Western Digital

Installation Guide
OpenFlex™ Data24 4000 Series

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Revision History

Date	Revision	Comment
November 2024	01	Initial release
March 2025	02	• Updated graphic and information for **Unpacking the OpenFlex Data24 4000 Series** *(page 8)* • Various editorial updates
March 2025	03	Branding update
July 2025	04	• Updated location of MAC addresses in **Discovering and Connecting to NVMe Devices on OpenFlex Data24 4000 Series** *(page 25)* • Added procedure for **Drive Installation** *(page 17)* • Added procedure for **Finding OOBM Port IP Addresses with DHCP** *(page 21)* and **Finding OOBM Port IP Addresses with Non-DHCP Servers** *(page 22)*

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Installation

This document provides information, requirements, and procedures necessary to install and complete the initial bringup of an OpenFlex Data24 4000 Series storage platform.

In This Chapter:

1.1 Installation Equipment Requirements

This section lists everything that must be in place or available to perform the installation, including the equipment and its components.

Table 2: Included Equipment and Components

Category	Item	# Included
Components	Chassis w/ 2x Power Supply Units (PSU), 2x IO Modules (IOM), and System Fans	1
	Rail Assembly kit (includes left and right rail assemblies and rack-mounting hardware)	1
	Drive Assembly Storage Devices	1 - 24 (depending on configuration)
	Drive Blanks	0 - 23 (depending on configuration)
Screws	T15 Torx Flat Head screws w/ washers	8
Cables	3m, C13 - C14 Power Cables	2

Table 3: Additional Equipment Needed

Equipment	Required or Recommended?
T15 Torx Screwdriver	Required
Level	Recommended
Lift Equipment	Recommended
ESD Mitigation Equipment (site specific)	Required
Ethernet Cable w/ RJ-45 connectors	Required

Table 4: Torque Specifications for Screws

Screw Type	Where Used	Torque Value
T15 Torx screws	Rail Assemblies	3.38-3.61 Nm / 30-32 in-lbf

1.2 Installation Safety

Safety is the number one priority for personnel responsible for installing the OpenFlex Data24 4000 Series platform. This section outlines what to consider before performing an installation.

Protect Yourself and Others

Before installing an OpenFlex Data24 4000 Series , it is important to take precautions to keep all personnel performing the installation—or individuals near the installation site—safe. Make sure all paths and floors are clean and free of obstacles. Do not wear clothing that is loose or can become tangled or catch on anything, or clothing that is too tight and may restrict movement. Read all safety labels and instructions in this manual and on the equipment being used for installation. Never lift the OpenFlex Data24 4000 Series alone; it should always be teamlifted. When installing the unit in a rack, it is highly recommended that you install it at the lowest possible U height of the rack. This is intended to prevent an imbalanced load and it keeps the center of gravity low on the rack to help prevent tipping hazards.

Protect Your Equipment

Always use the proper tooling outlined in this document during installation. This includes torque specifications and driver heads when installing screws, lifting equipment, and safety equipment, as well as the OpenFlex Data24 4000 Series itself. Always respect the ESD requirements outlined at your site. Use ESD mitigation and prevention equipment to prevent discharges that may damage equipment. During installation, do not tip the enclosure.

The following is a list of safety equipment that should be considered before proceeding:

- Safety Shoes/Steel-toed Boots (ESD Safe is a plus)
- Lifting equipment
- ESD mitigation equipment
- Safety vests and hard hats
- Rack support or anchoring equipment

1.3 Before You Begin

The installation process for the OpenFlex Data24 4000 Series happens in two basic phases, which are described in the following procedures:

1.3.1 How to Report Damage

During the installation process, there are a number of inspection steps where the installation team should be looking for damage to the product that may have occurred during shipment. If damage is found, document the items using the following process.

**Before you begin:** Before reporting damage to the system, please locate the system information.

There is a small plastic tab located on the front of the Chassis that can be pulled out to show the vital system details such as the part number, serial number, and chassis revision number.
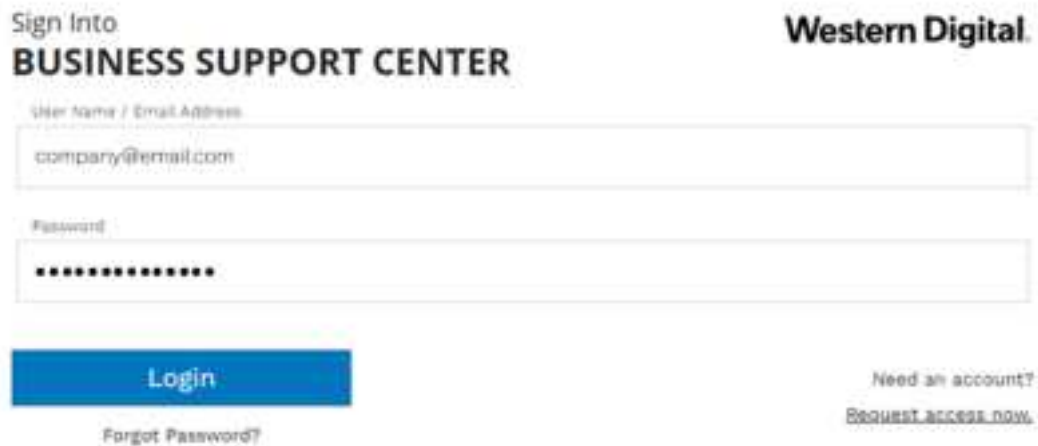
Figure 1: Chassis Pullout Tab Location
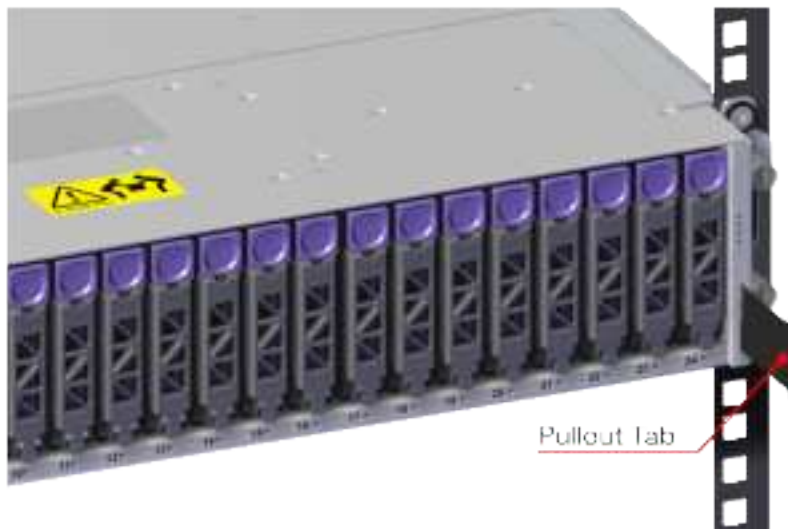
Step 1: Take two digital photos of the damaged packaging or component, one closeup shot showing the damage in detail and one further out so the support engineers working the case can see where the damage occurred.

Step 2: Open a web browser and go to https://portal.wdc.com/Support/s/login/.

