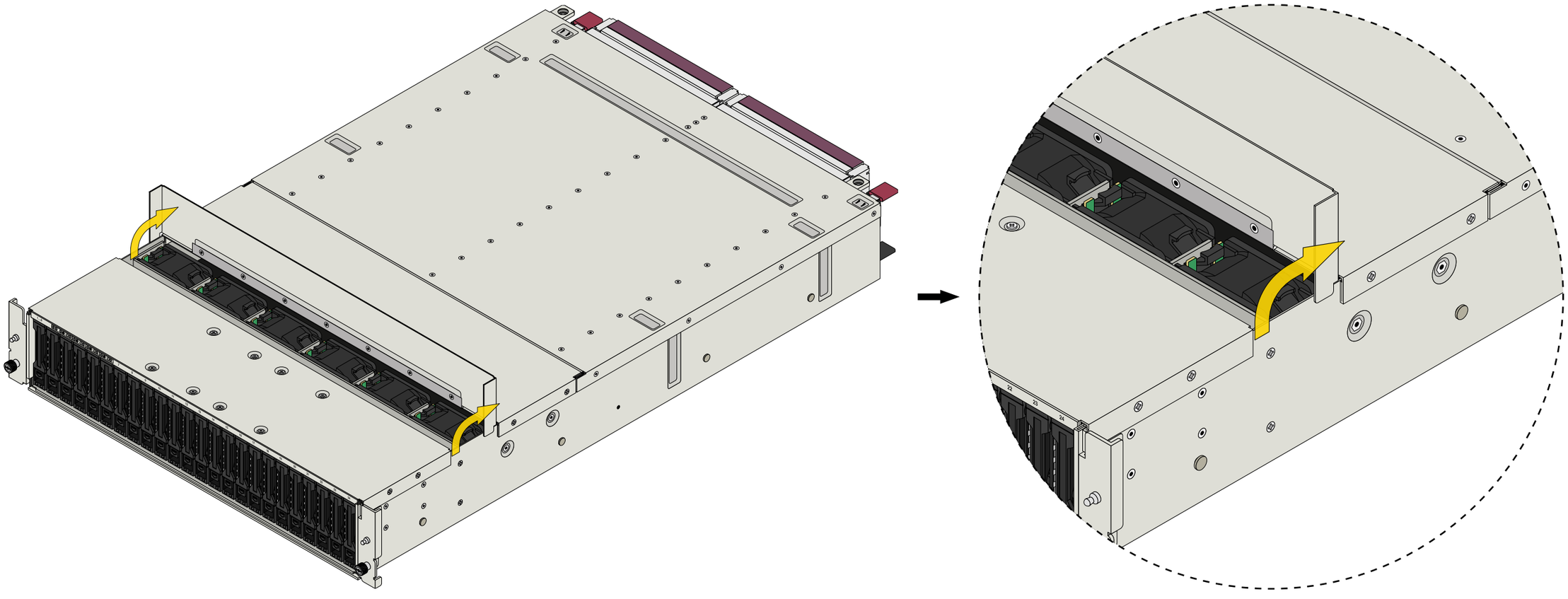
Personnel	Estimated Minutes	Required Tools	Hot-Swappable	Power-Down
1	5	None	Yes	No

ⓘ Note - Service Access

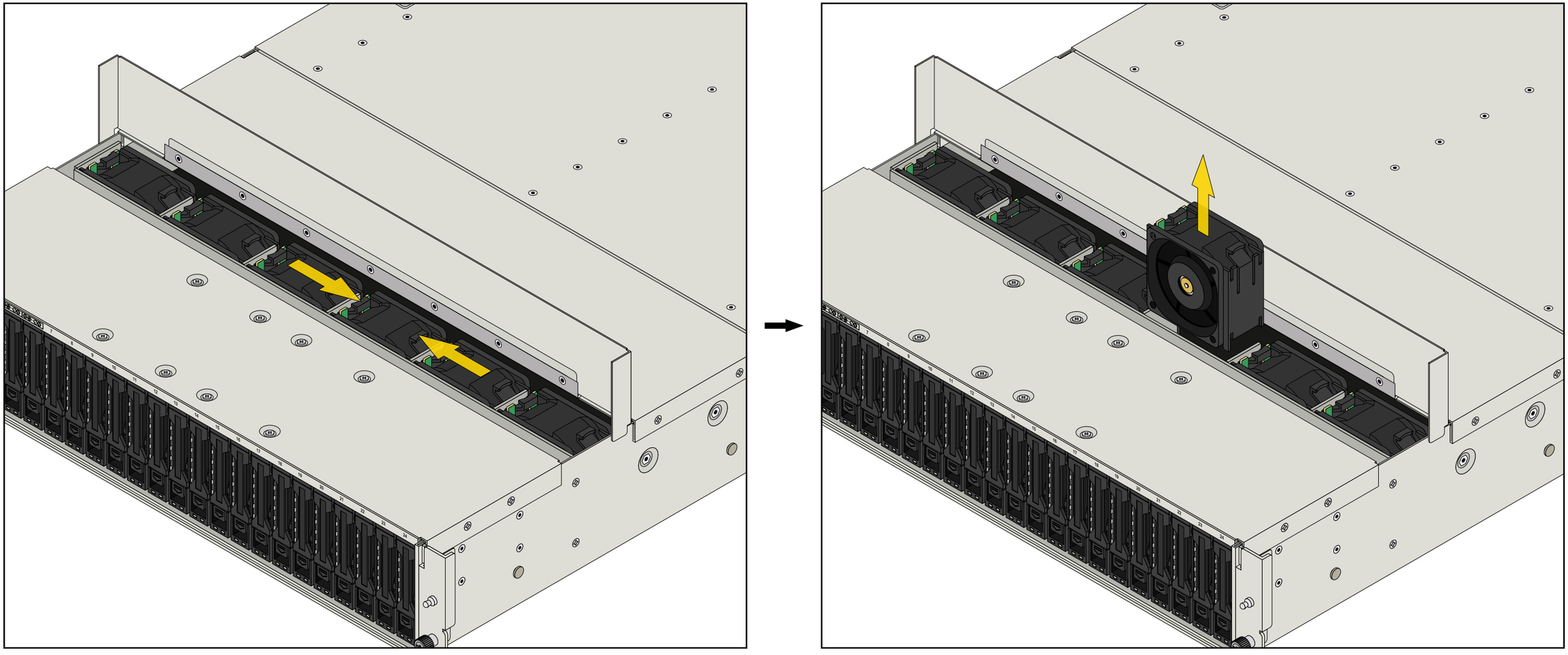
If the ES24N is installed between two other systems, you might have to loosen the front thumbscrews and pull the ES24N out of the rack to access the fans.

5.1 Remove a Fan

Use two hands to open the fan shroud on the top-front end of the system.

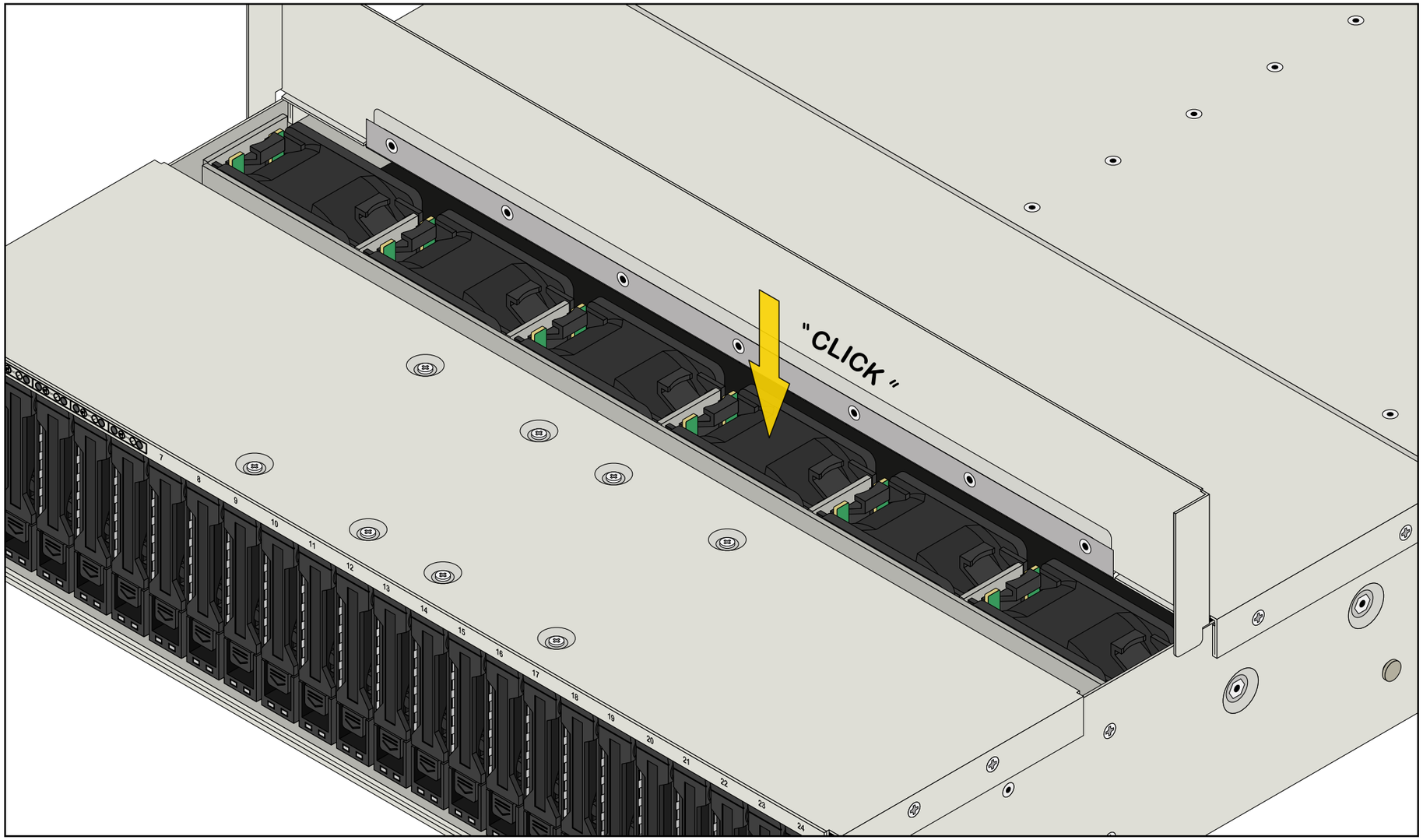


Pinch the retention clips on the fan, then gently pull it up and out of the system.



