Installation Guide

OpenFlex™ Data24
Regulatory Model: DCS0010
1ET2361
Version 1.0
November 2020

Western Digital.

Table of Contents

Revision History....ii
Notices....iii
Points of Contact....iv
Chapter 1. Installation....1
Installation Equipment Requirements....2
Installation Safety....2
Before You Begin....4
How to Report Damage....4
Unpacking the OpenFlex Data24....7
Installation Procedure....7
Discovering and Connecting to NVMe™ Devices on OpenFlex Data24....14
Chapter 2. Safety....19
Electrostatic Discharge....20
Optimizing Location....20
Power Connections....20
Power Cords....20
Rackmountable Systems....21
Restricted Access Location....21
Safety and Service....21
Safety Warnings and Cautions....22

Revision History

Date	Revision	Comment
November 2020	1.0	Initial Release

Notices

Western Digital Technologies, Inc. or its affiliates' (collectively "Western Digital") general policy does not recommend the use of its products in life support applications wherein a failure or malfunction of the product may directly threaten life or injury. Per Western Digital Terms and Conditions of Sale, the user of Western Digital products in life support applications assumes all risk of such use and indemnifies Western Digital against all damages.

This document is for information use only and is subject to change without prior notice. Western Digital assumes no responsibility for any errors that may appear in this document, nor for incidental or consequential damages resulting from the furnishing, performance or use of this material.

Absent a written agreement signed by Western Digital or its authorized representative to the contrary, Western Digital explicitly disclaims any express and implied warranties and indemnities of any kind that may, or could, be associated with this document and related material, and any user of this document or related material agrees to such disclaimer as a precondition to receipt and usage hereof.

Each user of this document or any product referred to herein expressly waives all guaranties and warranties of any kind associated with this document any related materials or such product, whether expressed or implied, including without limitation, any implied warranty of merchantability or fitness for a particular purpose or non-infringement. Each user of this document or any product referred to herein also expressly agrees Western Digital shall not be liable for any incidental, punitive, indirect, special, or consequential damages, including without limitation physical injury or death, property damage, lost data, loss of profits or costs of procurement of substitute goods, technology, or services, arising out of or related to this document, any related materials or any product referred to herein, regardless of whether such damages are based on tort, warranty, contract, or any other legal theory, even if advised of the possibility of such damages.

This document and its contents, including diagrams, schematics, methodology, work product, and intellectual property rights described in, associated with, or implied by this document, are the sole and exclusive property of Western Digital. No intellectual property license, express or implied, is granted by Western Digital associated with the document recipient's receipt, access and/or use of this document or the products referred to herein; Western Digital retains all rights hereto.

Western Digital, the Western Digital logo, and OpenFlex are registered trademarks or trademarks of Western Digital Corporation or its affiliates in the US and/or other countries. Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries. The NVMe and NVMe-oF word marks are trademarks of NVM Express, Inc. All other marks are the property of their respective owners. Product specifications subject to change without notice. Pictures shown may vary from actual products. Not all products are available in all regions of the world.

Western Digital
5601 Great Oaks Parkway
San Jose, CA 95119

Points of Contact

For further assistance with a Western Digital product, contact Western Digital Datacenter Platforms technical support. Please be prepared to provide the following information: part number (P/N), serial number (S/N), product name and/or model number, and a brief description of the issue.

Email:
support@wdc.com

Website:
https://portal.wdc.com/Support/s/

UK Import Representation Contact

Western Digital UK Limited Hamilton House, Regent Park, Kingston Road Leatherhead, Surrey KT22 7PL, GB, United Kingdom

Telephone: +44 1372 366000

Installation

This document provides information, requirements, and procedures necessary to install and complete the initial bringup of an OpenFlex Data24storage platform.

In This Chapter:

- Installation Equipment Requirements..... 2
- Installation Safety.....2
- Before You Begin.....4
- Unpacking the OpenFlex Data24.....7
- Installation Procedure.....7
- Discovering and Connecting to NVMe™ Devices on OpenFlex Data24.....14

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 1: Included Equipment and Components

Category	Item	# Included
Components	Chassis w/ Power Supply Unit (PSU)s, System Fans, and pre-installed Rack Ears	1
	Rails 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	M5 x 10mm T15 Torx Flat Head screws w/ washers	6
Cables	3m, C13 - C14 Power Cables	2

Table 2: Additional Equipment Needed

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

Table 3: Torque Specifications for Screws

Screw Type	Torque Value
M5 x 12mm T15 Torx screws w/ washers	3.38-3.61 Nm / 30-32 in-lbf
M5 x 10mm T15 Torx screws	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 platform. This section outlines what to consider before performing an installation.