The Western Digital **Business Support Center** page will appear:
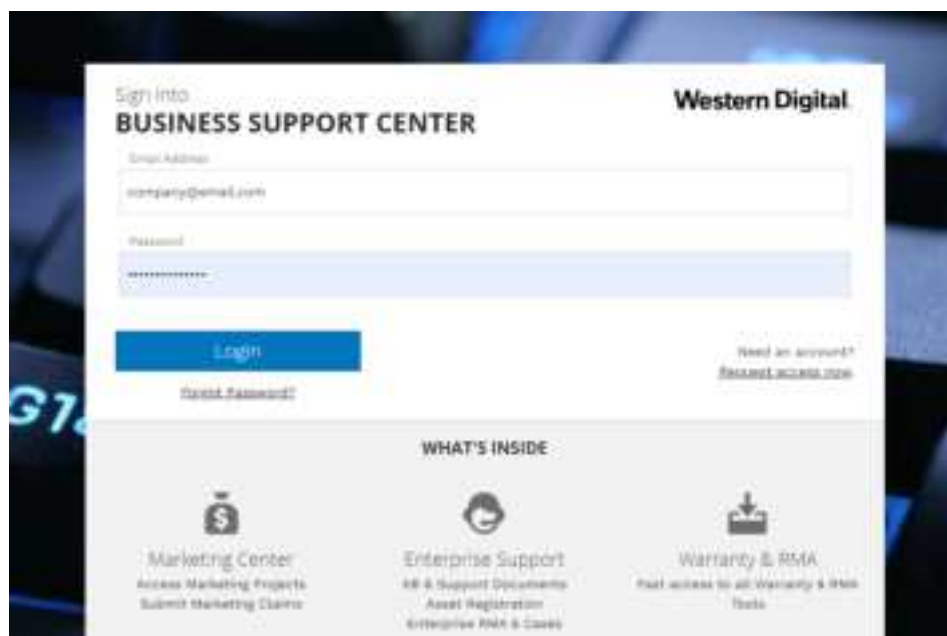
Step 3: Log in to your Support Portal account using an email address and password.

The Western Digital **Business Support Center** page will appear, providing various support-related options.

Step 4 :   Click the **Cases** icon.

The **Case Dashboard** page will appear.

Step 5 :   Click the **Create Case** icon.

The **Create New Case** page will appear.

Step 6 : At a minimum, select a **Case Reason**, **Brand**, and **Severity** from the available drop-down menus, and provide a brief explanation of the issue in the **Summary** field; these fields are required.

Step 7 : In addition, type the **Part Number** and **Serial Number** into the appropriate fields, and select the **Product Category** and **Product Sub-Category** that match your Product Name / Model Number.

Tip: For instructions on filling out the remaining fields, refer to the Business Support Center User Guide, available through the link on the **Business Support Center** page:

READ ME FIRST

Enterprise Support Center User Guide

Step 8 : Attach Photos to the Case.

    a. To attach photos to the Case, click **Upload Files** and navigate to the location of the photos and select all that need to be added to the case.

      An Upload Files dialogue box will appear.
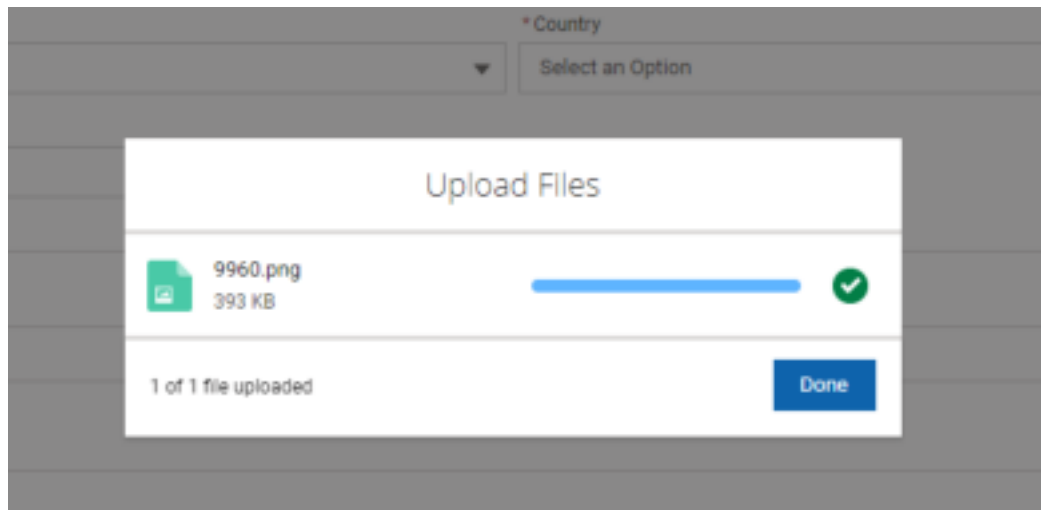
    b. Click **Done** to close the Upload Files Dialogue box.

      The Photos will appear as attachments on the case.

Step 9 : Click the **Submit** button:

1.4 Unpacking the OpenFlex Data24 4000 Series

The OpenFlex Data24 4000 Series and its components are contained in a single shipping box. The box includes the chassis which has all of its major internal components pre-installed and is wrapped in plastic. The shipping box also contains a rail kit container, mounting hardware, and power cables. It is highly recommended that the system is unpacked in an area that is ESD safe and close to the installation space.

> (i) **Attention:** Zero capacaity and partially populated 4000 Series chassis are shipped with pre-installed drive blanks. Drive carrier assemblies are packaged separately. Do not discard this box; the assemblies are required to install SSDs.

Figure 8: Packaging Diagram
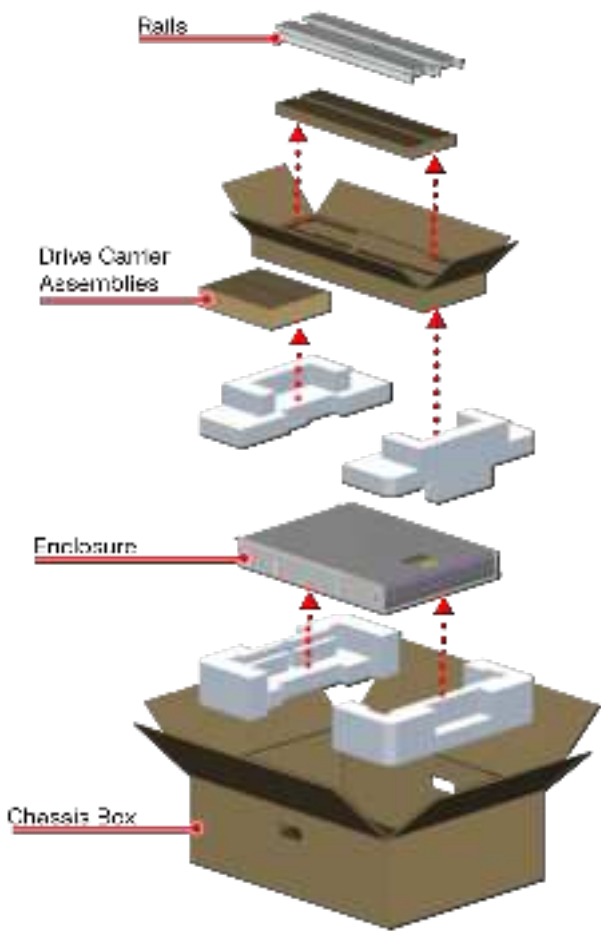
Table 5: Packaging Contents

Category		
Components (Installed)	Drive Assemblies	24
	PSUs	2
	IOMs	2
	Fan Modules (built into the Chassis)	4
Components (Included)	Rail Kit	1 (2 pc)
	Power Cables	2
	Drive Carrier Assemblies	24
Screws and Washers	T15 Torx	8
	Sheet Metal Washers	8

1.5 Installation Procedure

This procedure supports the installation of the OpenFlex™ Data24 4000 Series .