5.2 Install a Fan

Align the fan with the empty slot with the circuit board finger on the left and lower it down into the system. Gently push it into the connectors until it clicks and locks into place.



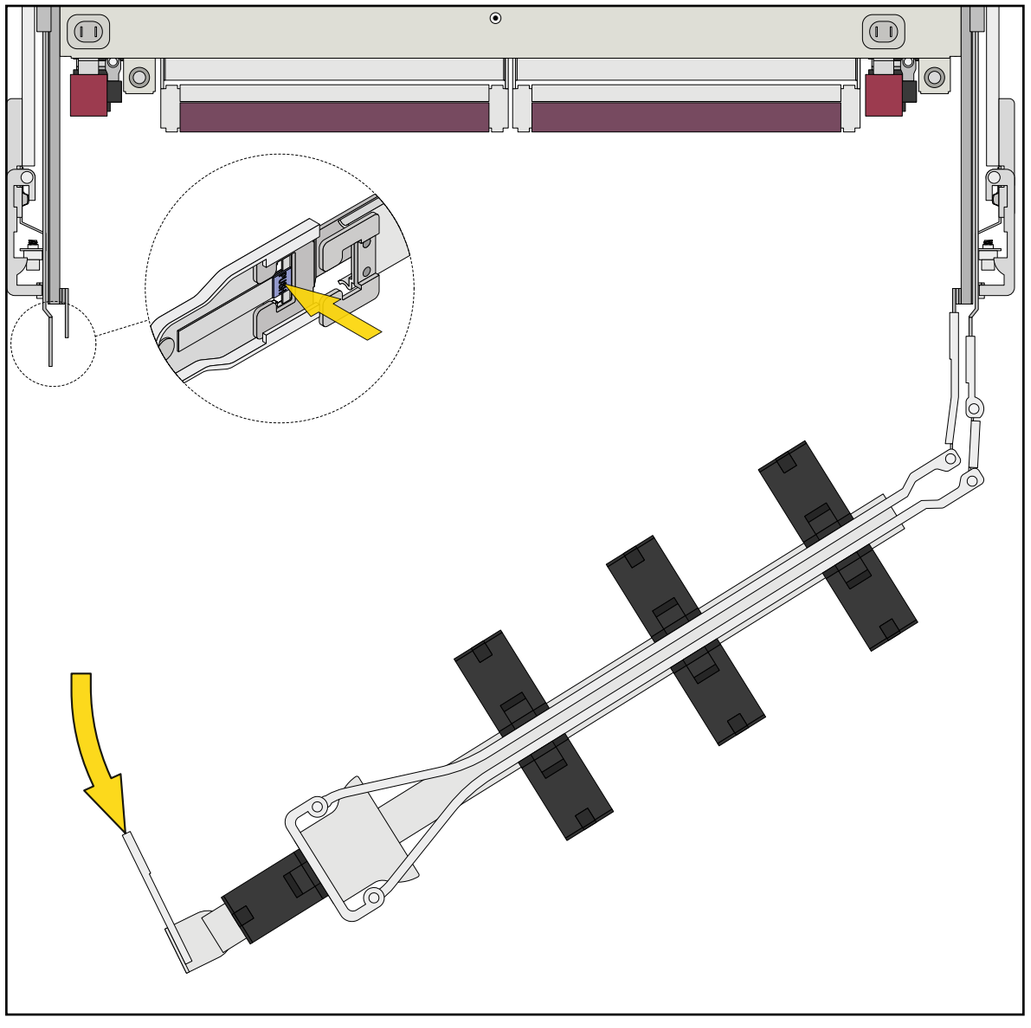
After you are finished replacing fans, lower the fan shroud back down and gently push it closed.

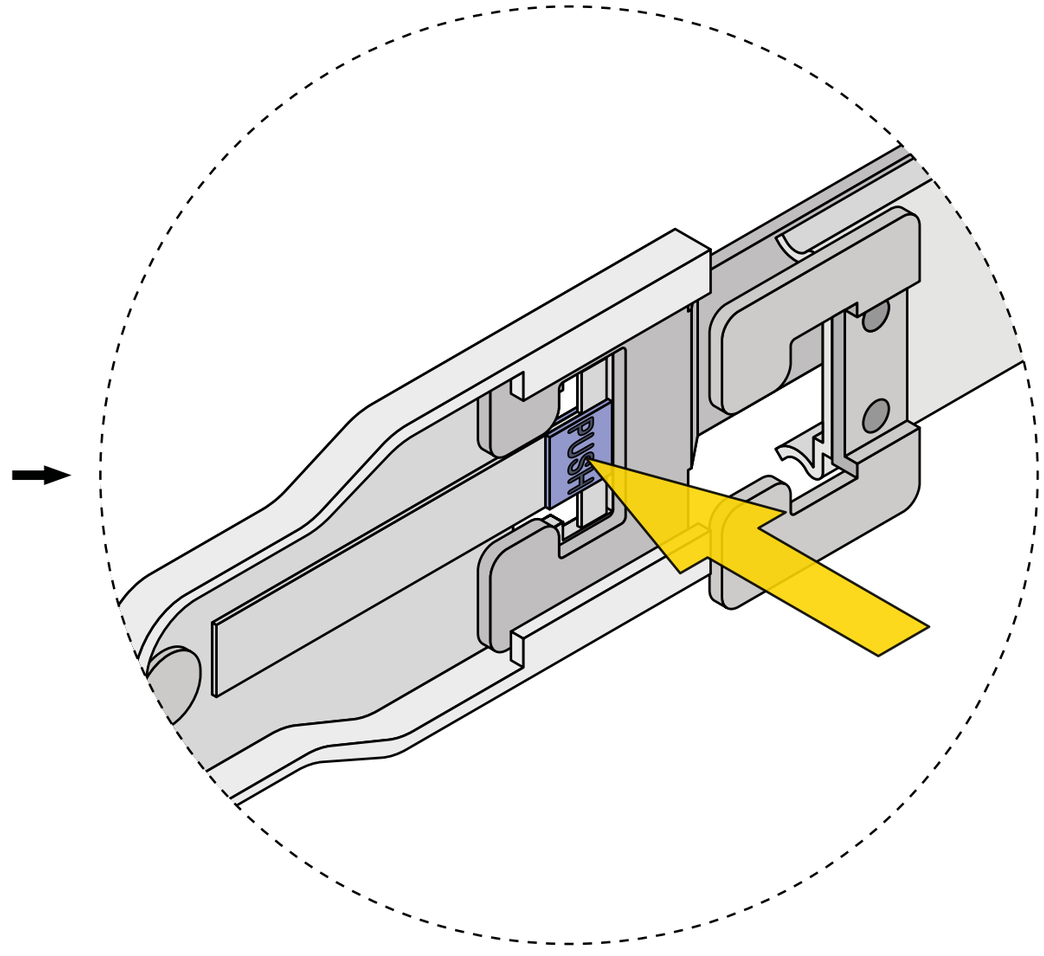
6 Accessing Rear System Components

6.1 Left-Side Components

When accessing rear system components on the left side of the system, You will only need to uninstall the left side of the CMA to access the left-side components.

