

DXi9000 Series

Release Notes 4.5.0.4

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Purpose of This Release

DXi 4.5.0.4 Software is a release supporting DXi9000/9100 disk backup systems that may contain 12 G Quad-port SAS cards in Node Slots 2 and 3.

What's New in DXi 4.5.0.4?

This software release introduces a new 12 G Quad-port SAS card that may ship in Node slots 2 and 3 with new DXi9000 SD, DXi9000 HD, and DXi9100 systems.

DXi software release 4.5.0.4 is also fully compatible with existing DXi9000 Series systems with Dual-port cards in Node slots 2 and 3. For node rear views, cabling instructions, cabling diagrams, and port numbering, see [New Quad-port Cards in DXi9000 Series System Nodes on page 5](#).

i **Note: Quantum strongly recommends upgrading to the latest version of DXi software before installing capacity upgrades, regardless of the capacity increment.**

Product Compatibility List

The following table provides information about DXi hardware compatibility with DXi 4.5.0.4 Software.

Component	Description
DXi9000 SD	<ul style="list-style-type: none">• 1 Node• 1 Array module (RBOD)• 0 to 9 Expansion modules (EBODs)• 1 x 1 GbE Ethernet ports• (Optional) 2 x 10 GbE Ethernet ports• (Optional) Up to 8 x 25 GbE Ethernet ports (SFP28 optical or DAC Copper)• (Optional) Up to 16 x 10 GbE SFP Ethernet ports or 16 x 10GbE Base-T Ethernet ports.• (Optional) Up to 8 x 16 Gb Fibre Channel ports (for VTL or PTT)• (Optional) Up to 8 x 100 GbE Ethernet ports (Optical or DAC Copper)• 51 TB - 1020 TB usable capacity
DXi9000 HD	<ul style="list-style-type: none">• 1 Node• 1 Array module (RBOD)• 1 Expansion module (EBOD)• 1 x 1 GbE Ethernet ports• (Optional) 2 x 10 GbE Ethernet ports• (Optional) Up to 8 x 25 GbE Ethernet ports (SFP28 optical or DAC Copper)• (Optional) Up to 16 x 10 GbE SFP Ethernet ports or 16 x 10GbE Base-T Ethernet ports.• (Optional) Up to 8 x 16 Gb Fibre Channel ports (for VTL or PTT)• (Optional) Up to 8 x 100 GbE Ethernet ports (Optical or DAC Copper)• 204 TB - 1020 TB usable capacity

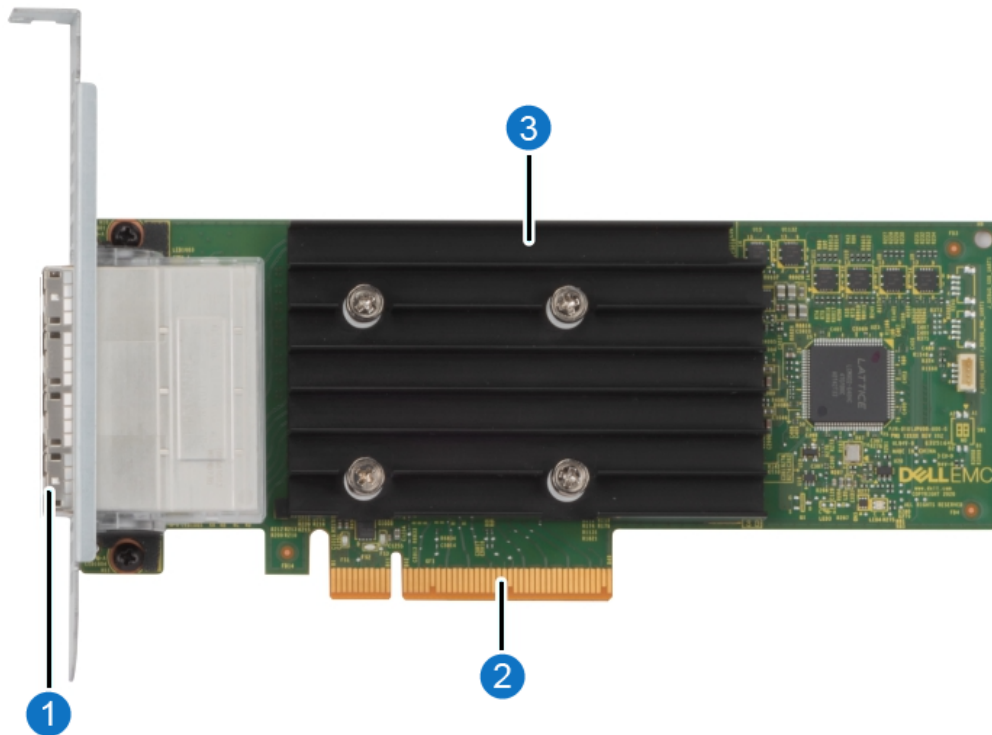
Component	Description
DXI9100	<ul style="list-style-type: none">• 1 Node• 1-2 Array modules (RBODs)• 0-2 Expansion modules (EBODs)• 1 x 1 GbE Ethernet ports• 2 x 10 GbE Ethernet ports• (Optional) 2 x 10 GbE Ethernet ports• (Optional) Up to 8 x 25 GbE Ethernet ports (SFP28 optical or DAC Copper)• (Optional) Up to 16 x 10 GbE SFP Ethernet ports or 16 x 10GbE Base-T Ethernet ports.• (Optional) Up to 8 x 16 Gb Fibre Channel ports (for VTL or PTT)• (Optional) Up to 8 x 100 GbE Ethernet ports (Optical or DAC Copper)• 204 TB - 2 PB usable capacity