Protect Yourself and Others

Before installing an OpenFlex Data24, 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 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 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 happens in two basic phases, which are described in the following procedures:

1. Unpacking the OpenFlex Data24 *(page 7)*
2. Installation Procedure *(page 7)*

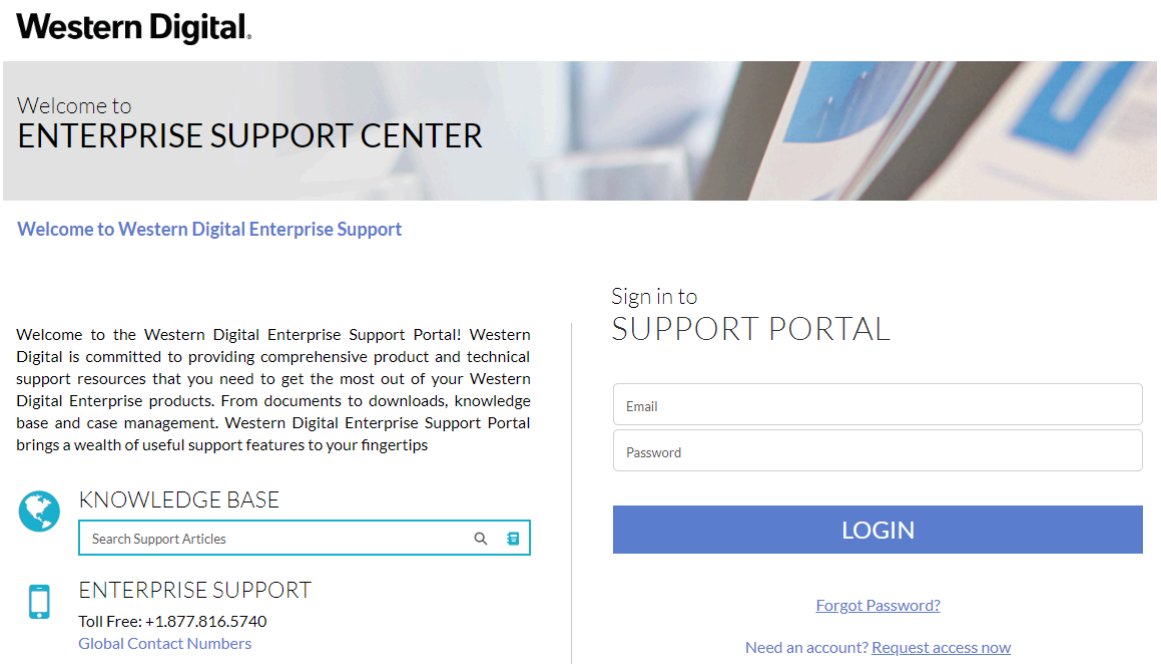
1.3.1 How to Report Damage

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.

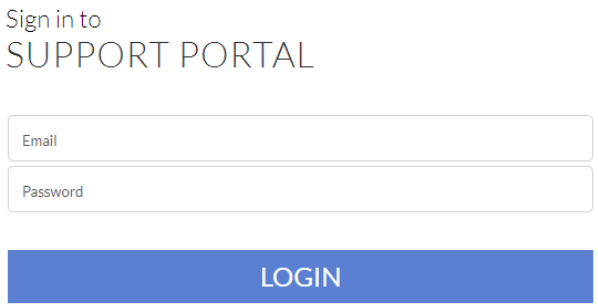
Step 1: Take two digital photos of the damaged packaging or component, one closeup shot showing the damage in detail and one further out so the support engineers working the case can see where the damage occurred.

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

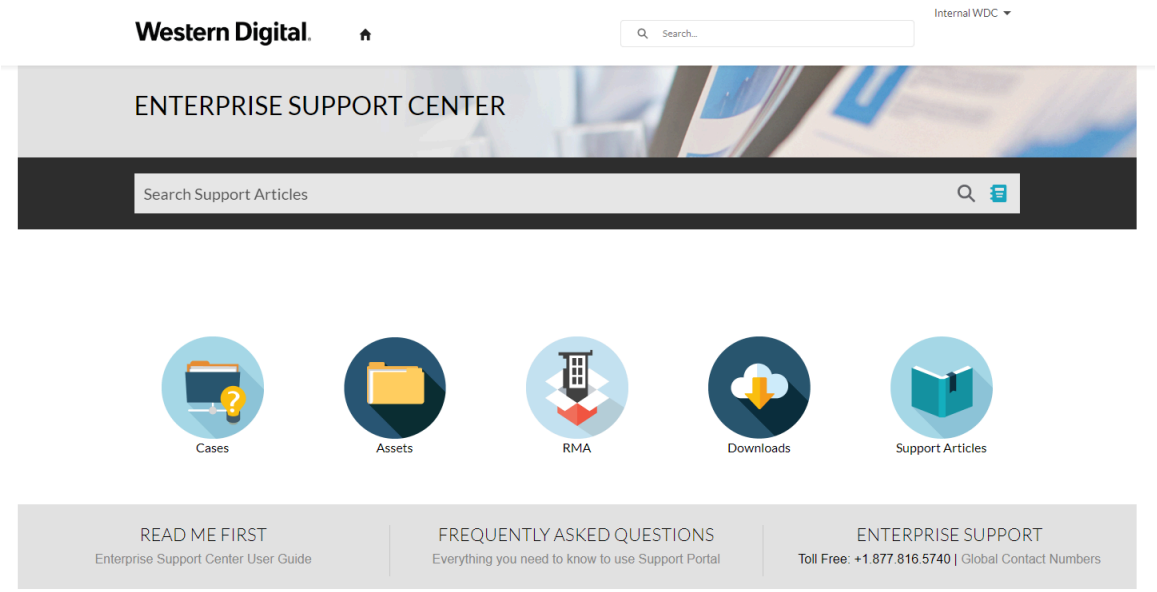
The Western Digital **Enterprise Support Center** page will appear:



Step 3: Log in to your Support Portal account using an email address and password:

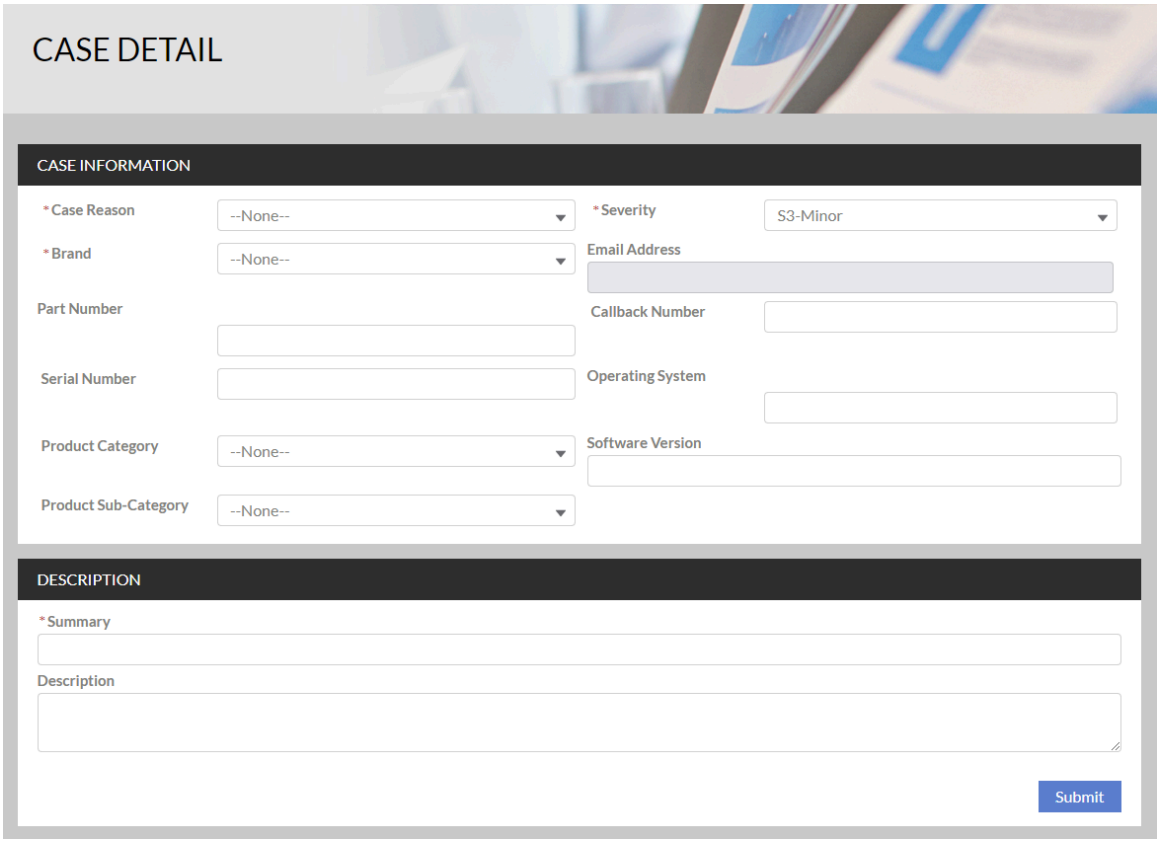


The Western Digital **Enterprise Support Center** page will appear, providing various support-related options:



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

The **Case Detail** page will appear:

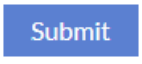


Step 5: At a minimum, select a **Case Reason**, **Brand**, and **Severity** from the available drop-down menus, and provide a brief explanation of the issue in the **Summary** field; these fields are required.

Step 6: 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 Enterprise Support Center User Guide, available through a the link on the **Enterprise Support Center** page:

Step 7: Click the **Submit** button:



1.4 Unpacking the OpenFlex Data24

The OpenFlex Data24 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 and a bag of accessories including screws 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.

Figure 5: Packaging Diagram

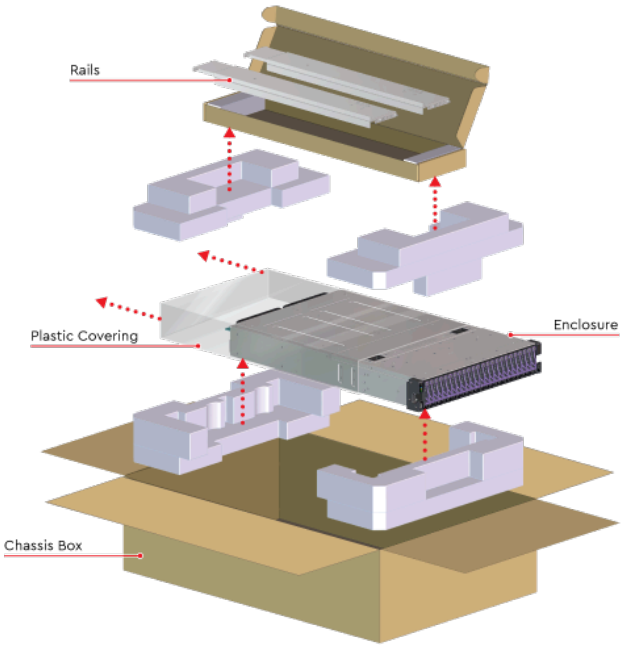


Table 4: Packaging Contents

Category		
Components (Installed)	Drive Assemblies	24
	PSUs	2
	IOMs	2
	Fan Modules	5
Components (Included)	Rail Kit	1 (2 pc)
	Power Cables	2
Screws and Washers	M5 x 12mm T15 Torx	6
	Sheet Metal Washers	6