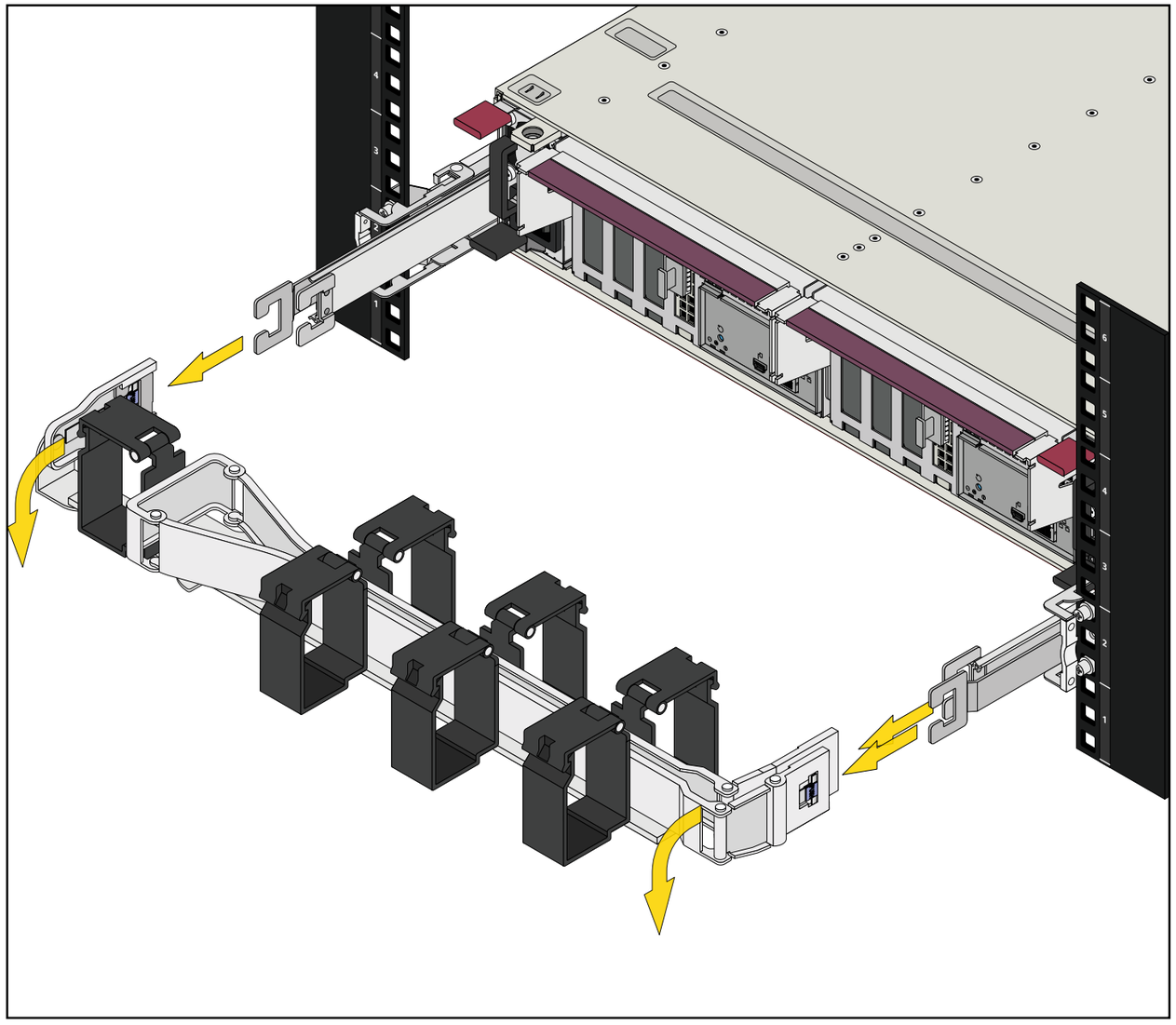
Push the blue release on the left CMA post and pull it away from the bracket, then swing the CMA out to the right.





6.2 Right-Side Components

When accessing rear system components on the right side of the system, you might find it easiest to completely remove the CMA from the back of the system. If you installed the CMA and cables with the recommended amount of slack and overall cable length, you should be able to disconnect the CMA and let it hang by the cables.



7 Power Supply Replacement

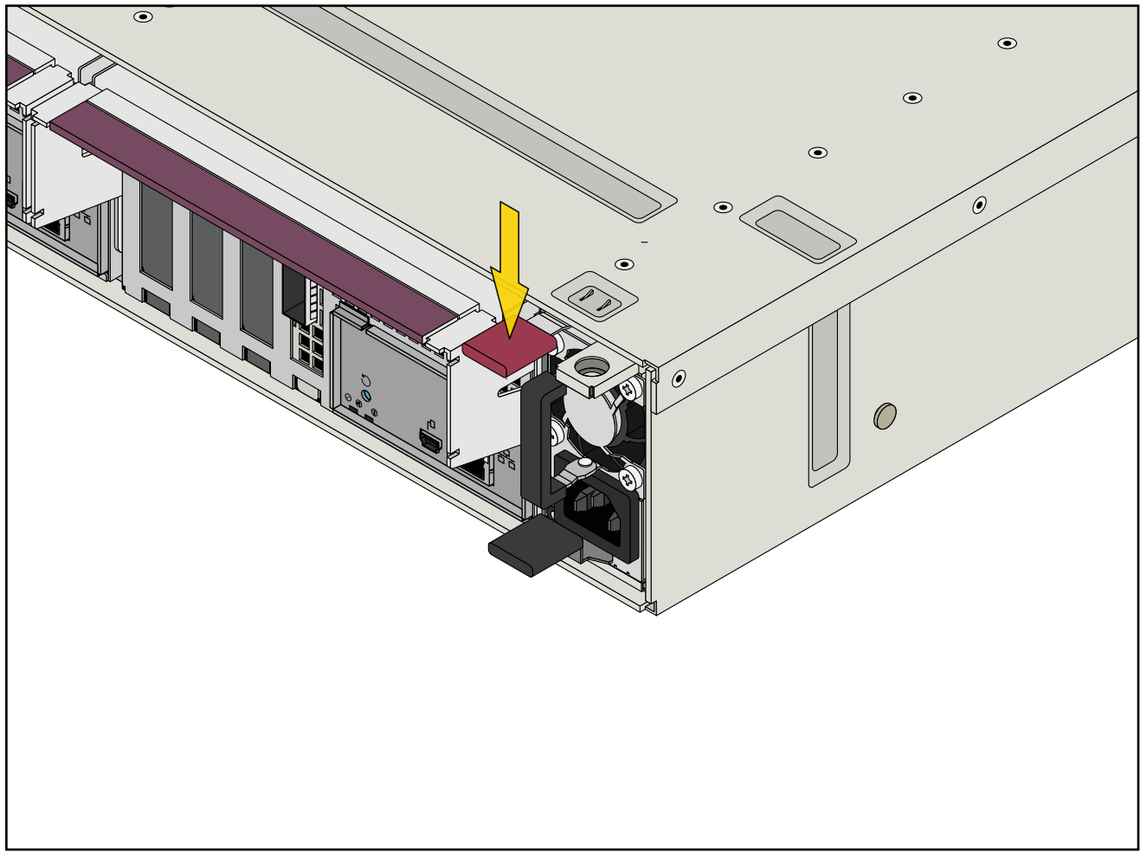
Personnel	Estimated Minutes	Required Tools	Hot-Swappable	Power-Down
1	5	Phillips Screwdriver	Yes	No

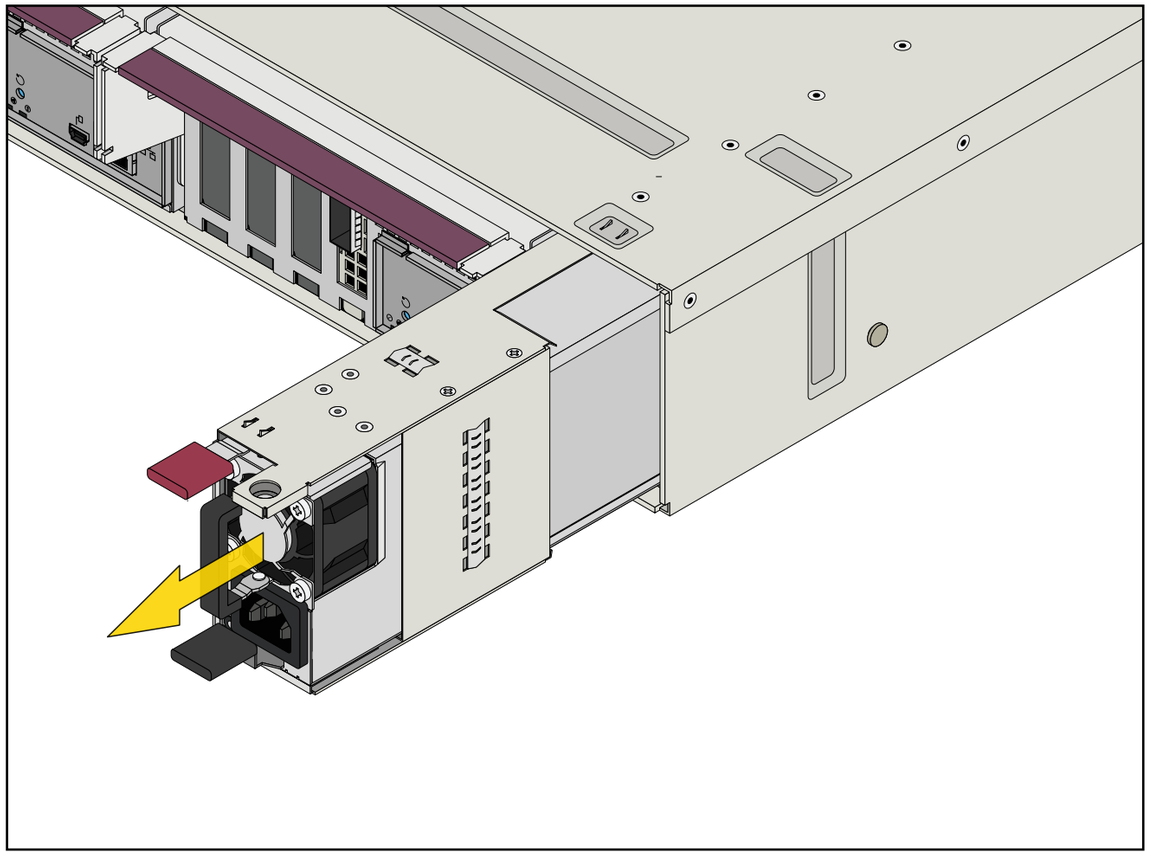
Warning - Electric Shock

Always unplug power supplies before removing them from the system.

7.1 Remove a Power Supply

Press the black tab down and grasp the black handle, then gently pull the power supply out of the chassis.