New Quad-port Cards in DXi9000 Series System Nodes

New DXi9000 SD, HD, and DXi9100 systems shipped with DXi Software Release 4.5.0.4 may include 12 G Quad-port SAS cards in Node slots 2 and 3, replacing the previously used 12 G Dual-port cards.

New DXi9000/9100 Quad-port Card

Note: This numbering varies from the existing cards in DXi9000 Series Nodes, which are numbered left-to-right.



Item	Description
1	External SAS ports
2	PCIe Connector
3	Heatsink

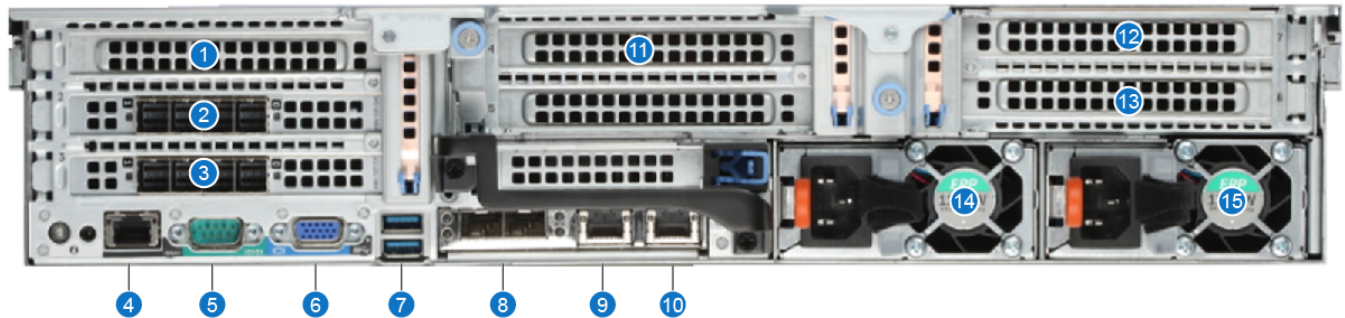
New DXi9000/9100 Quad-port Cards in Node Slots 2 and 3

Note: Port numbers are etched into the cards near the port activity indicators.