1.5 Installation Procedure

Step 1: Install the rails into the rack:

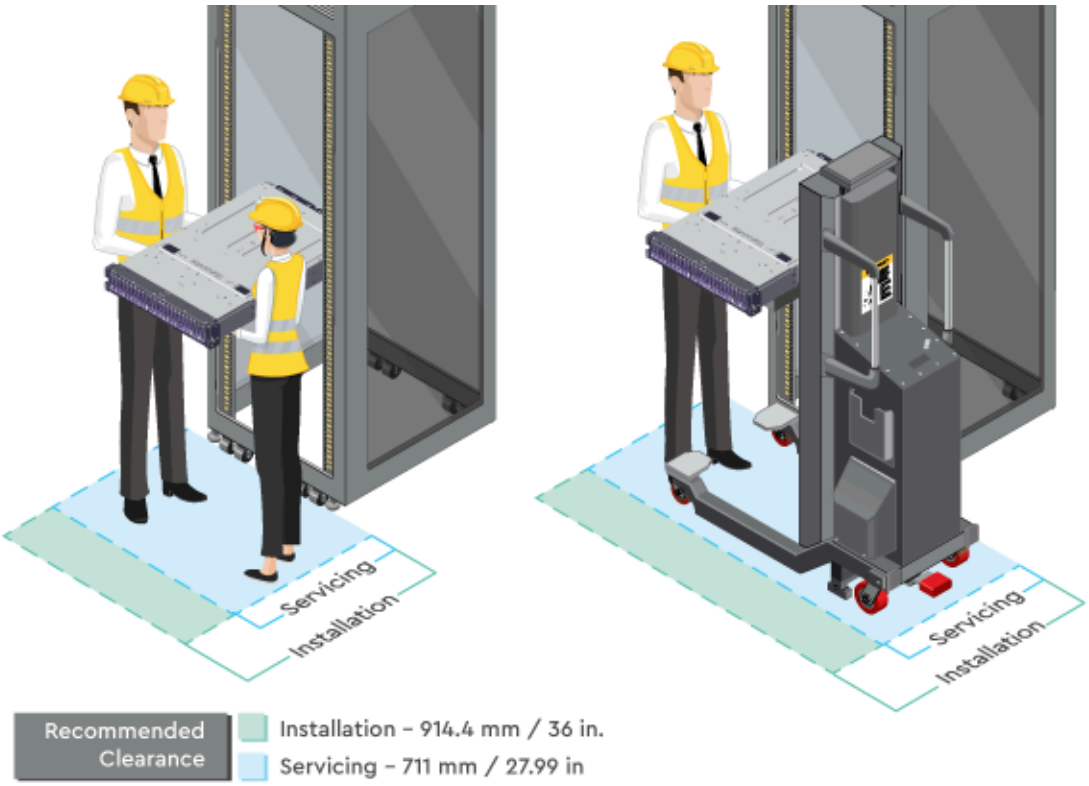
Note: A T15 torx screwdriver is required to perform the installation procedure.

Attention: The rack-mounted rail system that comes with the OpenFlex Data24 uses a spring tensioning mechanism that allows the rails to be soft-installed without tools. However, the spring is only strong enough to hold the rails in place, and all T15 Torx screws must be installed for safe mounting. Never install the OpenFlex Data24 in a set of rails that has not been secured with these screws.

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.

a. 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 700 mm – 850 mm / 28.26 in. – 33.46 in., and 2 rack units (U) of available space. 2U of space is about 3.5 in./ 890 mm from bottom to top as shown in the following image:

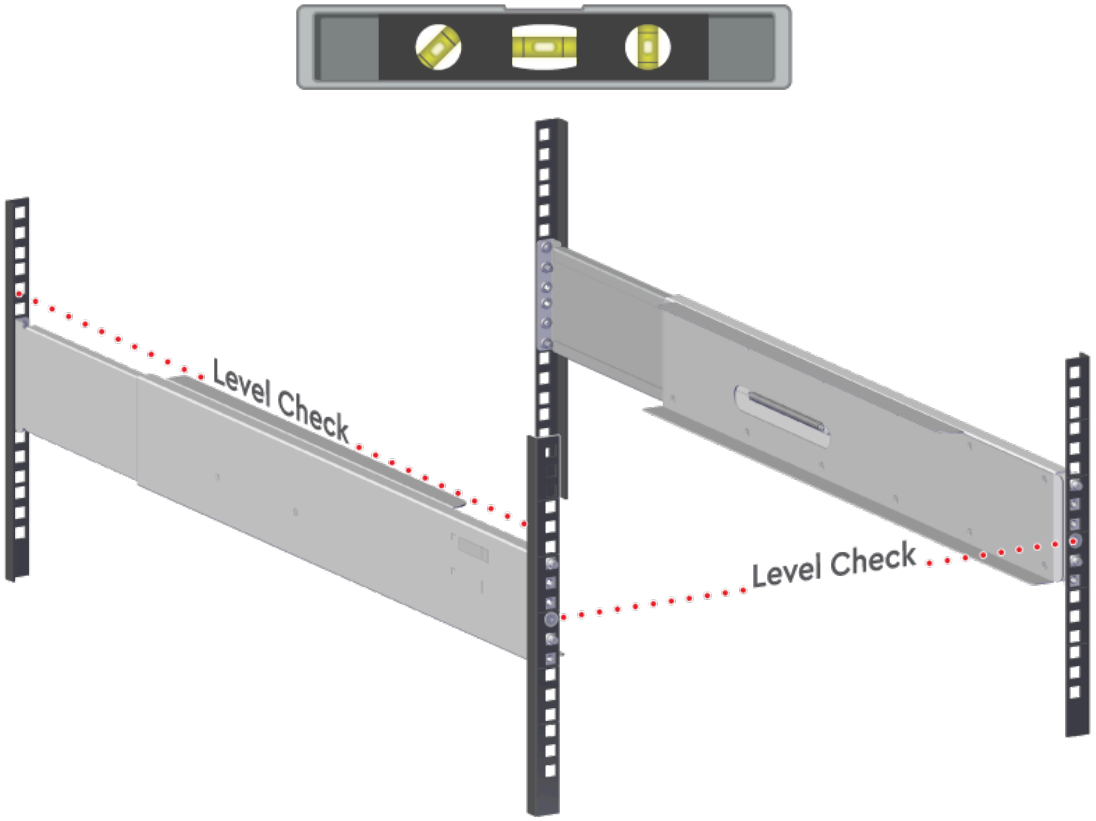
Figure 6: Enclosure Installation Space



b. From the front of the rack, insert the front pins of the rail into the front vertical rack rail. Then slide (compress) the spring-loaded rail until the rear pins line up with the rear vertical rack rail. Ensure that the rail is installed in the bottom portion of the 2U space.

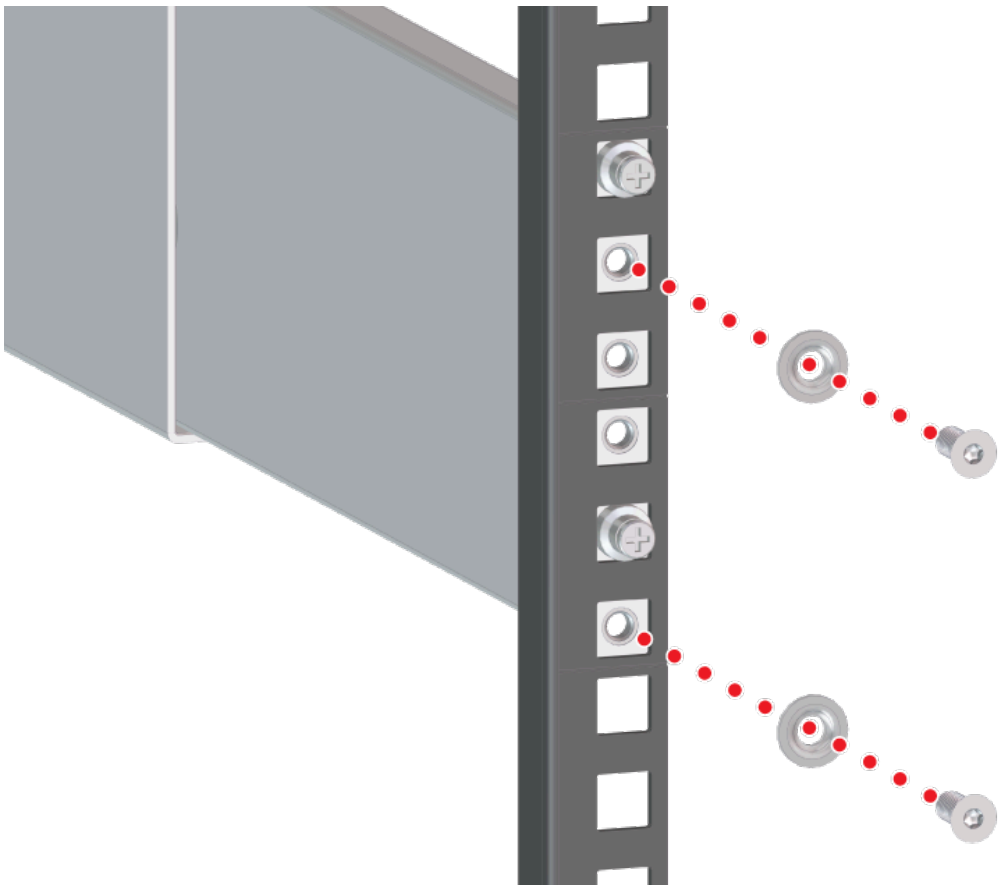
c. It is recommended at this point to use a level to ensure that the rails are installed in the appropriate position in the rack. Check each rail is installed level individually, and then ensure they are installed at the appropriate rack by spanning both rails. It may be necessary to insert the level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