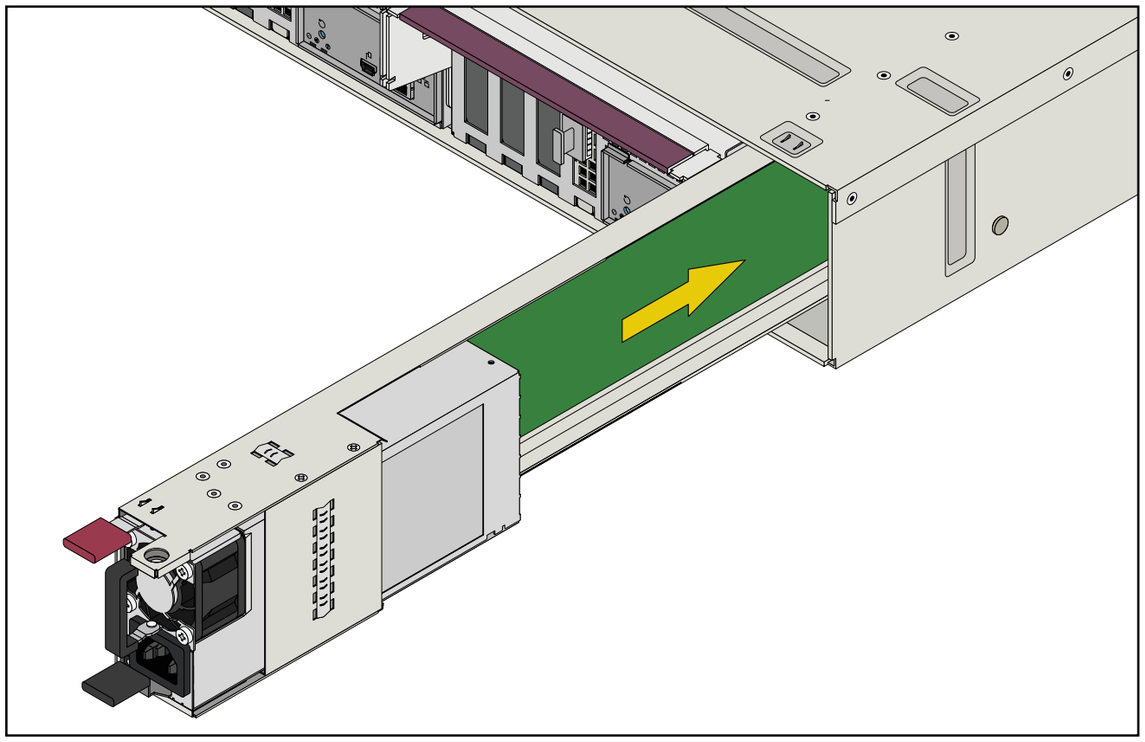


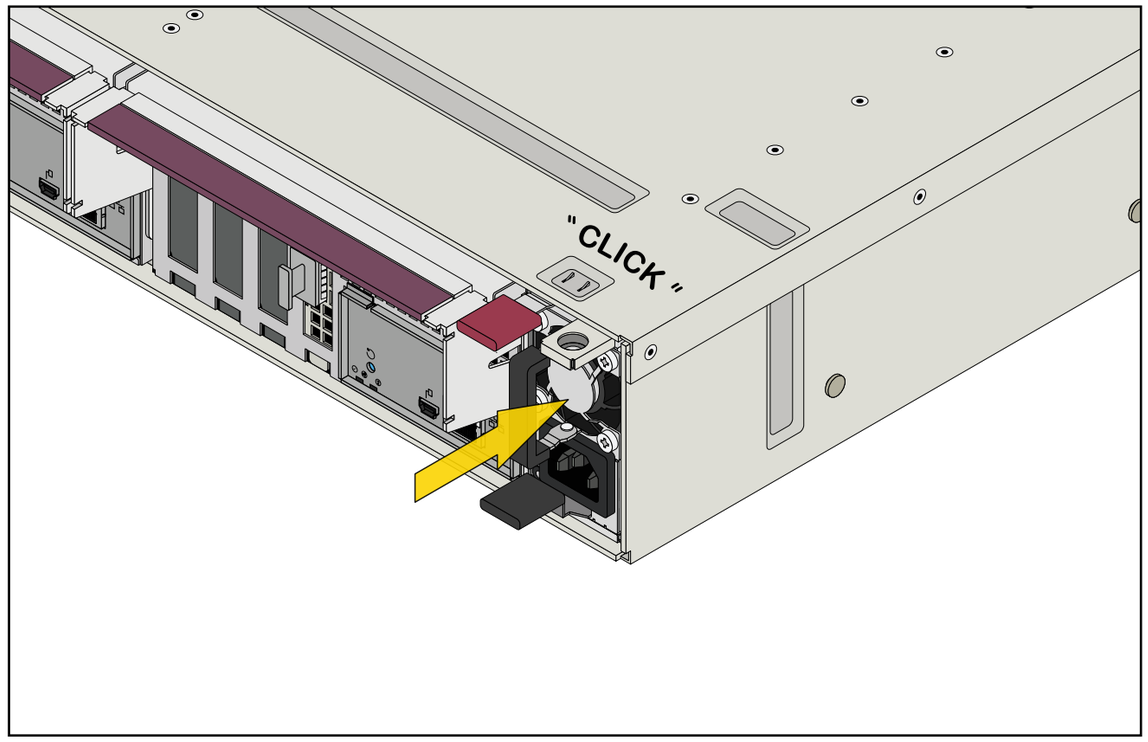


7.2 Install a Power Supply

Align the power supply with the empty slot slide it into the chassis with the black tab on the top.

Push slowly and firmly until the power supply slides entirely into the chassis and the black tab clicks into place.



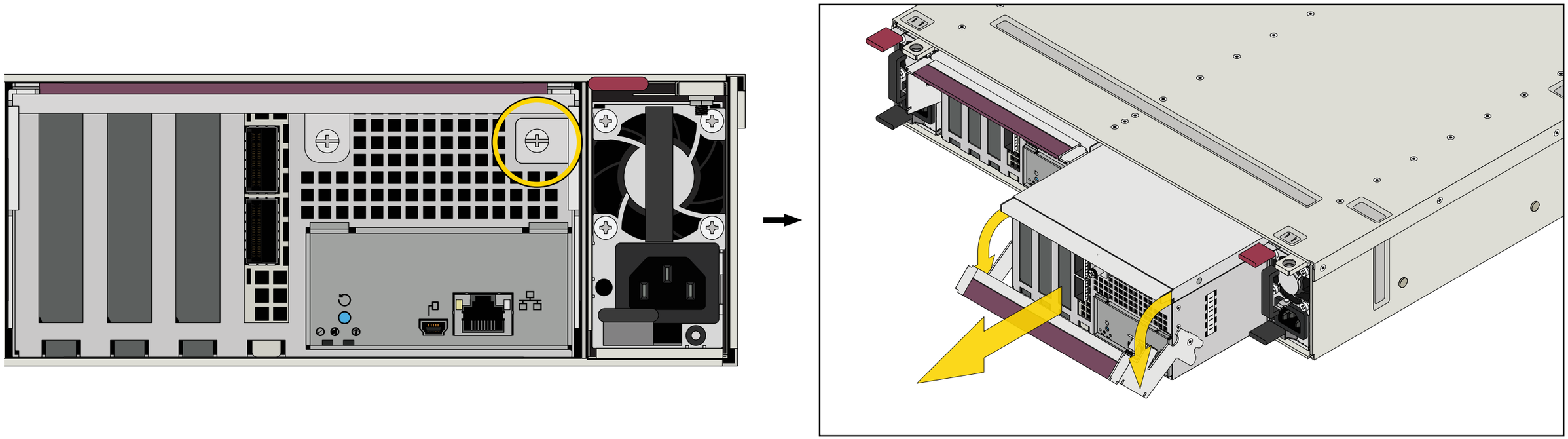


8 Expander Replacement

Personnel	Estimated Minutes	Required Tools	Hot-Swappable	Power-Down
2	10	Phillips Screwdriver	Yes	No

8.1 Remove an Expander

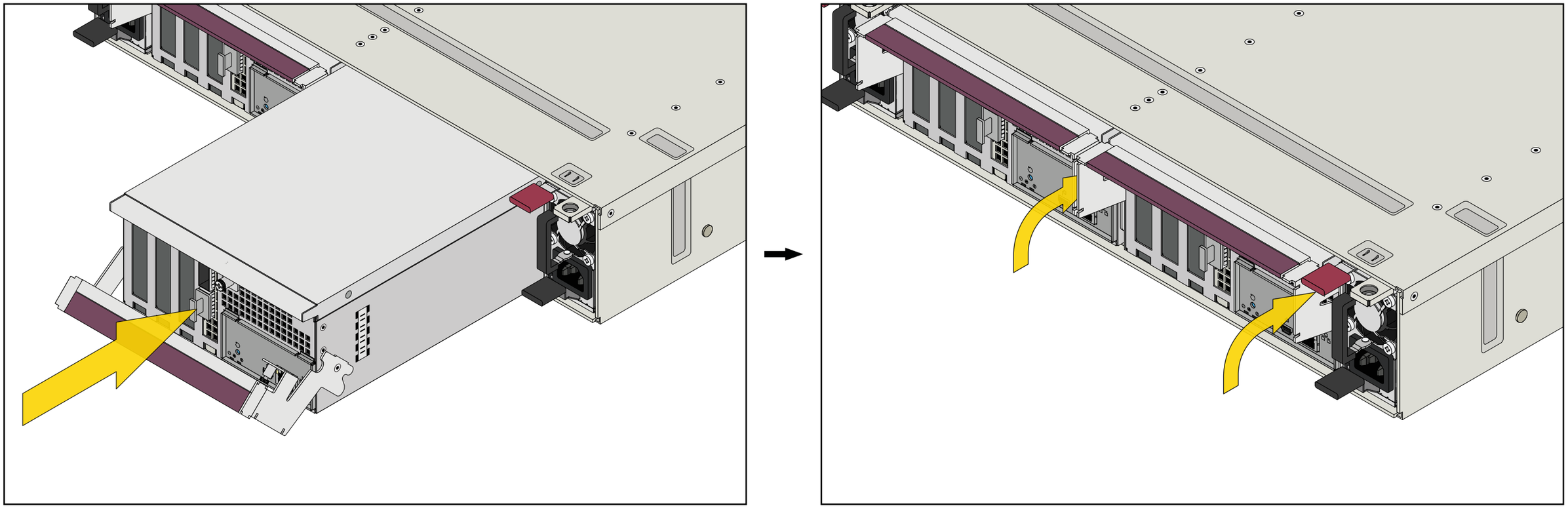
Loosen the thumbscrew that secures the expander locking arm with a #2 Phillips head screwdriver, then swing the arm down and gently pull the expander out of the system.