Node Rear Views with New Quad-port SAS Cards

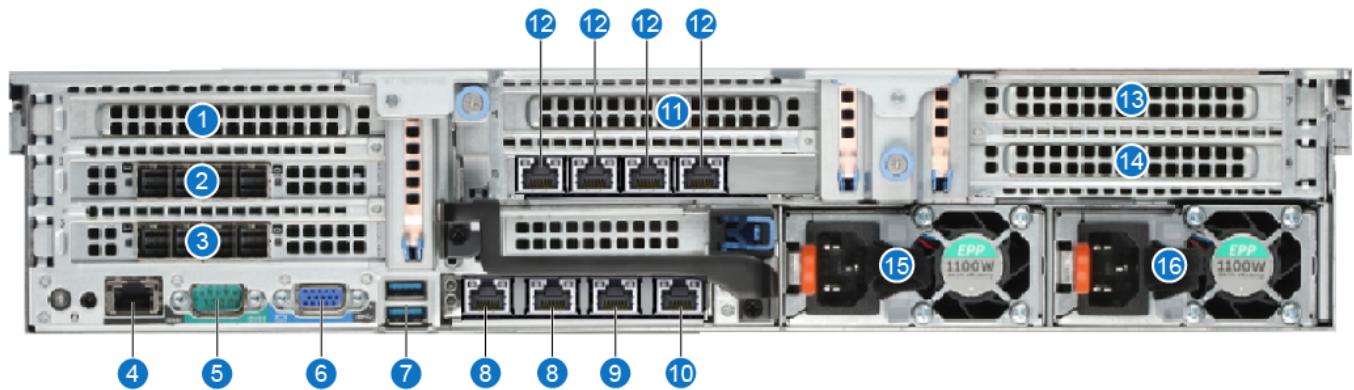
DXi9000 SD and DXi9000 HD Node Rear View



Item	Indicator, Button, or Connector	Description
1	(Optional) <ul style="list-style-type: none"> 4 x 10 GbE (SFP+) Ethernet ports 4 x 10 GBase-T Ethernet port 4 x 16 Gb Fibre Channel Up to 8 x 25 GbE Ethernet Dual ports (SFP28 optical or DAC copper). 	For data ingest/read (Ethernet) or path to tape/VTL ingest/read (Fibre Channel).
2	2 x 12 Gb SAS ports or 4 x 12 Gb SAS ports	For connection to Array modules (RBODs).
3	2 x 12 Gb SAS ports or 4 x 12 Gb SAS ports	For connection to Array modules (RBODs).
4	iDRAC port	For Quantum service use only.
5	Serial connector	For Quantum service use only.
6	VGA connector	Use of connected peripheral devices, such as a USB keyboard and mouse or a VGA display, is <i>not</i> supported and may cause incorrect system operation.
7	USB 2.0 connectors (2)	Use of connected peripheral devices, such as a USB keyboard and mouse or a VGA display, is <i>not</i> supported and may cause incorrect system operation.
8	2 x 10 GbE (SFP+) Ethernet ports	For data ingest/read (Ethernet)
9	1 GbE Ethernet port	For data ingest/read (Ethernet)

Item	Indicator, Button, or Connector	Description
10	Service port	Quantum service only.
11	(Optional) <ul style="list-style-type: none"> • 4 x 10 GbE (SFP+) Ethernet ports • 4 x 10 GBase-T Ethernet port • 4 x 16 Gb Fibre Channel • Up to 8 x 25 GbE Ethernet Dual ports (SFP28 optical or DAC copper). 	For data ingest/read (Ethernet) or path to tape/VTL ingest/read (Fibre Channel).
12	(Optional) <ul style="list-style-type: none"> • 4 x 10 GbE (SFP+) Ethernet ports • 4 x 10 GBase-T Ethernet port • 4 x 16 Gb Fibre Channel • Up to 8 x 25 GbE Ethernet Dual ports (SFP28 optical or DAC copper). 	For data ingest/read (Ethernet) or path to tape/VTL ingest/read (Fibre Channel).
13	(Optional) <ul style="list-style-type: none"> • 4 x 10 GbE (SFP+) Ethernet ports • 4 x 10 GBase-T Ethernet port • 4 x 16 Gb Fibre Channel • Up to 8 x 25 GbE Ethernet Dual ports (SFP28 optical or DAC copper). 	For data ingest/read (Ethernet) or path to tape/VTL ingest/read (Fibre Channel).
14	Power supply (PSU1)	1500 watt hot-swappable power supply.
15	Power supply (PSU2)	1500 watt hot-swappable power supply.