Figure 7: RailLevelCheck



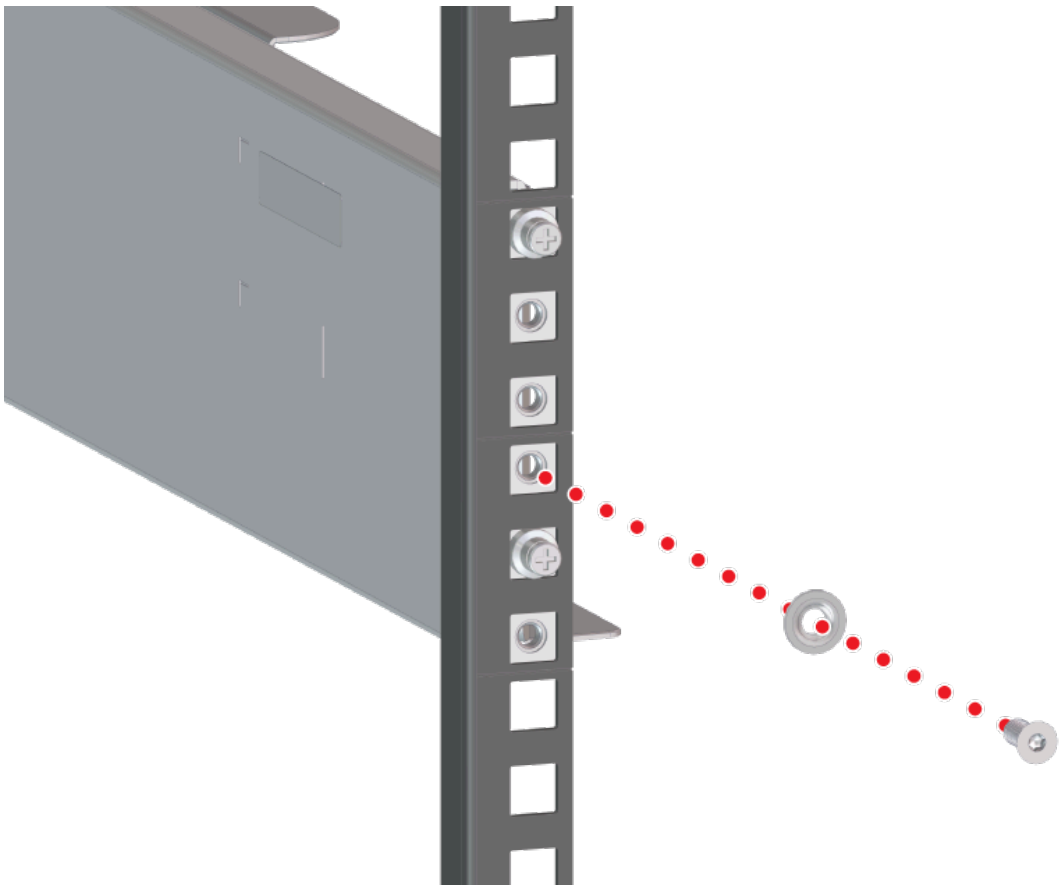
d. Secure the rear of the rack mount Rails to the rack using the T15 Torx screwdriver, install the two M5 Torx screws that secure the rear of the rack mount Rails to the rack.

Figure 8: Install Rear Rack Mount



e. From the front of the rack, using the T15 Torx screwdriver, install the M5 Torx screws that secure the front of the rack mount Rails and bracket to the rack.

Figure 9: Install Front Rack Mount

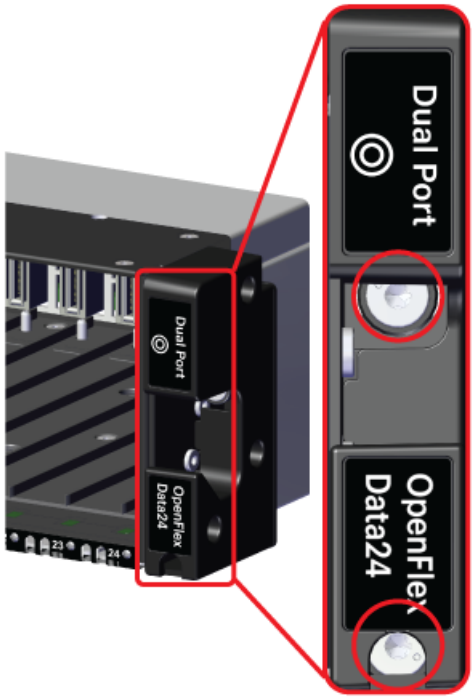


Step 2 : Install the chassis into the rack rails using a two person lift approach or lift equipment.

a. Perform a two person lift or follow the appropriate lift instructions of the usage instructions and safety guidelines of your lift equipment to safely install the enclosure into the rack rails. OpenFlex Data24 .

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.

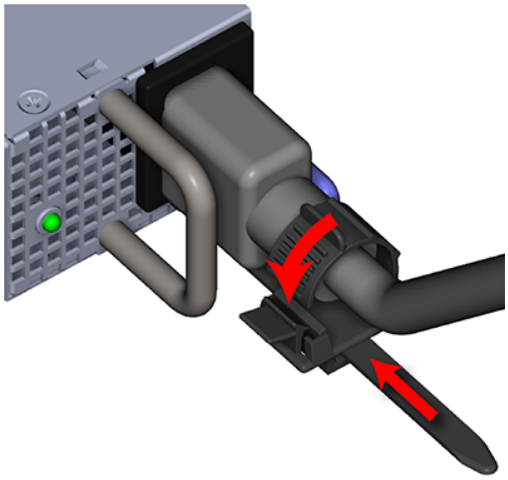
Figure 10: Captive Screws



Step 3: Connect the power and data cables to the enclosure.