8.2 Install an Expander

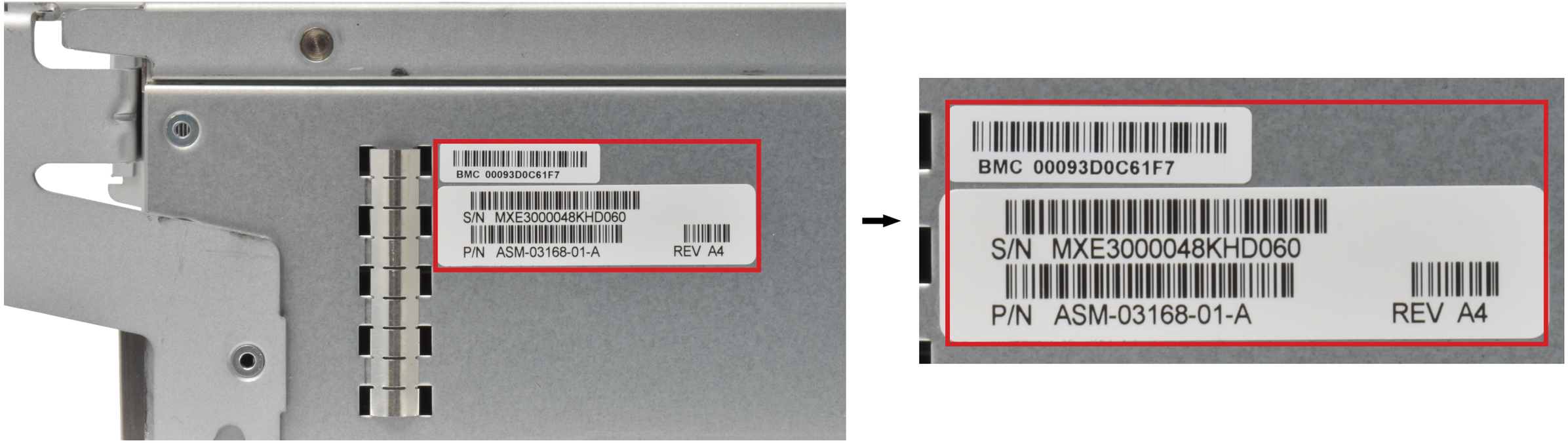
Replace the expander lid and tighten the thumbscrew.

Align the expander with the slot on the back of the system and guide it in until the locking arm begins to swing up. Swing the locking arm to the closed position and tighten the thumbscrew that secures the expander.



9 Expansion Cabling

If the Serial Tracking Database does not have expander BMC MAC addresses, serial numbers, part numbers, or revisions, record them before cabling the ES24N.

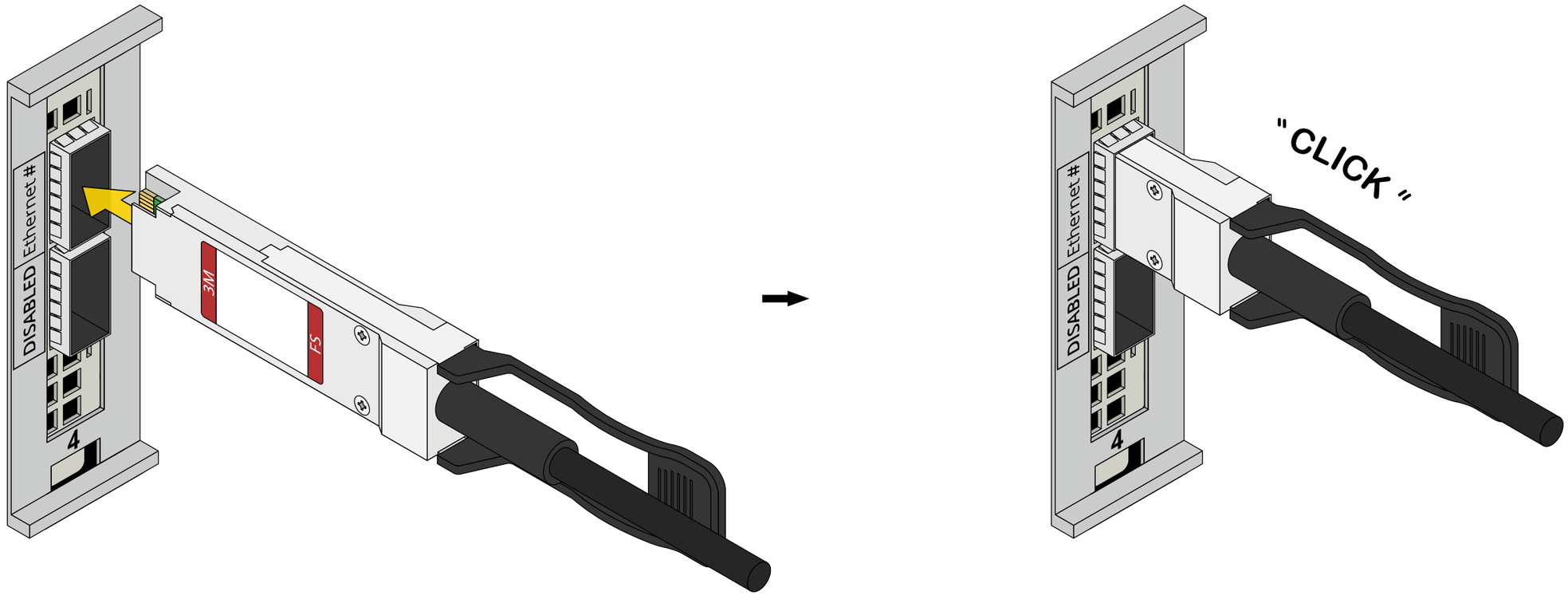


Insert the DAC optics into the first (top) ethernet port. The optics cables click and lock into place when installed correctly. Repeat for the other controller.

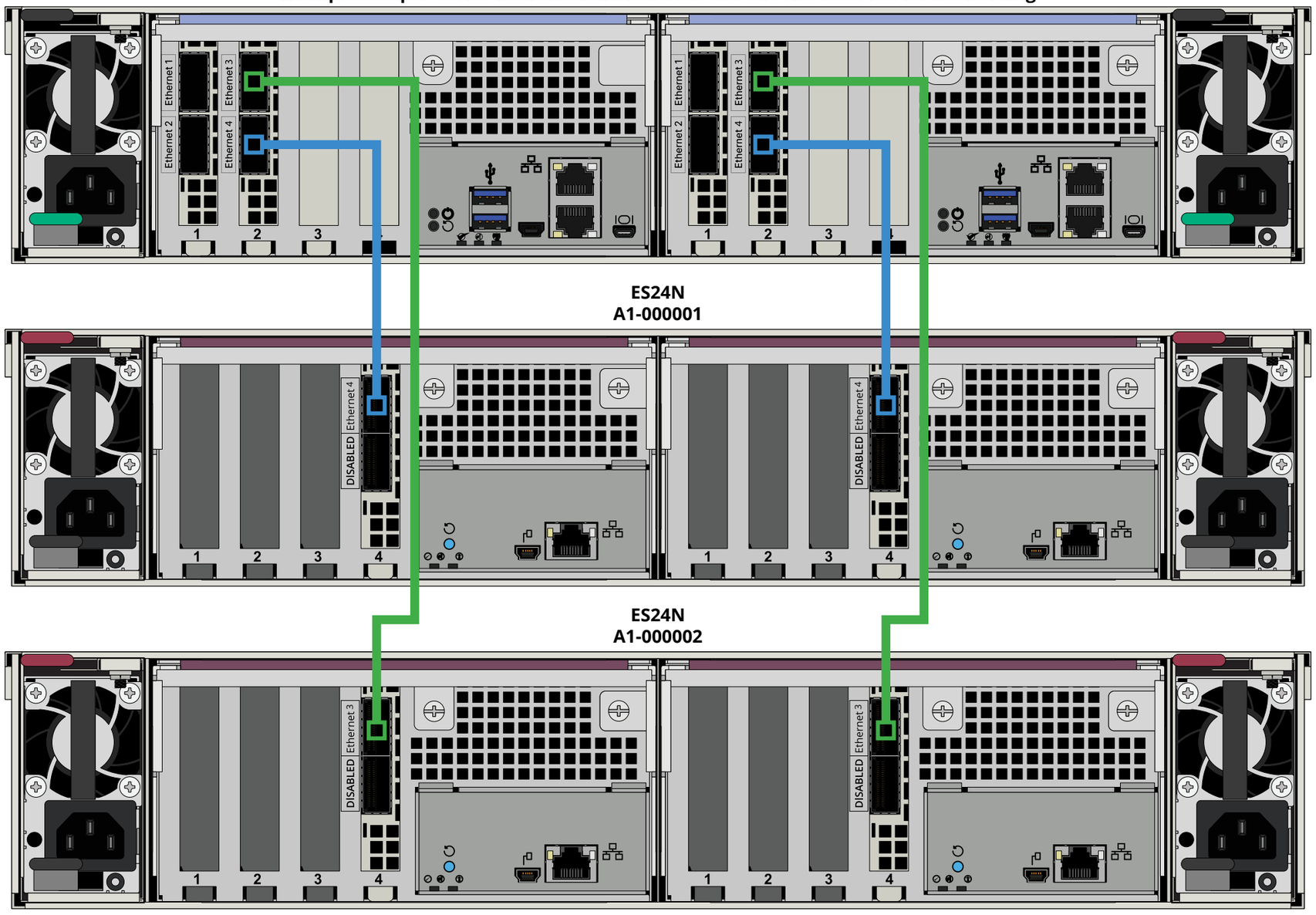
⚠ Important - Cabling Sequence

You must connect the ES24N DAC cables to the F-Series numerical ethernet ports in descending order, starting with the ES24N that has the **lowest A1 serial number**.