Replacement Requirements		
Personnel Required		1
Average Installation Time		15 minutes
Tool	# Needed	Required vs. Optional
T15 Torx screwdriver	1	Required
Level	1	Optional

- ESD Sensitive
- Electric Shock

Step 1: Determine the installation location of the OpenFlex™ Data24 4000 Series . Verify that the planned installation location for the enclosure has 1000 mm (39.4 in.) of usable rack space, door to door, vertical rack rails set between 650 mm – 850 mm / 25.6 in. – 33.46 in., and 2 rack units (U) of available space.

> ⚠️ **Caution:** Always install rack-mounted equipment in the lowest available U height in order to keep the rack's center of gravity low and reduce the risk of tipping.

Step 2 : Install the rack mount Rail Assembly.

   a. Identify a 2U location in the rack to install the Rail Assembly.

   b. From the rear of the rack, set the rear of the Rail Assembly in the identified 2U location and extend it so that the pins fit into the same U holes on the front of the rack.

Figure 9:   Rail Assembly U Location
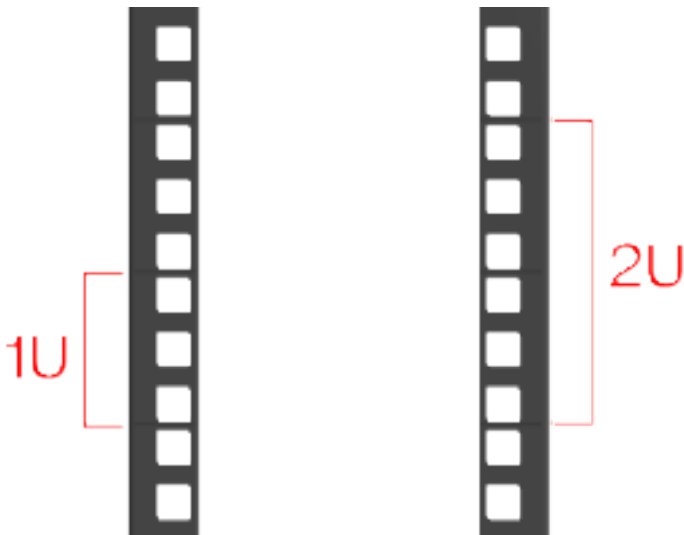
c. Secure the rear of the rack mount Rail Assembly to the rack using the T15 Torx screwdriver and secure the rail mount using the two washers and screws.

Figure 10: Install Rear Rack Mount
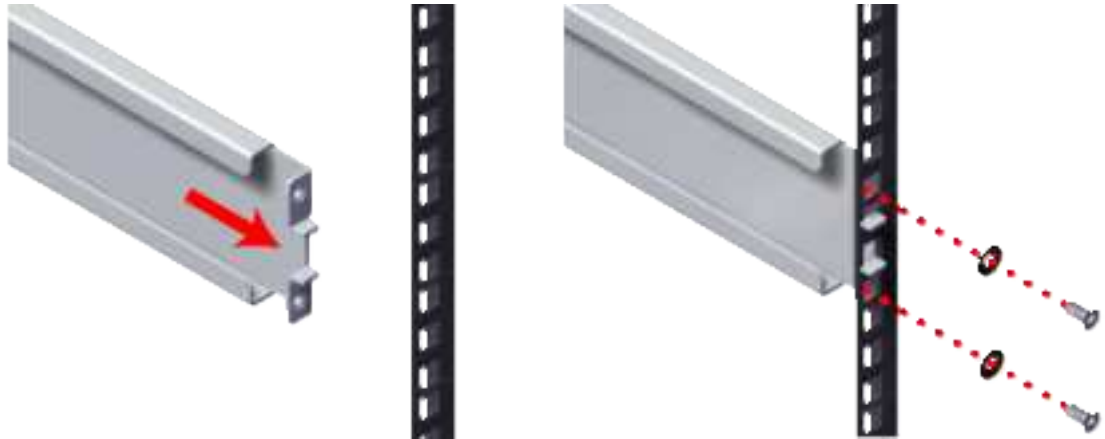
d. From the front of the rack, using the T15 Torx screwdriver, install the two washers and screws that secure the front of the rack mount Rail Assembly.

Figure 11: Install Front Rack Mount
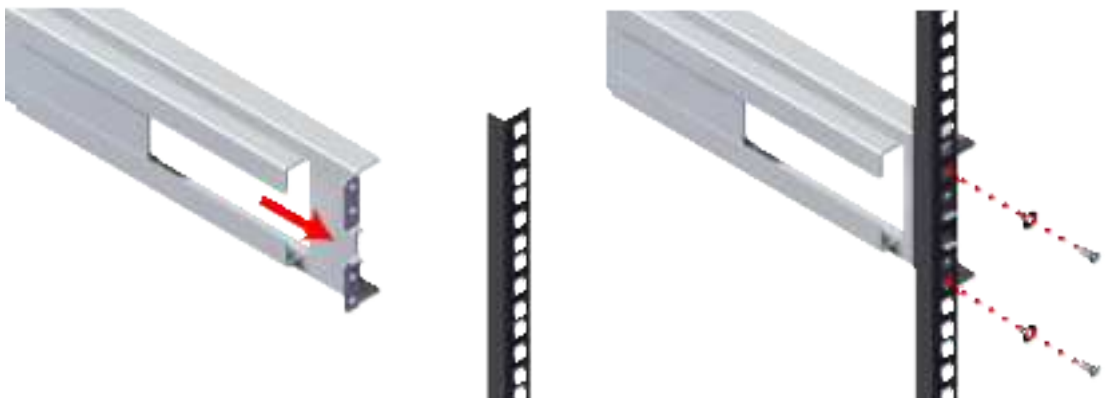
e. It is recommended at this point to use a level to ensure that the rails are installed in the appropriate position in the rack. Check each rail is installed level individually, and then ensure they are installed at the appropriate rack by spanning both rails. It may be necessary to insert the level used at an angle to rest inside the rack shelf space.