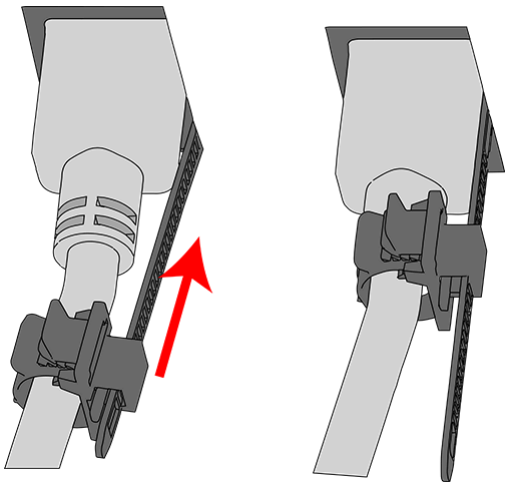
a. Loop the PSU's retention clip around the power cable and pinch it until the clip catches and locks in place.

Figure 11: Locking the Retention Clip



b. Slide the retention clip forward until it stops near the cable connector. Doing this will ensure that the retention clip functions properly in the event the cable is accidentally pulled.

Figure 12: Sliding the Retention Clip Forward



c. Connect the Ethernet Cable into the Ethernet Management port.

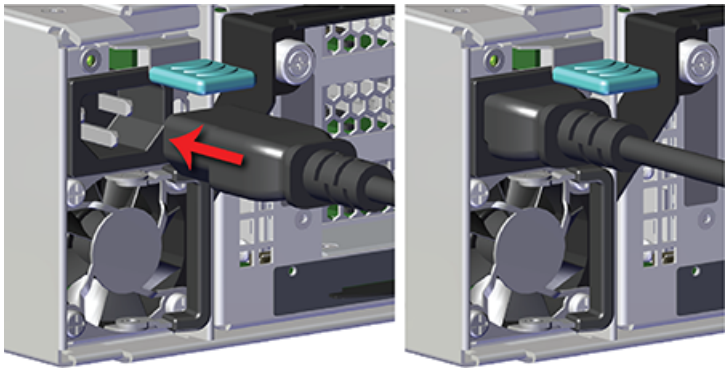
Figure 13: Connecting RJ45 Ethernet Cable to Management Port

d. Connect the QSFP28 cables into all of the IOM ports.

Figure 14: Connect QSFP28 Cables

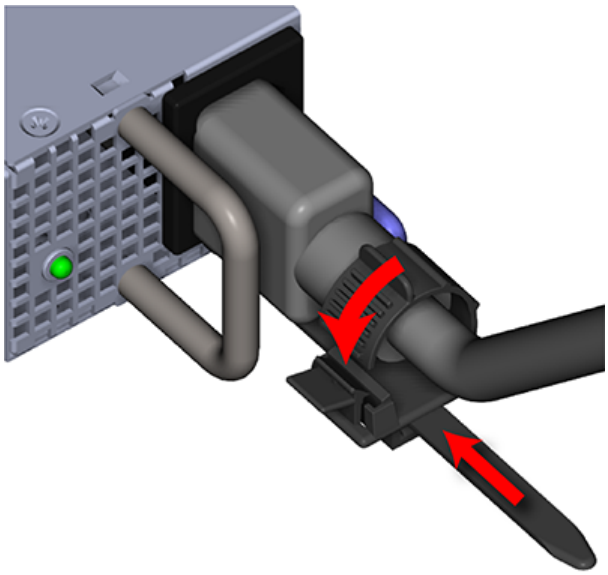
e. Move to the rear of the rack and connect the power cables into each of the two Power Supply Unit (PSU) power connectors.

Figure 15: Connect Power Cables



f. Wrap the power cable in the cable retention clip and cinch it so it securely holds the power cable in place.

Figure 16: Cinching Retention Strap (Generic PSU Shown)



1.6 Discovering and Connecting to NVMe™ Devices on OpenFlex Data24

This process assumes the user knows the IP address of the IOM of the enclosure. The IOM MAC address is available on the pull-out tab at the front of the enclosure and can be used to determine the IP address. Examples where REST commands are required will display cURL commands.

Step 1: **Optional.** Utilize this step in cases where the network may not detect the IP addresses of the adapters that will be connected.

a. To determine the Storage Device ID, issue a GET to `/Query/` to review a list of devices installed in the target enclosure.

```
curl -u username:password http://ip.of.target.iom:80/Query/
```