Connect the left ES24N IOM to the left F-Series controller, and the right ES24N IOM to the right F-Series controller. See the diagram on the next page for reference.



Example Setup: F-Series with two ES24N shelves and one NIC reserved for networking



10 Connecting the ES24N to the F-Series

Before changing ES24N settings, find out if the IP addresses were configured by iX (static) or by the customer (DHCP).

10.1 Serial Login

Attach a serial cable from IOM1 on the ES24 to the active controller on the F-Series.

Open the **Shell** (**System Settings > Shell**) on the active F-Series controller and list the active serial ports with:

```
# ls /dev/tty*|grep 'USB\|ACM'
```

Modify the permissions using the following command:

```
# chown :wheel /dev/tty<USB/ACM><0/1>
```

- `<USB/ACM>` is the serial port type returned from the `ls` command
- `<0/1>` is the port number you want to access

Press Enter again to log into the ES24N.

If the shelf uses iX-configured static IP addresses go to "10.2 ES24N Uses Static IP Addresses" on page 26.

If the shelf uses DHCP IP addresses, go to "10.3 ES24N Uses DHCP IP Addresses" on page 28.

10.2 ES24N Uses Static IP Addresses

10.2.1 Validate Static IP Addresses

To validate that the IOMs have the correct static IP addresses, run the following curl command on IOM1:

```
# curl -k -u 'Admin:<PASSWORD>' https://<IP>/redfish/v1

{"@odata.id":"/redfish/v1","@odata.type":"#ServiceRoot.v1_16_0.ServiceRoot","AccountService":{"@odata.id":"/redfish/v1/AccountService"},"Chassis":{"@odata.id":"/redfish/
v1/Chassis"},"Fabrics":{"@odata.id":"/redfish/v1/Fabrics"},"Id":"RootService","Links":{"Sessions":{"@odata.id":"/redfish/v1/SessionService/Sessions"}},"Managers":{"@
odata.id":"/redfish/v1/Managers"},"Name":"Root Service","Product":"ves-vds2249r-RFlex","RedfishVersion":"1.16.0","SessionService":{"@odata.id":"/redfish/v1/
SessionService"},"Storage":{"@odata.id":"/redfish/v1/Storage"},"Tasks":{"@odata.id":"/redfish/v1/TaskService"},"UUID":"66a31ab8-5e99-4df3-a6ce-b063d2bbf78b","UpdateServi
ce":{"@odata.id":"/redfish/v1/UpdateService"}}
```

- `<PASSWORD>` is the Admin password
- `<IP>` is the IOM IP address

The command should return the IOM UUID (highlighted in blue).

Next, SSH into the F-Series the ES24N is connected to and run a jbof query:

```
# midclt call jbof.query |jq
[
  {
    "id": 1,
    "description": "es24n-101",
    "index": 0,
    "uuid": "66a31ab8-5e99-4df3-a6ce-b063d2bbf78b",
    "mgmt_ip1": "10.220.2.145",
    "mgmt_ip2": "10.220.2.146",
    "mgmt_username": "Admin",
    "mgmt_password": "MXE3000043CHA00A"
  }
]
```

The UUID (highlighted in blue) should match the UUID you got from the curl command.

Make sure the mgmt_ip1 and mgmt_ip2 static IP addresses (also highlighted in blue) match the ones in the customer config sheet.

10.2.2 Configure Static IP Addresses

Run the following command **on IOM1** to assign static a IP address.

```
# curl -k -u 'Admin:<PASSWORD>' -X PATCH \
  https://<CURRENTIP>/redfish/v1/Managers/IOM1/EthernetInterfaces/1 \
  -d '{"IPv4StaticAddresses": [{"Address": "<IOM1IP>", "Gateway": "<IOMGATEWAY>", "SubnetMask": "<IOMNETMASK>"}]}'
```

- `<PASSWORD>` is the Admin password
- `<CURRENTIP>` is the IOM IP address
- `<IOM1IP>` is the intended customer config IOM1 IP address
- `<IOMGATEWAY>` is the intended customer config IOM gateway
- `<IOMNETMASK>` is the intended customer config IOM netmask

Then run the next command to disable DHCP.

```
# curl -k -u 'Admin:<PASSWORD>' -X PATCH \
  https://<CURRENTIP>/redfish/v1/Managers/IOM1/EthernetInterfaces/1 \
  -d '{"DHCPv4": {"DHCPEnabled": false}}'
```

Now run the same commands **on IOM2** using the new IOM1 static IP address.

```
# curl -k -u 'Admin:<PASSWORD>' -X PATCH \
  https://<IOM1STATICIP>/redfish/v1/Managers/IOM2/EthernetInterfaces/1 \
  -d '{"IPv4StaticAddresses": [{"Address": "<IOM2IP>", "Gateway": "<IOMGATEWAY>", "SubnetMask": "<IOMNETMASK>"}]}'
```

- `<PASSWORD>` is the Admin password
- `<IOM1STATICIP>` is the IOM1 static IP address
- `<IOM2IP>` is the intended customer config IOM2 IP address
- `<IOMGATEWAY>` is the intended customer config IOM gateway
- `<IOMNETMASK>` is the intended customer config IOM netmask

```
# curl -k -u 'Admin:<PASSWORD>' -X PATCH \
  https://<IOM1STATICIP>/redfish/v1/Managers/IOM2/EthernetInterfaces/1 \
  -d '{"DHCPv4": {"DHCPEnabled": false}}'
```

10.3 ES24N Uses DHCP IP Addresses

10.3.1 DHCP Shelf is Remotely Identifiable

If the ES24N uses DHCP and you can identify it remotely via DHCP server/manager, run the following curl command on IOM1:

```
# curl -k -u 'Admin:<PASSWORD>' https://<IP>/redfish/v1

{"@odata.id":"/redfish/v1","@odata.type":"#ServiceRoot.v1_16_0.ServiceRoot","AccountService":{"@odata.id":"/redfish/v1/AccountService"},"Chassis":{"@odata.id":"/redfish/
v1/Chassis"},"Fabrics":{"@odata.id":"/redfish/v1/Fabrics"},"Id":"RootService","Links":{"Sessions":{"@odata.id":"/redfish/v1/SessionService/Sessions"}},"Managers":{"@
odata.id":"/redfish/v1/Managers"},"Name":"Root Service","Product":"ves-vds2249r-RFlex","RedfishVersion":"1.16.0","SessionService":{"@odata.id":"/redfish/v1/
SessionService"},"Storage":{"@odata.id":"/redfish/v1/Storage"},"Tasks":{"@odata.id":"/redfish/v1/TaskService"},"UUID":"66a31ab8-5e99-4df3-a6ce-b063d2bbf78b","UpdateServi
ce":{"@odata.id":"/redfish/v1/UpdateService"}}
```

- `<PASSWORD>` is the Admin password
- `<IP>` is the IOM IP address

The command should return the IOM UUID (highlighted in blue).

Next, SSH into the F-Series the ES24N is connected to and run a jbof query:

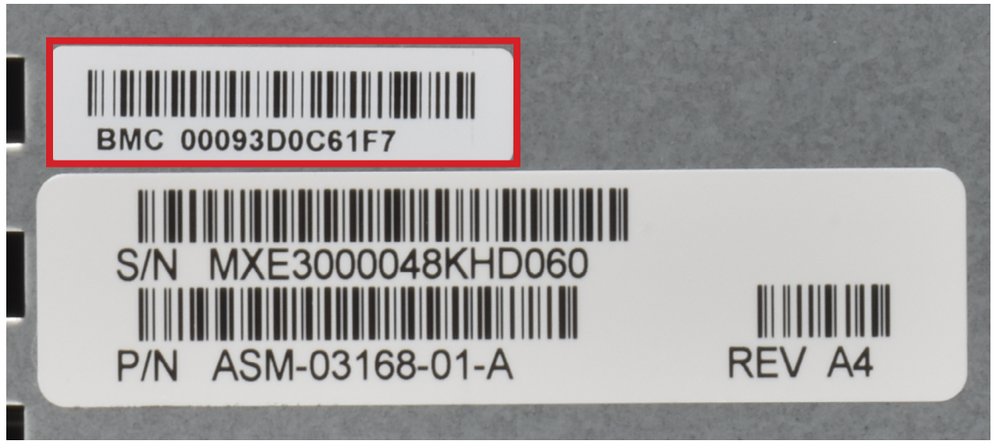
```
# midclt call jbof.query |jq
[
  {
    "id": 1,
    "description": "es24n-101",
    "index": 0,
    "uuid": "66a31ab8-5e99-4df3-a6ce-b063d2bbf78b",
    "mgmt_ip1": "10.220.16.232",
    "mgmt_ip2": "10.220.16.243",
    "mgmt_username": "Admin",
    "mgmt_password": "MXE3000043CHA00A"
  }
]
```

The UUID (highlighted in blue) should match the UUID you got from the curl command.

Make sure the mgmt_ip1 and mgmt_ip2 DHCP IP addresses (also highlighted in blue) match the ones in the DHCP server/manager.