Figure 12: Rail Level Check
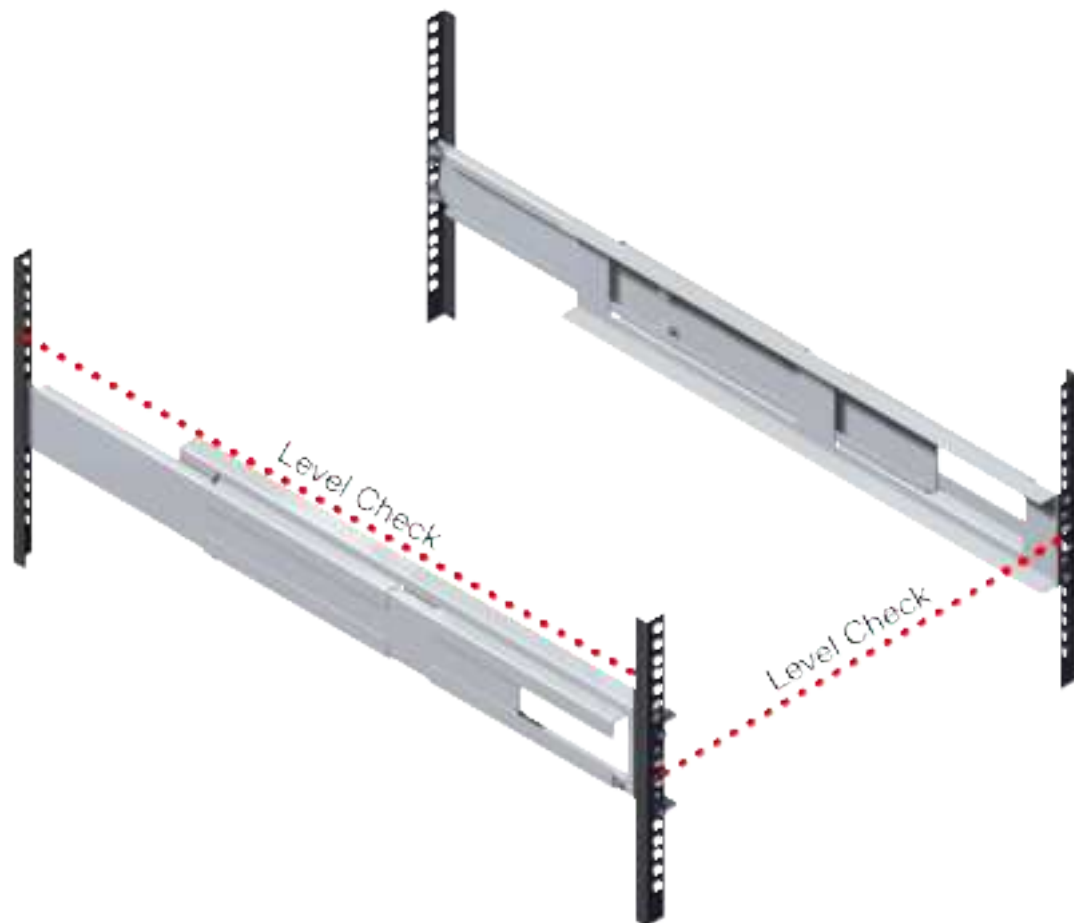
Step 3 : Install the remaining Rail Assembly in the same way the first was installed.

Step 4 : Install the Chassis onto the rack mounted rails.

    a. Carefully slide the Chassis onto the rails until the rack mounts are flush with the mounts on the rails.

Figure 13: Chassis Installation
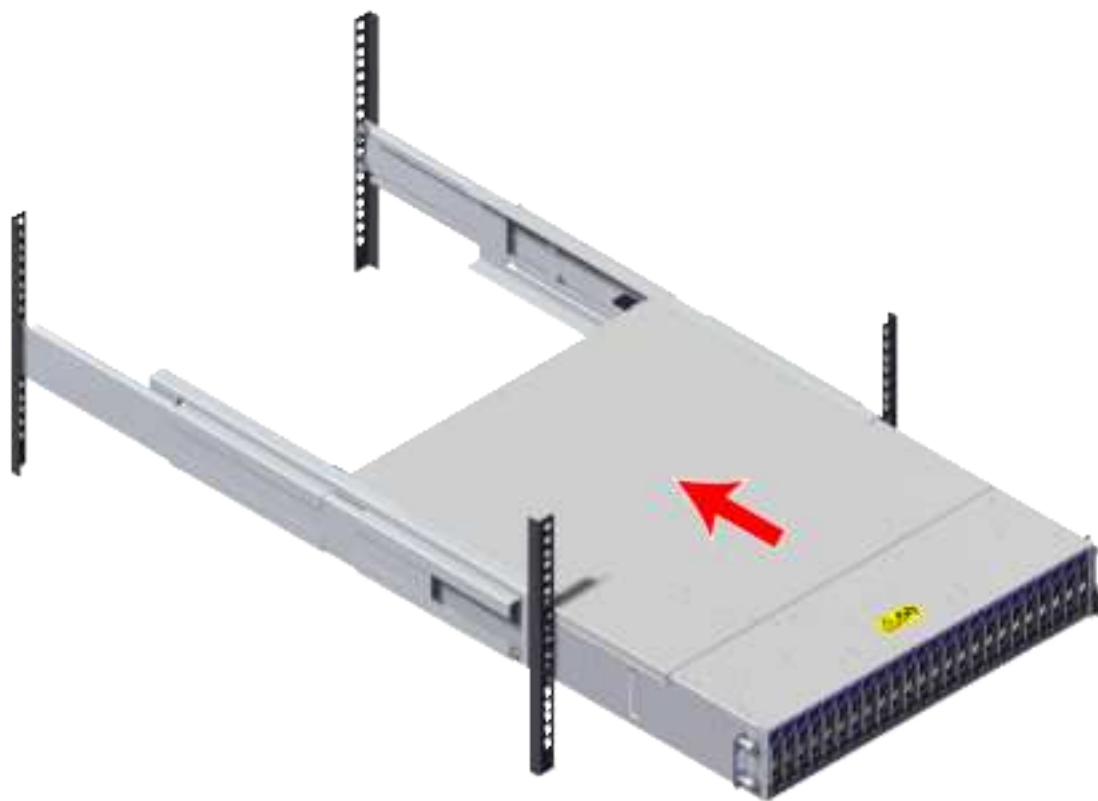
b. Using the T15 Torx screwdriver, tighten the two Torx captive screws to secure the Chassis to the rail. Repeat this step to secure the remaining rack mount to the remaining rail.

Figure 14: Captive Screw Tighten
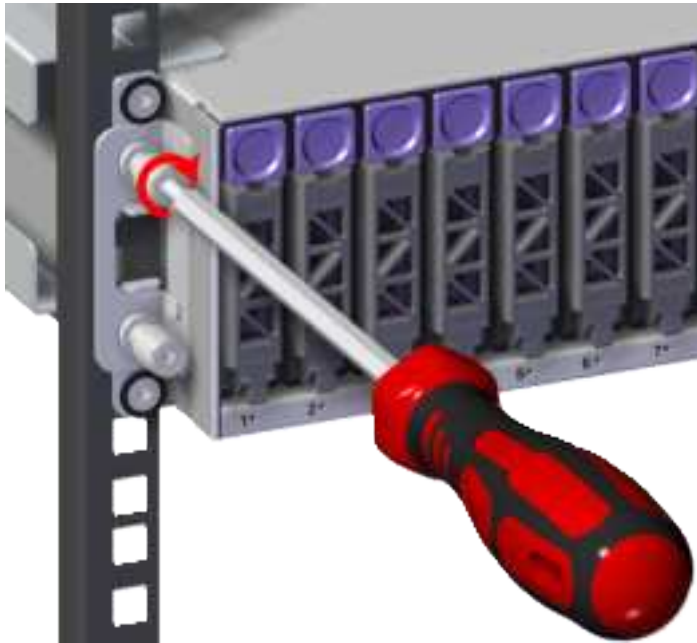
Figure 15: Captive Screw Location

Step 5 : Connect the Ethernet cable into the Ethernet Management port on the IOM.

Figure 16: Connect Ethernet Cable

Step 6 : Repeat the previous step to install the remaining Ethernet cable.

Step 7 : Connect the QSFP28 cable to the IOM to the QSFP the port.

Figure 17: Connect QSFP28 Cable

Step 8 : Repeat the previous step to install the remaining QSFP28 cable(s).

Step 9 : Connect the power cable to the PSU.

    a. Plug the power cable into the PSU power port.

Figure 18: Connect Power Cable

    b. Secure the power cable to the PSU by wrapping the hook and loop strap around the power cable.