DXi9100 Node Rear View



Item	Indicator, Button, or Connector	Description
1	Slot 1 - (Optional) <ul style="list-style-type: none"> • 4 x 10 GbE (SFP+) Ethernet ports • 4 x 10 GBase-T Ethernet port • 4 x 16 Gb Fibre Channel • 2 x 25 GbE Ethernet ports (SFP28 optical or DAC copper) • 2 x 100 GbE Ethernet ports (QSFP28 optical or DAC copper) 	For data ingest/read (Ethernet) or path to tape/VTL ingest/read (Fibre Channel).
2	Slot 2 - 2 x 12 Gb SAS ports or 4 x 12 Gb SAS ports	For connection to DXi9000/DXi9100 HD Array modules (RBODs).
3	Slot 3 - 2 x 12 Gb SAS ports or 4 x 12 Gb SAS ports	For connection to DXi9000/DXi9100 HD Array modules (RBODs).
4	iDRAC port	For Quantum service use only.
5	RS232 Serial connector	For Quantum service use only.
6	VGA connector	Use of connected peripheral devices, such as a USB keyboard and mouse or a VGA display, is <i>not</i> supported and may cause incorrect system operation.
7	USB 2.0 connectors (2)	Use of connected peripheral devices, such as a USB keyboard and mouse or a VGA display, is <i>not</i> supported and may cause incorrect system operation.

Item	Indicator, Button, or Connector	Description
8	em1 and em2 - 2 x 10 GbE (SFP+) Ethernet ports	For data ingest/read (Ethernet).
9	em3 - 1 GbE Ethernet Management port	For data ingest/read (Ethernet).
10	em4 - 1 GbE Service port	Quantum service only.
11	Slot 4 - (Optional) <ul style="list-style-type: none"> • 4 x 10 GbE (SFP+) Ethernet ports • 4 x 10 GBase-T Ethernet port • 4 x 16 Gb Fibre Channel • 2 x 25 GbE Ethernet ports (SFP28 optical or DAC copper) • 2 x 100 GbE Ethernet ports (QSFP28 optical or DAC copper) 	For data ingest/read (Ethernet) or path to tape/VTL ingest/read (Fibre Channel).
12	Slot 5 - <ul style="list-style-type: none"> • 1 GbE Quad ports (shipped with and required for DXi9100) • Optional slot for DXi9000 SD and DXi9000 HD systems): <ul style="list-style-type: none"> ◦ 4 x 10 GbE (SFP+) Ethernet ports ◦ 4 x 10 GBase-T Ethernet port ◦ 4 x 16 Gb Fibre Channel ◦ 2 x 25 GbE Ethernet ports (SFP28 optical or DAC copper) 	<ul style="list-style-type: none"> • For DXi9100 the Node is shipped with the 1 GbE quad port, required for connection to Array Module(s). • Optional slot for DXi9000 SD and DXi9000 HD systems.
13	Slot 7 - (Optional) <ul style="list-style-type: none"> • 4 x 10 GbE (SFP+) Ethernet ports • 4 x 10 GBase-T Ethernet port • 4 x 16 Gb Fibre Channel • 2 x 25 GbE Ethernet ports (SFP28 optical or DAC copper) • 2 x 100 GbE Ethernet ports (QSFP28 optical or DAC copper) 	For data ingest/read (Ethernet) or path to tape/VTL ingest/read (Fibre Channel).

Item	Indicator, Button, or Connector	Description
14	Slot 8 - (Optional) <ul style="list-style-type: none"> • 4 x 10 GbE (SFP+) Ethernet ports • 4 x 10 GBase-T Ethernet port • 4 x 16 Gb Fibre Channel • 2 x 25 GbE Ethernet ports (SFP28 optical or DAC copper) • 2 x 100 GbE Ethernet ports (QSFP28 optical or DAC copper) 	For data ingest/read (Ethernet) or path to tape/VTL ingest/read (Fibre Channel).
15	Power supply (PSU1)	1500 watt hot-swappable power supply.
16	Power supply (PSU2)	1500 watt hot-swappable power supply.

i Note: Quantum recommends installing the dual port 100 GbE card in slots 8, 4, and 1. If those slots are already used by existing 100 GbE cards, then use slot 7 for your fourth 100 GbE card. Slots 8, 4, and 1 have 16 PCIe lanes and slot 7 is has 8 PCIe lanes.