Before moving on, ensure the Serial Tracking Database has the BMC MAC addresses for each expander. If it does not, remove each expander and record the BMC MAC addresses into the Serial Tracking Database.

See the photos below for reference.



10.3.2 DHCP Shelf is not Remotely Identifiable

Open the **Shell** (**System Settings > Shell**) on the F-Series and enter the following command to identify the IOM1 IP address.

```
# ip addr show eth0
```

Example return:

```
# ip addr show eth0
root@ves-ves-vds2249r-MXE3000043CHA007-mgr1:/usr/bin# ip addr show eth0
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast qlen 1000
    link/ether 00:09:3d:0c:4e:d5 brd ff:ff:ff:ff:ff:ff
    inet 10.220.13.101/20 brd 10.220.15.255 scope global dynamic eth0
...
```

Record the ES24N IOM1 password and IP address for the next step, then close and reopen the **Shell**.

Enter the following command to retrieve the IOM2 IP address:

```
# curl -k -u 'Admin:<PASSWORD>' https://<IOM1 IP>/redfish/v1/Managers/IOM2/EthernetInterfaces/1 |jq .IPv4Addresses
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100   860  100   860    0     0   7275      0 --:--:-- --:--:-- --:--:--  7288
[
  {
    "Address": "10.220.13.102",
    "AddressOrigin": "DHCP",
    "Gateway": "10.220.0.1",
    "SubnetMask": "255.255.240.0"
...
```

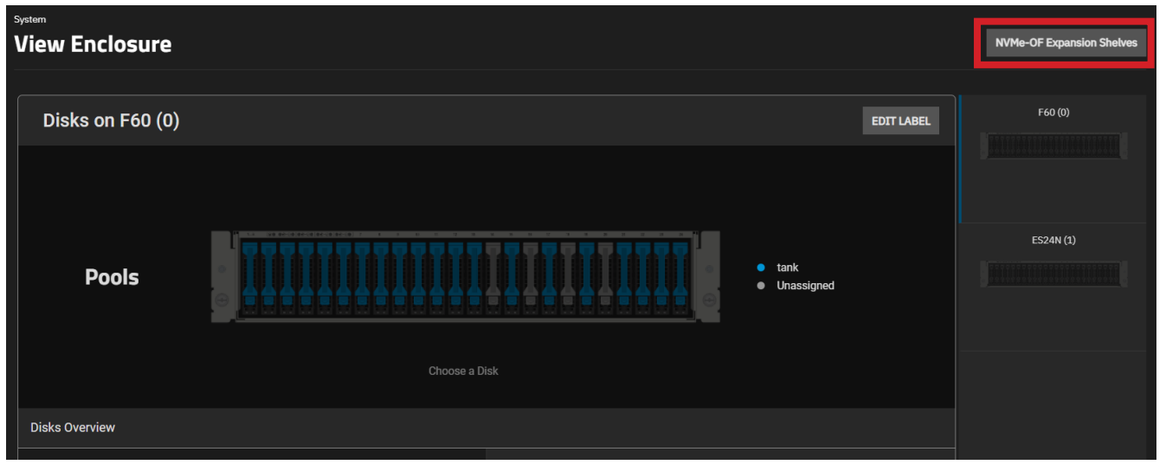
Record the IOM2 IP address, then refer to "10.2.2 Configure Static IP Addresses" on page 27 to set the IOMs to static addresses.

10.4 TrueNAS Configuration

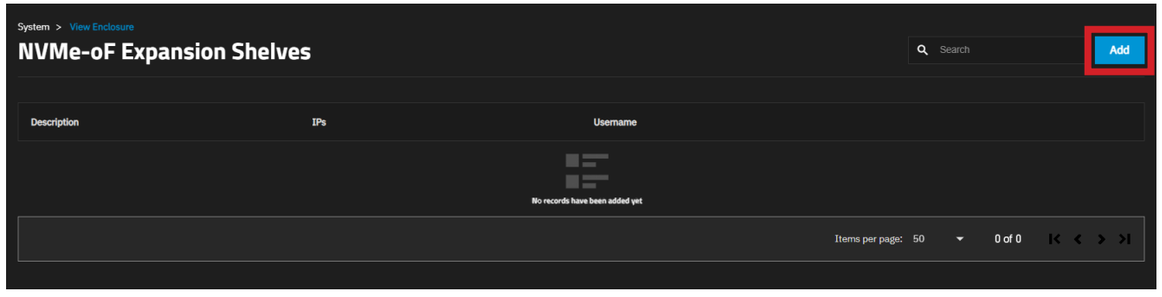
> **Note - Configuration Instructions**
>
> You only need to follow the instructions in this section if the shelf was not configured in TrueNAS by production, or if the shelf underwent a hard config reset.
>
> Otherwise, the TrueNAS connection reestablishes automatically after reconfiguring and applying the correct ES24N OOB IP addresses.

Log into the TrueNAS webUI and go to **System Settings > Enclosure**.

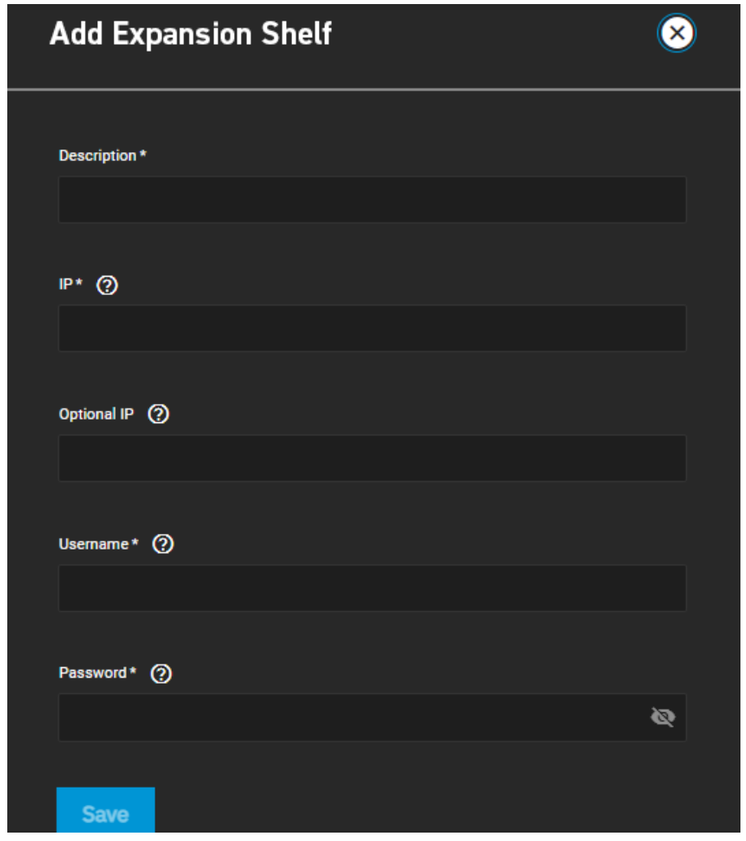
Click on **NVME-OF Expansion Shelves** to access the **NVME-oF Expansion Shelves** screen.



Click **Add** in the upper-right corner to configure an ES24N.

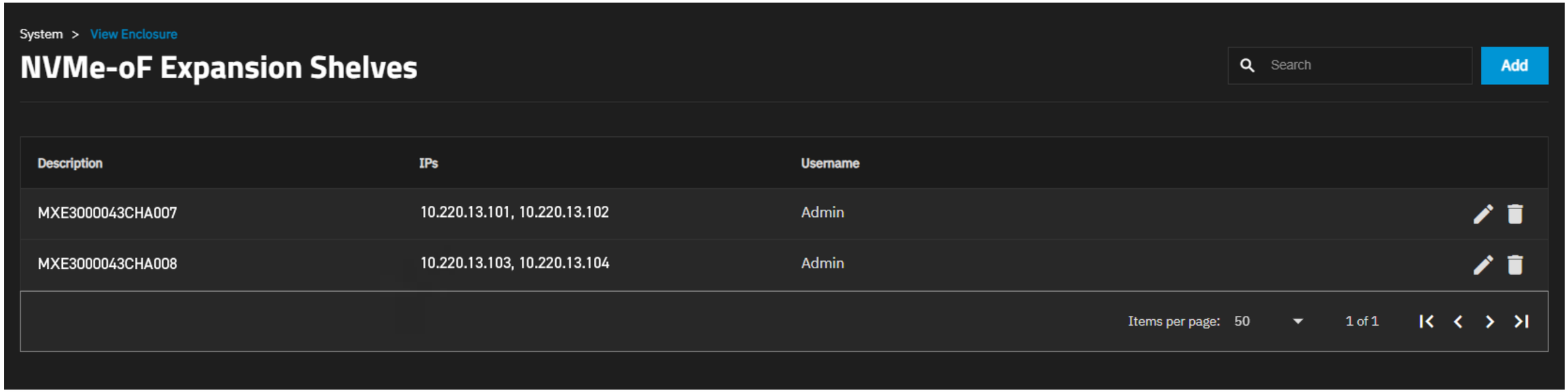


Fill out the **Add Expansion Shelf** form and click **Save**.



Setting	Description
Description	The name you want TrueNAS to display for the shelf.
IP	The IOM1 IP address
Optional IP	The IOM2 IP address
Username	Admin
Password	SB-327 IPMI/BMC password (chassis serial number). Ex. MXE3000043CHA007

After adding ES24N shelves to the system, TrueNAS lists them in the **NVME-OF Expansion Shelves** screen. You can edit them by clicking the pencil icons or delete them by clicking the trashcan icons.