Step 10 : Repeat the previous step to install the remaining power cable.

Step 11 : Verify the system has powered on using the System Power LED on the from of the system. The LED should display green.

Figure 19: Enclosure LEDs
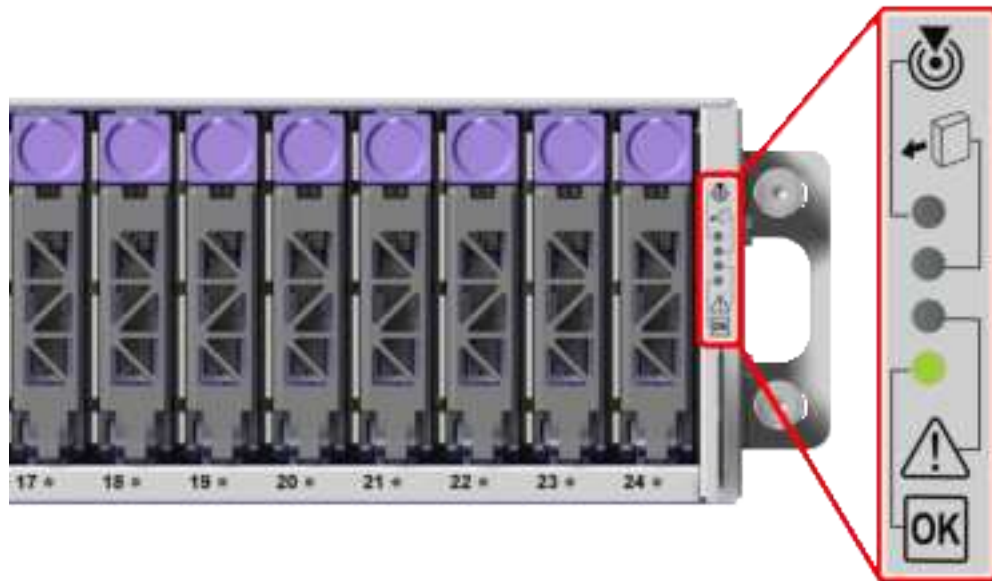
Step 12 : When using SSDs not provided as a part of a Drive Assembly, install SSDs onto a Drive Carrier. Refer to **Drive Installation** *(page 17)*.

Step 13 : Install the Drive Assembly into the enclosure.

    a. Prepare the Drive Assembly for installation by pressing the release button on the front of the Drive Assembly. The release handle will eject outward.

Figure 20: Drive Assembly Release Operation
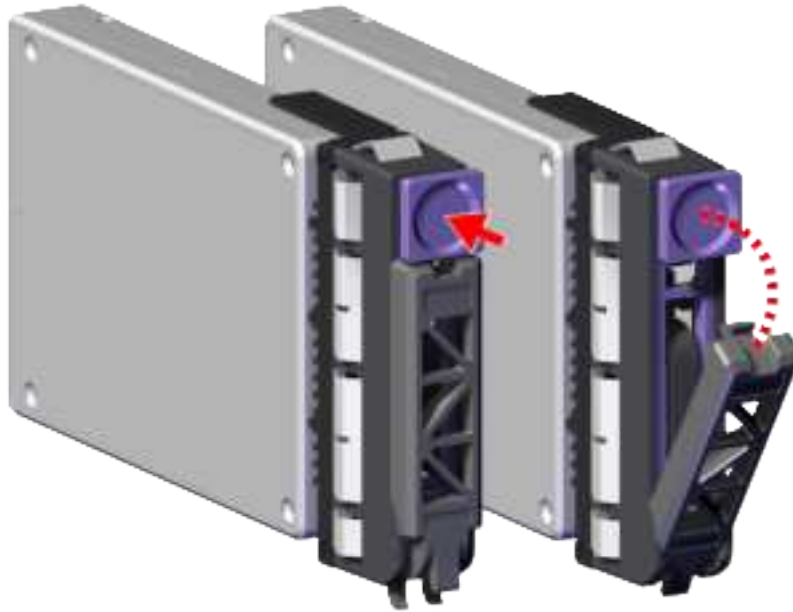
b. From the front of the rack, gently slide the Drive Assembly into the Drive Assembly slot until the release handle lifts up slightly, indicating that it is engaged with the Chassis.

Figure 21: Drive Assembly Latch Engaged
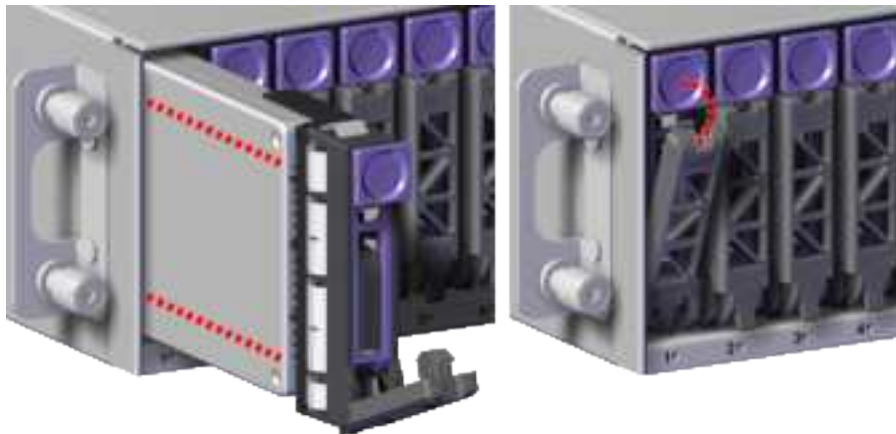
c. Rotate the release handle up and press it into the Drive Assembly to secure it into the slot. When it is fully installed the user will feel the handle snap and lock into place.

Figure 22: Drive Assembly Installation

Result: The OpenFlex™ Data24 4000 Series has now been installed.

1.5.1 Drive Installation

This task supports the installation of an SSD onto a Drive Carrier.

Figure 23: Fully Assembled Drive Carrier Assembly

Note: Use a new Drive Carrier each time you replace a drive.

Replacement Requirements	
Personnel Required	1
Avg. Replacement Time	5 min

Replacement Requirements		
Max Replacement Time		5 min
Tool	# Needed	Required vs. Recommended
N/A		

- ESD Sensitive
- Safe Lift: Under 50 lbs.

Step 1: Hold the Drive Carrier so that you can see the male alignment points on the top, bottom, and side of the drive cradle tabs.

Figure 24: Top and Bottom Male Alignment Points

Figure 25: Side Male Alignment Points

Step 2 :   Locate the female alignment points on the top, bottom, and side of the drive.

Figure 26: Top and Bottom Female Alignment Points

Figure 27: Side Female Alignment Points

Step 3 :   Insert the top alignment point on the carrier into the top alignment point on the drive.

Step 4 :   Gently snap the side alignment point on the carrier into the side alignment point on the drive.
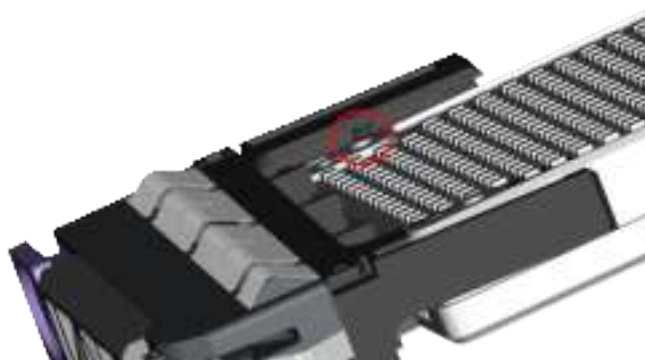
Step 5 :   Repeat steps 5 and 6 on the other side of the drive and carrier.