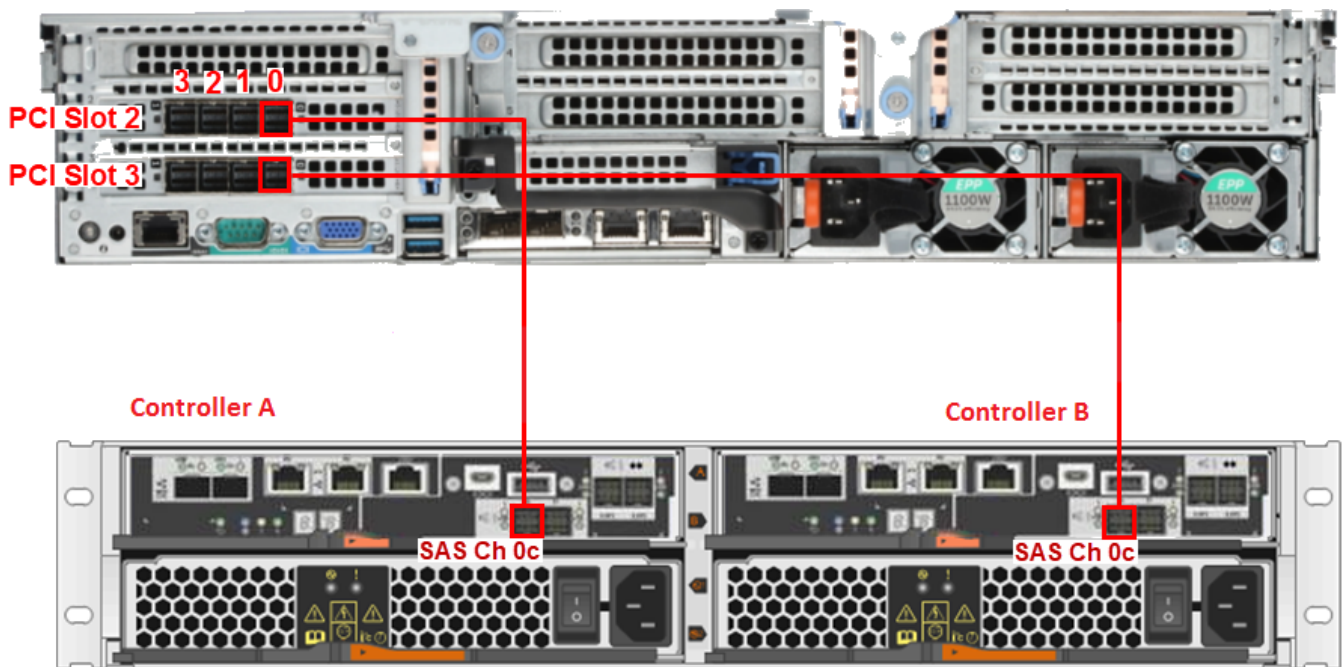
Cabling DXi9000 SD and HD Nodes with New Quad-port SAS Cards

DXi9000 SD - Cable the Node to the Array Module (RBOD)

Note: This process uses two SAS cables.

Node	Array Module (RBOD)
Connect PCI Slot 2 - Port 0 (far-right port)	→ Controller A - SAS Ch 0c
Connect PCI Slot 3 - Port 0 (far-right port)	→ Controller B - SAS Ch 0c

WARNING: SAS cables and connectors have some tolerance to locking in place and sometimes will not fully lock with your first attempt. If the SAS cable does not securely lock into the server port the first time, repeat using slightly more force until it locks into place.



Note: After all cables are attached, move each cable to the left and right, then gently pull straight out to confirm that the cable is locked.

WARNING: If cables are not secure when connected to the modules, the software will not recognize the RBOD at startup.