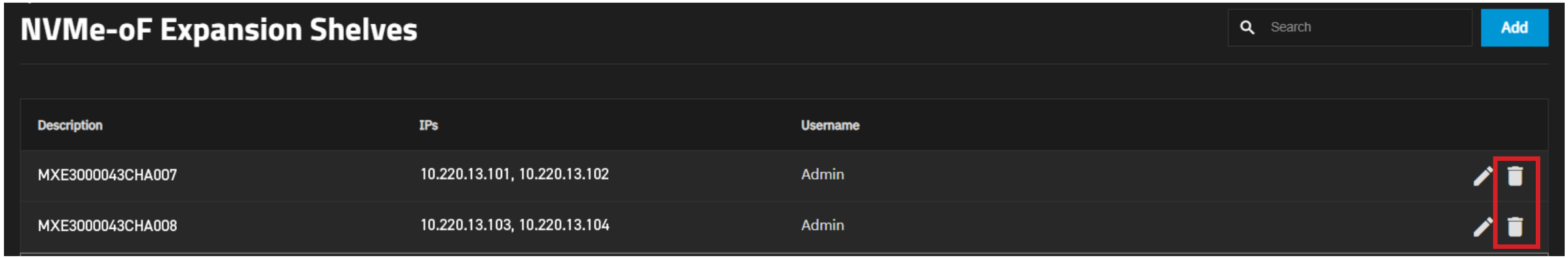
11 Validate ES24N Configuration

Run the following command on both F-Series controllers:

```
# sudo nvme discover |grep nqn |sort -u
```

The returns for each controller should have matching drives in the expected slots.

If the returns for each controller are different, or the drives are not in the expected slots, export the pools on the F-Series the ES24N(s) are connected to and delete the shelves in the **NVME-OF Expansion Shelves** screen.



Follow the instruction in "10.1 Serial Login" on page 25 to log into the ES24N IOM, then run the following string of commands to perform a hard reset and wipe the EEPROM.

```
# systemctl stop enclr_mgrd

# i2ctransfer -y 7 w2@0x70 3 0x00

# i2ctransfer -y 7 w2@0x70 1 0x01

# i2ctransfer -y 7 w2@0x70 1 0x07

# i2ctransfer -y 7 w10@0x54 0x01 0x00 0xff 0xff 0xff 0xff 0xff 0xff 0xff 0xff
```

Lastly, power-cycle the ES24N and go back to "10.3 ES24N Uses DHCP IP Addresses" on page 28.

Important - Serial Cable

Remove the serial cable ONLY after you verify that each expander is configured in TrueNAS and has matching drives in the expected slots.

12 Update IOM and Fabric Card Firmware

Tip - Parallel Updates

The update and failover steps of the procedure can be done for all connected ES24N shelves in parallel to eliminate the need for multiple failovers.

12.1 Identify Passive Head Unit Controller

Note - Passive Controller

This step is not necessary for single-controller systems.

Log into the TrueNAS head unit using SSH, then enter the

```
# midclt call failover.node
  A/B
```

The return should show the active controller (highlighted in blue). If the return is **A**, controller B is passive.

Now query the RDMA interface to find the passive controller IP address.

```
# midclt call rdma.interface.query
    ...
    "node": "A",
    "address": "10.10.10.10",
    ...
  },
  {
    "node": "B",
    "address": "11.11.11.11",
    ...
```

The return should list both controllers and their IP addresses. Record the passive controller IP address.

12.2 Identify ES24N IOM Data IP Address

Retreive the data IP from each ES24N IOM connected to the passive head unit controller using the following command:

```
# curl -sk -u 'Admin:<PASSWORD>' https://<IP>"/redfish/v1/Chassis/IOM1/
NetworkAdapters/1/NetworkDeviceFunctions/Ethernet1/EthernetInterfaces/1 | jq -r
'.IPv4Addresses[0].Address'
```

- `<PASSWORD>` is the BMC Admin password
- `<IP>` is the passive controller IP address you got from the previous step

Repeat this command for IOM B:

```
# curl -sk -u 'Admin:<PASSWORD>' https://<IP>"/redfish/v1/Chassis/IOM2/
NetworkAdapters/1/NetworkDeviceFunctions/Ethernet1/EthernetInterfaces/1 | jq -r
'.IPv4Addresses[0].Address'
```

The returns should list both IOMs and their IP addresses. Compare the two IOM IP addresses to the head unit passive controller IP address. The IOM that is part of the same point-to-point link is the correct one.

Typically, the correct IOM is the one that most closely matches the following formula:

IOM IP + 1 = Controller IP

For example, if the passive controller IP is 100.100.10.10, then the correct IOM is 100.100.10.9.

12.3 IOM Firmware Update

Download the 04.12.33 firmware file onto the TrueNAS head unit in your working directory.

⚠ Important - IOM Update Order

Always start with the IOM identified in "12.2 Identify ES24N IOM Data IP Address" on page 34.

Open the **Shell** on the TrueNAS system and run the following command to load the firmware file:

```
# curl -k -u Admin:<PASSWORD> https://<IP>/redfish/v1/UpdateService -X POST -F "software=@<FirmwareFile>" |jq .
```

- `<PASSWORD>` is the Admin password
- `<IP>` is the IOM IP address
- `<FirmwareFile>` is the name of the firmware file you uploaded to the working directory

Now run the update command on one of the IOMs:

```
# curl -k -u Admin:<PASSWORD> -X POST -d '{"ImageURI":"/redfish/v1/UpdateService/software","Targets":["/redfish/v1/Managers/<IOM1/2>"]}' https://<IP>/redfish/v1/
UpdateService/Actions/SimpleUpdate
```

- `<PASSWORD>` is the Admin password
- `<IP>` is the IOM IP address
- `<IOM1/2>` is the IOM you want to apply the update to

Use the task service to monitor both tasks:

```
# curl -k -u Admin:<PASSWORD> https://<IP>/redfish/v1/TaskService/Tasks/
```

After the IOM updates, restart it:

```
# curl -k -u Admin:<PASSWORD> -X POST 'https://<IP>/redfish/v1/Managers/<IOM1/2>/Actions/Manager.Reset' -d '{"ResetType":"GracefulRestart"}' |jq .
```

After restarting the IOM, update any other IOMs connected to the passive head unit controller.

12.4 IOM Firmware Validation

Enter the following command:

```
# curl -sk -u 'Admin:<PASSWORD>' https://<IP>/redfish/v1/Managers/<IOM1/2> |jq .FirmwareVersion
"ves-vds2249r-RFlex-MGR-04.12.30
```

- `<PASSWORD>` is the Admin password
- `<IP>` is the IOM IP address
- `<IOM1/2>` is the IOM (IOM1 or IOM2) you want to validate

The return should show the correct firmware version (highlighted in blue).

12.5 Fabric Card Firmware Update

> **Important - IOM Update**
> If you need to update the fabric card, update the passive IOM **first**. Even if you uploaded the firmware file to update the IOM, **you MUST upload it again** for the fabric card.

Download the 2.4.1 firmware file onto the TrueNAS head unit in your working directory.

Open the **Shell** on the TrueNAS system and run the following command to load the firmware file:

```
# curl -k -u Admin:<PASSWORD> https://<IP>/redfish/v1/UpdateService -X POST -F "software=@<FirmwareFile>" |jq .
```

- `<PASSWORD>` is the Admin password
- `<IP>` is the IOM IP address
- `<FirmwareFile>` is the name of the firmware file you uploaded to the working directory
- `<IOM1/2>` is the IOM you want to run the command on (the one that is passive)

```
# curl -k -u Admin:<PASSWORD> -X POST -d '{"ImageURI":"/redfish/v1/UpdateService/software","Targets":["/redfish/v1/Chassis/<IOM1/2>/NetworkAdapters/1"]}' https://<IP>/
redfish/v1/UpdateService/Actions/SimpleUpdate
```

Use the task service to monitor the update:

```
# curl -k -u Admin:<PASSWORD> https://<IP>/redfish/v1/TaskService/Tasks/
```

After the task completes, restart the fabric card:

```
# curl -k -u Admin:<PASSWORD> -X POST 'https://<IP>/redfish/v1/Chassis/<IOM1/2>/NetworkAdapters/1/Actions/Oem/VikingEnterpriseSolutions.Reset' -d
'{"ResetType":"GracefulRestart"}' |jq .
```

After restarting the fabric card, restart the IOM again:

```
# curl -k -u Admin:<PASSWORD> -X POST 'https://<IP>/redfish/v1/Managers/<IOM1/2>/Actions/Manager.Reset' -d '{"ResetType":"GracefulRestart"}' |jq .
```

After restarting the IOM, update any other fabric cards connected to the passive head unit controller.

12.6 Fabric Card Firmware Validation

Run the following command on IOM 1:

```
# curl -sk -u 'Admin:<PASSWORD>' https://<IP>/redfish/v1/Chassis/IOM1/NetworkAdapters/1 | jq .Oem.VikingEnterpriseSolutions.Version.ActiveFirmwareVersion | cut -d ' ' -f1
"A2000Tfw_2.4.1"
```

- `<PASSWORD>` is the Admin password
- `<IP>` is the IOM IP address

The return should show the correct firmware version (highlighted in blue).

Repeat the command on IOM 2:

```
# curl -sk -u 'Admin:<PASSWORD>' https://<IP>/redfish/v1/Chassis/IOM2/NetworkAdapters/1 | jq .Oem.VikingEnterpriseSolutions.Version.ActiveFirmwareVersion | cut -d ' ' -f1
"A2000Tfw_2.4.1"
```

12.7 Failover and Repeat for Active Controller

After updating the IOM and fabric card firmware, log into the TrueNAS web UI and initiate a failover to switch the active controller to passive.

After the failover completes, repeat the process starting at "12 Update IOM and Fabric Card Firmware" on page 34 to updated the other IOM and fabric card.

13 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/

14 Contact 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)