1.5.2 Finding OOBM Port IP Addresses with DHCP

This section provides instructions for finding OOBM port IP addresses on the OpenFlex Data24 4000 Series using DHCP.

Before you begin:

If the network has been configured with a DHCP server, the enclosure's RJ45 management ports and QSFP28 data ports are assigned IP addresses using DHCP when the enclosure is initially connected to the network.

The enclosure manager configures the enclosure name using the following naming convention:

- **High availability:** ofdata24-42xx-<serial number>-iom<a|b>-mgmt
- **Non-high availability:** ofdata24-41xx-<serial number>-iom<a|b>-mgmt

IOM management and data port naming conventions are:

- **IOM management ports:** <enclosurename>-iom<a|b>
- **IOM data ports:** <enclosurename>-iom<a|b>-rfx<a|b|c>

  ○ Use RFX A for data ports 1 and 4
  ○ Use RFX B for data ports 2 and 5
  ○ Use RFX C for data ports 3 and 6

Step 1: Use the pullout tab on the OpenFlex Data24 4000 Series chassis to find the serial number for the enclosure.

Step 2: Use the pullout tabs on the OpenFlex Data24 4000 Series IOMs to find the IOM MAC addresses.

Step 3: Cross-reference the IOM MAC addresses using a DHCP server to find and record the IP addresses assigned to them.

> **Note:** If desired, make a DHCP reservation for those IPs or set them to static IPs so that the OOBM port IPs do not change.

Step 4: When a DHCP server is unavailable, use the static link-local IP assigned to the OOBM ports. For detailed instructions, refer to Finding OOBM Port IP Addresses with Non-DHCP Servers *(page 22)*.

1.5.3 Finding OOBM Port IP Addresses with Non-DHCP Servers

This section provides instructions for finding OOBM port IP addresses on the OpenFlex Data24 4000 Series without a DHCP server.

Before you begin: Refer to Finding OOBM Port IP Addresses with DHCP *(page 21)* for instructions on finding IP addresses with DHCP.

Without an available DHCP server available on the network, the platform reverts to static link-local addresses in the 169.254.0.0/16 IP range for both data and management ports. The host name adds the .local suffix. Use local access through the RJ45 management port to connect directly to a host or laptop for initial configuration.

> **Note:** The steps below provide results using a Linux server to connect to the enclosure. The steps are the same whether connecting to a high availability (42XX series) or non-high availability (41XX series) enclosure.

The enclosure manager configures the enclosure name using the following naming convention:

- **High availability:** ofdata24-42xx-<serial number>-iom<a|b>-mgmt
- **Non-high availability:** ofdata24-41xx-<serial number>-iom<a|b>-mgmt

IOM management and data port naming conventions are:

- **IOM management ports:** <enclosurename>-iom<a|b>
- **IOM data ports:** <enclosurename>-iom<a|b>-rfx<a|b|c>

  ○ Use RFX A for data ports 1 and 4
  ○ Use RFX B for data ports 2 and 5

- ○ Use RFX C for data ports 3 and 6

Step 1: Plug an ethernet cable from the local server into the OpenFlex Data24 4000 Series IOM management port.

Step 2: Configure the local server's ethernet port to be on the 169.254.0.0/16 network.

Step 3: Print the ethernet interfaces available using `ifconfig -a` or `ip a`.

Step 4: Configure the interface to connect to the OpenFlex Data24 4000 Series IOM management port.

Sample ethernet interface configuration in the etc/sysconfig/network-scripts/ifcfg-<interface> file:

```
BOOTPROTO="static"
IPADDR="169.254.X.X"
NETMASK="255.255.0.0"
DEVICE=<enclosure name>
HWADDR="c4:cb:e1:e1:b4:a1"
ONBOOT=yes
PEERDNS=yes
PEERROUTES=yes
DEFROUTE=yes
```

Step 5: Activate the interface with `ifup`.

```
testhost ~ # ifup <enclosure name>
Connection successfully activated <D-Bus active path: /org/freedesktop/
NetworkManager/ActiveConnection/18
```

Step 6: Use `ifconfig -a` or `ip a` to print the interfaces again to show the 169.254.X.X IP used in the configuration file.

```
testhost ~ # ifconfig <enclosure name>
<enclosure name>: flags=4163>UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
                  inet 10.XXX.XXX.XXX netmask 255.XXX.XXX.X broadcast
 10.XXX.XXX.X
                  inet6 fe80::c6cb:e1ff:fee1:b4a0 prefixlen 64 scopeid
 0x20<link>
                  ether c4:cb:e1:e1:b4:a0 txqueuelen 1000 (Ethernet)
                  RX packets 2821816 bytes 514182108 (490.3 MiB)
                  RX errors 0 dropped 0 overruns 0 frame 0
                  TX packets 470144 bytes 89312796 (85.1 MiB)
                  TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
                  device interrupt 16
<enclosurename>:  flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
                  inet 169.254.X.XX  netmask 255.255.0.0  broadcast
 169.254.255.255
                  ether c4:cb:e1:e1:b4:a1  txqueuelen 1000  (Ethernet)
                  RX packets 113831  bytes 42065780 (40.1 MiB)
                  RX errors 0  dropped 0  overruns 0  frame 0
                  TX packets 24098  bytes 4032533 (3.8 MiB)
                  TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
                  device interrupt 17
```

Step 7: Use NMAP to search for IPs on the 169.254.0.0 subnet making sure to include the CIDR notation.

```
testhost network-scripts # nmap -sn 169.254.0.0/16
```

```
Starting Nmap 7.92 ( https://nmap.org ) at 2025-05-09 13:32 MDT
Nmap scan report for 169.254.0.100
Host is up (0.00031s latency).
MAC Address: 00:0C:CA:0A:18:E6 (Hgst a Western Digital Company)
Nmap scan report for 169.254.X.XXX
Host is up (0.00026s latency).
MAC Address: 00:0C:CA:0A:18:E6 (Hgst a Western Digital Company)
Nmap scan report for 169.254.X.XX
Host is up.
```

Step 8: Connect to the identified IP (169.254.X.XXX in this example) to verify it is the OpenFlex Data24 platform.

```
# wddcs http=169.254.X.XXX show
wddcs v4.3.2.0
Copyright (c) 2019-2025 Western Digital Corporation or its affiliates

Model       : OpenFlex Data24 4240
Serial      : USALPXXXXXSAXXXX
ID          : ofdata24-4240-usalpXXXXXSAXXXX
Name        : ofdata24-4240-usalpXXXXXSAXXXX
Firmware    : 3.0.0
Power state : On
LED         : Off
Slot        : 1
State       : In service
Health      : OK
Details     : None
Capacity    : 368.71 TB

More data is available for the following resource types:
  adapter
  controller
  cooling
  media
  port
  power
  sensor
  clock

Enter "show=<resource>" to get more data
Example: wddcs http=1.2.3.4 show=media
```

1.6 Discovering and Connecting to NVMe Devices on OpenFlex Data24 4000 Series

This procedure will provide information on discovering and connecting to NVMe devices on OpenFlex Data24 4000 Series using the REST protocol over the data port. The IP address of the enclosure may be obtained using OCGUI or cURL. The IOM MAC addresses are available on the pull-out tabs on each of the IOMs at the rear of the system. Obtain the DHCP IP Address from the DHCP server and cross-reference it with the MAC addresses to determine the IP address. Examples where REST commands are required will display cURL commands.