b. Review the data returned to find the device ID of the target device. See the highlighted example below.

```
{
    "Self": "http://10.20.30.40:80/Query/",
    "SystemQuery": "http://10.20.30.40:80/System/Query/",
    "InformationStructure": {
        "Self": "http://10.20.30.40:80/Query/InformationStructure/",
        "AuthenticationType": {
            "ID": 0,
            "Name": "Basic"
        },
        "HTTPPort": 80,
        "HTTPSPort": 443,
        "LogLevel": "debug",
        "MaximumThreads": 5,
        "Name": "OpenFlex API",
        "OwningOrganization": "WDC",
        "Status": "Released",
        "StructureDescription": "REST-based API for Device Management. Use
 HTTP OPTIONS with header
                                 {\"Documentation\": \"Schema\"} to get
 resource schema information based on URI.
                                 Use HTTP OPTIONS with header
 {\"Documentation\": \"Info\"} to get general information
                                 based on URI. ",
        "URI": "/Query/",
        "TimeoutMultiplier": 1,
        "Version": "1.2.0-301"
    },
    "Devices": {
        "Self": "http://10.20.30.40:80/Devices/",
        "Members": [
            {
                "Self": "http://10.20.30.40:80/Storage/Devices/openflex-
data24-usalp00000aa000a/",
                "SystemType": {
                    "ID": 2,
                    "Name": "Storage"
                },
                "Name": "openflex-data24-usalp00000aa000a",
                "ID": "openflex-data24-usalp00000aa000a",
                "OperatingSystem": {
                    "Self": "http://10.20.30.40:80/Storage/Devices/
openflex-data24-usalp00000aa000a/OperatingSystem/",
                    "Name": "Vendor Firmware",
                    "OSType": {
                        "ID": 59,
                                                    Truncated Example
```

c. Determine the Adapters in the system using the Storage Device. Send a GET to the device ID gathered in the previous step.

```
curl -u username:password http://ip.of.target.iom:80/Storage/Devices/
openflex-data24-usalp00000aa000a/Adapters/
```

d. Review the output to locate the IP of the appropriate port.


```
{
    "Self": "http://10.20.30.40:80/Storage/Devices/openflex-data24-
usalp00000aa000a/Adapters/",
    "Members": [
        {
            "Self": "http://10.20.30.40:80/Storage/Devices/openflex-
data24-usalp00000aa000a/Adapters/1/",
            "ID": "1",
            "Name": "IOM-A-AIC-A",
            "Status": {
                "State": {
                    "ID": 16,
                    "Name": "In service"
                },
                "Health": [
                    {
                        "ID": 5,
                        "Name": "OK"
                    }
                ]
            },
            "HostName": "openflex-data24-usalp00000aa000a-iom-a-aic-a",
            "Ports": "http://10.20.30.40:80/Storage/Devices/openflex-
data24-usalp00000aa000a/Ports/?adapterid=1"
        },
                                                    Truncated Example
```


e. Determine the IP address of the adapter that is attached to your host using the ports link. This will be the IP that is used to perform an `nvme discover` to find drives connected on the fabric. Send a GET to the Ports object associated with the adapter.

```
curl -u username:password http://10.20.30.40:80/Storage/Devices/openflex-
data24-usalp00000aa000a/Ports/?adapterid=1
```

f. Review the returned data to fine the IP of the proper port.


```
{
    "Self": "http://10.20.30.40:80/Storage/Devices/openflex-data24-
usalp00000aa000a/Ports/",
    "Members": [
        {
            "Self": "http://10.20.30.40:80/Storage/Devices/openflex-
data24-usalp00000aa000a/Ports/70_b3_d5_76_8a_be_192_168_10_51_24/",
            "ID": "70_b3_d5_76_8a_be_192_168_10_51_24",
            "Status": {
                "State": {
                    "ID": 16,
                    "Name": "In service"
                },
                "Health": [
                    {
                        "ID": 5,
                        "Name": "OK"
                    }
                ]
            },
```

```
            "AddressOrigin": {
                "ID": 65536,
                "Name": "DHCPv4"
            },
            "IPv4Address": "192.168.10.51/24",
            "IPv4Gateway": "192.168.10.1",
            "MACAddress": "70:b3:d5:76:8a:be",
            "NetworkType": {
                "ID": 8,
                "Name": "IPv4 Network"
            },
            "MTUBytes": 5000,
            "Adapters": "http://10.20.30.40:80/Storage/
Devices/openflex-data24-usalp00000aa000a/Adapters/?
portid=70_b3_d5_76_8a_be_192_168_10_51_24"
        }
    ]
}
```

Step 2: Open a terminal and use the adapter's IPv4 address to discover all nvme devices installed on the fabric.

```
sudo nvme discover -t rdma -a 192.168.10.51
```

Step 3: 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 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.openflex-data24-usalp00000bb000b:MI.AA (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.openflex-data24-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
```

Step 4: Connect to the device using the subnqn.

```
sudo nvme connect -t rdma -a 192.168.10.51 -n nqn.1992-05.com.wdc.openflex-
data24-usalp00000aa000a:nvme.1
```

Step 5: 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.openflex-data24-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
```

Safety

In This Chapter:

- Electrostatic Discharge..... 20
- Optimizing Location..... 20
- Power Connections.....20
- Power Cords..... 20
- Rackmountable Systems..... 21
- Restricted Access Location..... 21
- Safety and Service.....21
- Safety Warnings and Cautions.....22

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 that has 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. Consult the product documentation for spacing information.

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 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.

This unit has more than one power supply connection; both power cords must be removed from the power supplies to completely remove power from the unit. There is no switch or other disconnect device.

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 Rackmountable Systems

CAUTION: **Always install rack rails and storage enclosure according to OpenFlex Data24 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 Restricted Access Location

The OpenFlex Data24 are intended for installation in a server room or computer room where at least one of the following conditions apply:

- access can only be gained by **skilled** or **service persons** or by **instructed persons** who have been instructed about the restrictions applied to the location and about any precautions that shall be taken and/or
- access is through the use of a **tool** or lock and key, or other means of security, and is controlled by the authority responsible for the location.

2.7 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 an 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.

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.

2.8 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.