To find the drive NQN value using OCGUI, refer to Obtaining the Drive NQN Value *(page 27)*.

Step 1: Open a terminal and use the adapter's IPv4 or hostname address to discover all nvme devices installed on the fabric.

```
sudo nvme discover -t rdma -a <IP of IOM Data Port>
```

> **Note:** The port defaults to rdma for RoCE, but it can be TCP also. Review the port information to determine protocol being used.

Step 2 : Review the output to locate the subnqn number associated with the device that will be connected. The following example shows two devices, the In-Band management device, as well as the device (SSD) intended for connection.

```
Discovery Log Number of Records 2, Generation counter 0
=====Discovery Log Entry 0======
trtype:  rdma
adrfam:  ipv4
subtype: nvme subsystem
treq:    not specified
portid:  0
trsvcid: 4420
subnqn:  nqn.1992-05.com.wdc.ofdata24-4213-usalp00000aa00a:MI.AC (In-Band
Management Device)
traddr:  192.168.10.51
rdma_prtype: roce-v2
rdma_qptype: connected
rdma_cms:    rdma-cm
rdma_pkey: 0x0000
=====Discovery Log Entry 1======
trtype:  rdma
adrfam:  ipv4
subtype: nvme subsystem
treq:    not specified
portid:  0
trsvcid: 4420
subnqn:  nqn.1992-05.com.wdc.ofdata24-4213-usalp00000aa000a:nvme.1 (subnqn for
 NVMe device)
traddr:  192.168.10.51
rdma_prtype: roce-v2
rdma_qptype: connected
rdma_cms:    rdma-cm
rdma_pkey: 0x0000
```

📄 **Note:** This example calls out the IOM-A and RFX-C with the result AC, bolded above. The example also calls out the device number with the numeral 1 at the end of the string, bolded in the following example: nqn.1992-05.com.wdc.ofdata24-4213-usalp00000aa000a:nvme.**1**. The **1** indicates the device (SSD) system slot number.

Step 3: Connect to the device using the subnqn.

```
sudo nvme connect -t rdma -a <IP of IOM Data Port> -n
 nqn.1992-05.com.wdc.ofdata24-4213-usalp00000aa000a:nvme.1
```

Step 4: Verify the connection using nvme list -v.

```
root:~$ sudo nvme list -v
NVM Express Subsystems

Subsystem        Subsystem-NQN                                       Controllers
------------ --------------------------------------------------
 ----------------
nvme-subsys0 nqn.1992-05.com.wdc.ofdata24-4213-usalp00000aa000a:nvme.1
                               nvme0

NVM Express Controllers

Device   SN                   MN                               FR       TxPort
 Address        Subsystem    Namespaces
-------- -------------------- ------------------------------ -------- ------
 -------------- ------------ -----------------
nvme0    AXXXXXXX             WUSxxxxxxx                       R2109003 rdma
 traddr=192.168.10.51 trsvcid=4420 nvme-subsys0 nvme0n1

NVM Express Namespaces

Device       NSID     Usage                      Format          Controllers
------------ -------- -------------------------- ---------------
 ----------------
nvme0n1      1          3.84  TB /   3.84  TB    512   B +  0 B   nvme0
```

1.7 Obtaining the Drive NQN Value

> (i) **Attention:** Always confirm that the enclosure status is "Healthy" after changing settings to ensure that the system is operating properly.
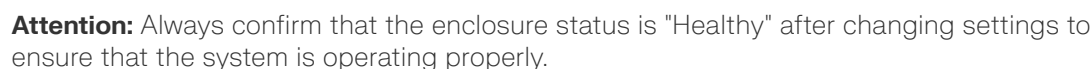
Step 1: Navigate to the storage device. Refer to **Navigating to a Device** *(page 27)*.

Step 2: Click the device's **Media** icon:
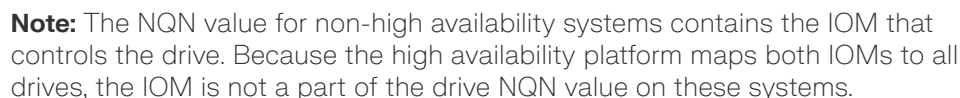
Figure 30: Storage Media Icon

The **Media** information appears:

Figure 31: Storage Media Information

Step 3: Review the **Durable Name** value next to the devices to view the NQN value.

> 📄 **Note:** The NQN value for non-high availability systems contains the IOM that controls the drive. Because the high availability platform maps both IOMs to all drives, the IOM is not a part of the drive NQN value on these systems.

1.7.1 Navigating to a Device

This task provides instructions for using the OCGUI to navigate to a device's dashboard through any other fabric-connected device.

Step 1: Open a browser and enter the IP address or hostname for any fabric-connected device into the **address bar**.
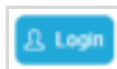
The login page for the device appears:

> **Note:** mDNS has the ability to connect to the system using **http://openflex-data24-4x00-<product_SN>-ioma|b.<domain>** when the corporate DHCP Server IP list may not be available.

Step 2 : Enter a valid username and password, and click the **Login** button:
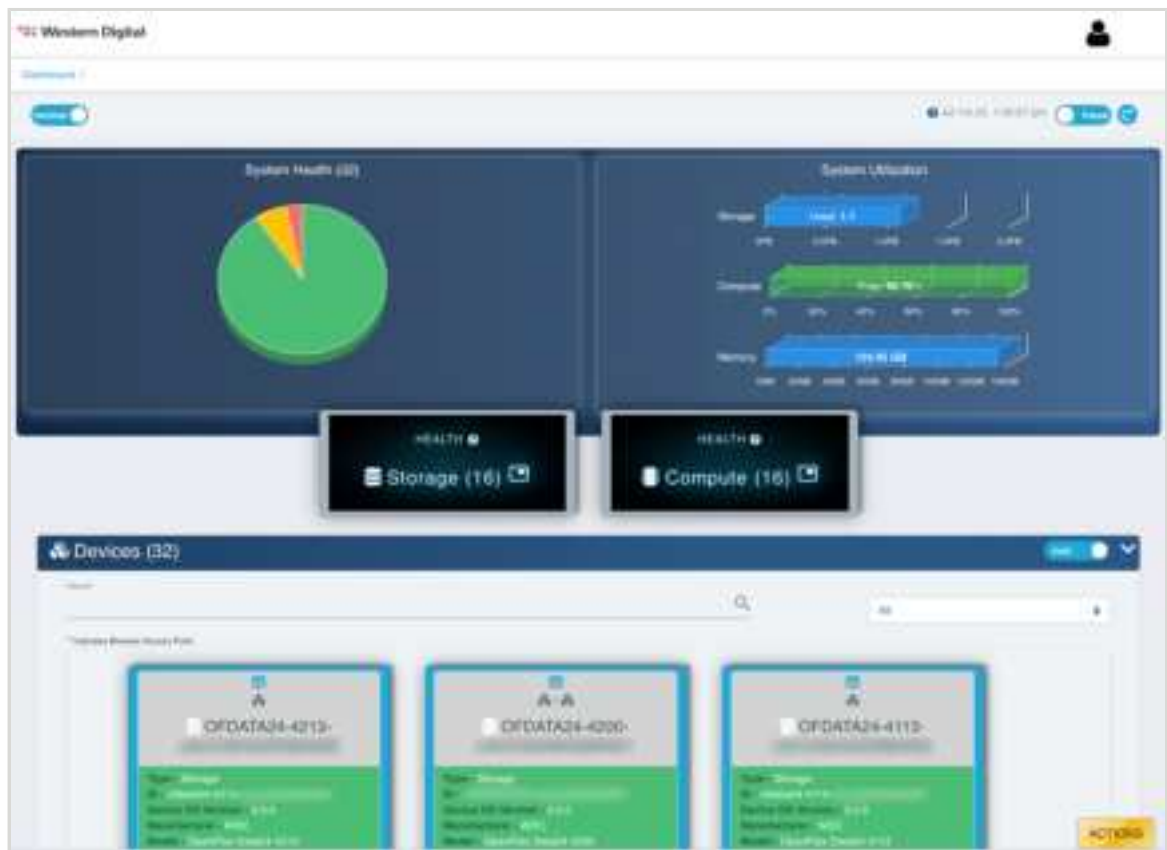

> **Note:** The default username/password is `admin/admin`.

> **Warning:** After initial login, change the default username/password as a security best practice. Refer to Changing the Default Administrator Password *(page 30)* for instructions.

The system dashboard appears. In addition, the **Devices** section provides access to all other fabric-connected devices:
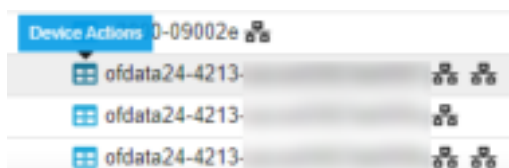
Step 3 : If needed, click the **Devices** banner to expand the list of all connected devices:

Step 4 : From the list, identify the device to which you want to navigate.

Step 5 : Click the **Device Actions** icon:

The **Device Actions** window appears:

Step 6 : Click the **Open in a new tab/window** option to open the device page in a new window.

The device's dashboard appears in a new tab/window.

1.7.2 Changing the Default Administrator Password

This procedure will provide information on changing the default administrator password using OCGUI.

Note: It is highly recommended that this is accomplished as part of the initialization process.

Attention: Always confirm that the enclosure status is "Healthy" after changing settings to ensure that the system is operating properly.

Step 1: Login to the device using the default admin credentials.

Step 2: Navigate to the storage device. Refer to **Navigating to a Device** *(page 27)*.

Step 3: Click the storage device's **Accounts** icon:

The **Accounts** information appears:

Step 4: Click the pencil icon next to the **User Id**.

The **Update Account** information appears in a new window:

Step 5 : Type the new Administrator password into the **Password** and **Confirmation** fields.

Note: The passwords need to match in order to continue.

Step 6 : Click the **Update** button.

The administrator password updates.

Safety

In This Chapter:

2.1 Electrostatic Discharge

⚠️ **CAUTION**

Electrostatic discharge can harm delicate components inside Western Digital products.

Electrostatic discharge (ESD) is a discharge of stored static electricity that can damage equipment and impair electrical circuitry. It occurs when electronic components are improperly handled and can result in complete or intermittent failures.

Wear an ESD wrist strap for installation, service and maintenance to prevent damage to components in the product. Ensure the antistatic wrist strap is attached to a chassis ground (any unpainted metal surface). If possible, keep one hand on the frame when you install or remove an ESD-sensitive part.

Before moving ESD-sensitive parts, place them in ESD static-protective bags until you are ready to install the part.

2.2 Optimizing Location

- Failure to recognize the importance of optimally locating your product, and failure to protect against electrostatic discharge (ESD) when handling your product, can result in lowered system performance or system failure.
- Do not position the unit in an environment with extreme high temperatures or extreme low temperatures. Be aware of the proximity of the unit to heaters, radiators, and air conditioners.
- Position the unit so that there is adequate space around it for proper cooling and ventilation.
- Keep the unit away from direct strong magnetic fields, excessive dust, and electronic/electrical equipment that generate electrical noise.

2.3 Power Connections

Be aware of the ampere limit on any power supply or extension cables being used. The total ampere rating being pulled on a circuit by all devices combined should not exceed 80% of the maximum limit for the circuit.

CAUTION The power outlet must be easily accessible and close to the unit.

⚠️ Always use properly grounded, unmodified electrical outlets and cables. Ensure all outlets and cables are rated to supply the proper voltage and current.

When power cycling the unit, wait 10 seconds before re-applying power. Failure to do so may cause the enclosure to boot up in an inaccessible state. If this is encountered, remove power, wait 10 seconds, and then reapply power.

2.4 Power Cords

⚠️ Use only tested and approved power cords to connect to properly grounded power outlets or insulated sockets of the rack's internal power supply.

If an AC power cord was not provided with your product, purchase one that is approved for use in your country or region.

CAUTION To avoid electrical shock or fire, check the power cord(s) that will be used with the product as follows:

- The power cord must have an electrical rating that is greater than that of the electrical current rating marked on the product.
- Do not attempt to modify or use the AC power cord(s) if they are not the exact type required to fit into the grounded electrical outlets.
- The power supply cord(s) must be plugged into socket-outlet(s) that is / are provided with a suitable earth ground.
- The power supply cord(s) is / are the main disconnect device to AC power. The socket outlet(s) must be near the equipment and readily accessible for disconnection.

2.5 Rack-Mountable Systems

CAUTION: **Always install rack rails and storage enclosure according to OpenFlex™ Data24 4000 Series product documentation. Follow all cautions, warnings, labels, and instructions provided within the rackmount instructions.**

Reliable grounding of rack-mounted equipment should be maintained.

If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

Observe the maximum rated ambient temperature, which is specified in the product documentation.

For safe operation of the equipment, installation of the equipment in a rack should be such that the amount of air flow is not impeded so that the safe operation of the equipment is not compromised.

2.6 Safety and Service

All maintenance and service actions appropriate to the end-users are described in the product documentation. All other servicing should be referred to a Western Digital-authorized service technician.

To avoid shock hazard, turn off power to the unit by unplugging both power cords before servicing the unit. Use extreme caution around the chassis because potentially harmful voltages are present.

When replacing a hot-plug power supply, unplug the power cord to the power supply being replaced before removing it from the OpenFlex™ Data24 4000 Series .

The power supply in this product contains no user-serviceable parts. Do not open the power supply. Hazardous voltage, current and energy levels are present inside the power supply. Return to manufacturer for servicing.

⚠️ ⚠️ 🔧 Use caution when accessing part of the product that are labeled as potential shock hazards, hazardous access to moving parts such as fan blades.

2.7 Safety Warnings and Cautions

To avoid personal injury or property damage, before you begin installing the product, read, observe, and adhere to all of the following safety instructions and information. The following safety symbols may be used throughout the documentation and may be marked on the product and/or the product packaging.

CAUTION Indicates the presence of a hazard that may cause minor personal injury or property damage if the CAUTION is ignored.

WARNING Indicates the presence of a hazard that may result in serious personal injury if the WARNING is ignored.

⚠️ Indicates potential hazard if indicated information is ignored.

⚠️ Indicates shock hazards that result in serious injury or death if safety instructions are not followed.

🔧 Indicates do not touch fan blades, may result in injury.

🔌 Indicates disconnect all power sources before servicing.