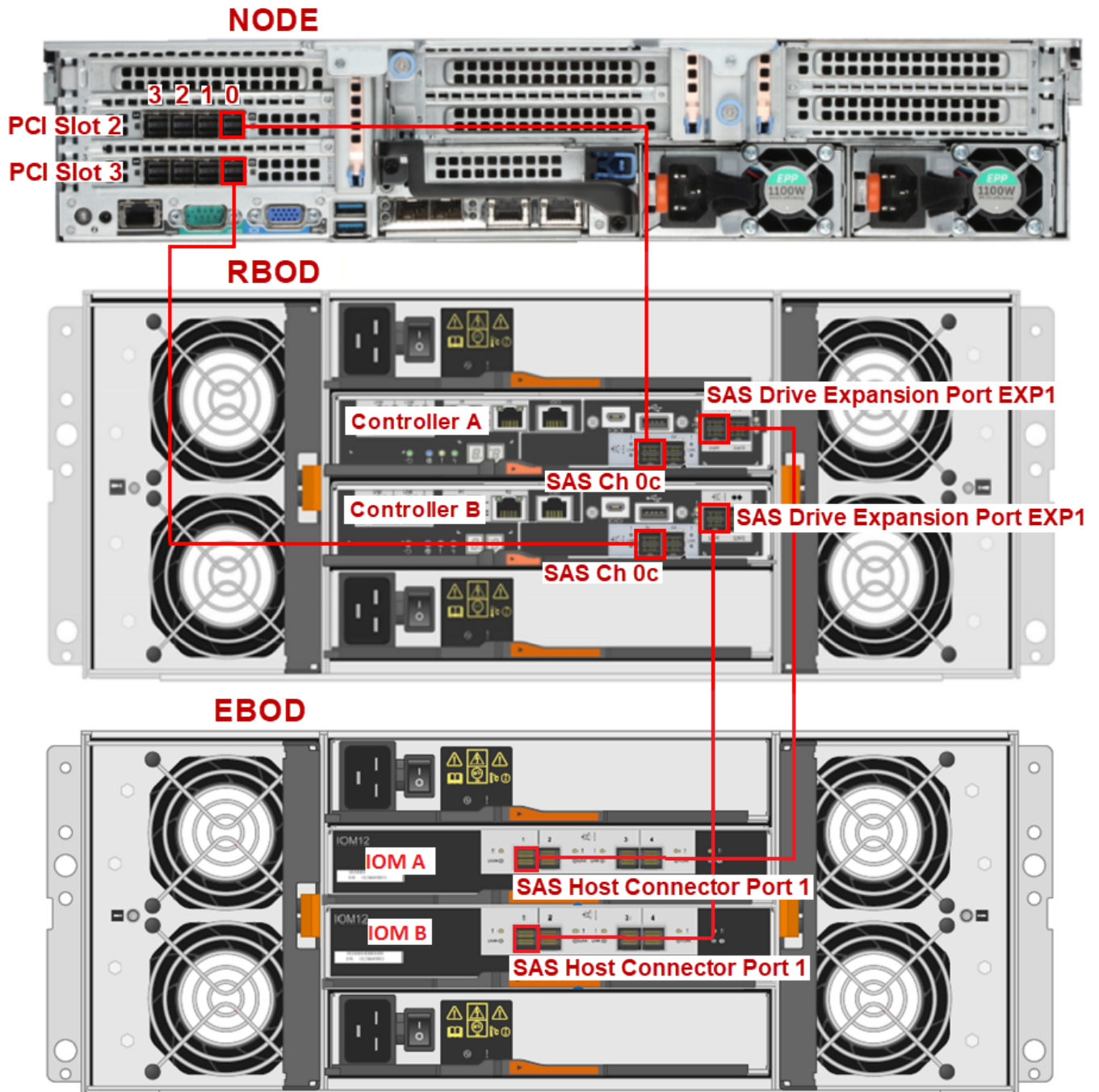
DXi9000 HD - Cable the Node, Array Module (RBOD), and Expansion Module (EBOD)

Node		Array Module (RBOD)
Connect PCI Slot 2 - Port 0 (far-right port)	→	Controller A - SAS Ch 0c
Connect PCI Slot 3 - Port 0 (far-right port)	→	Controller B - SAS Ch 0c

Array Module (RBOD)		Expansion Module (EBOD)
Connect Controller A - SAS Drive Expansion Port EXP1	→	IOM A - SAS Host Connector Port 1
Connect Controller B - SAS Drive Expansion Port EXP1	→	IOM B - SAS Host Connector Port 1

i Note: The nylon pull tabs on SAS cable plugs may be white on one end and blue on the other. The function is the same for both plugs.

⚡ WARNING: SAS cables and connectors have some tolerance to locking in place and sometimes will not fully lock with your first attempt. If the SAS cable does not securely lock into the server port the first time, repeat using slightly more force until it locks into place.



Cabling DXi9100 Nodes with New Quad-port SAS Cards

DXi9100 - Cable the Node, Array Module(s), and Expansion Module(s)

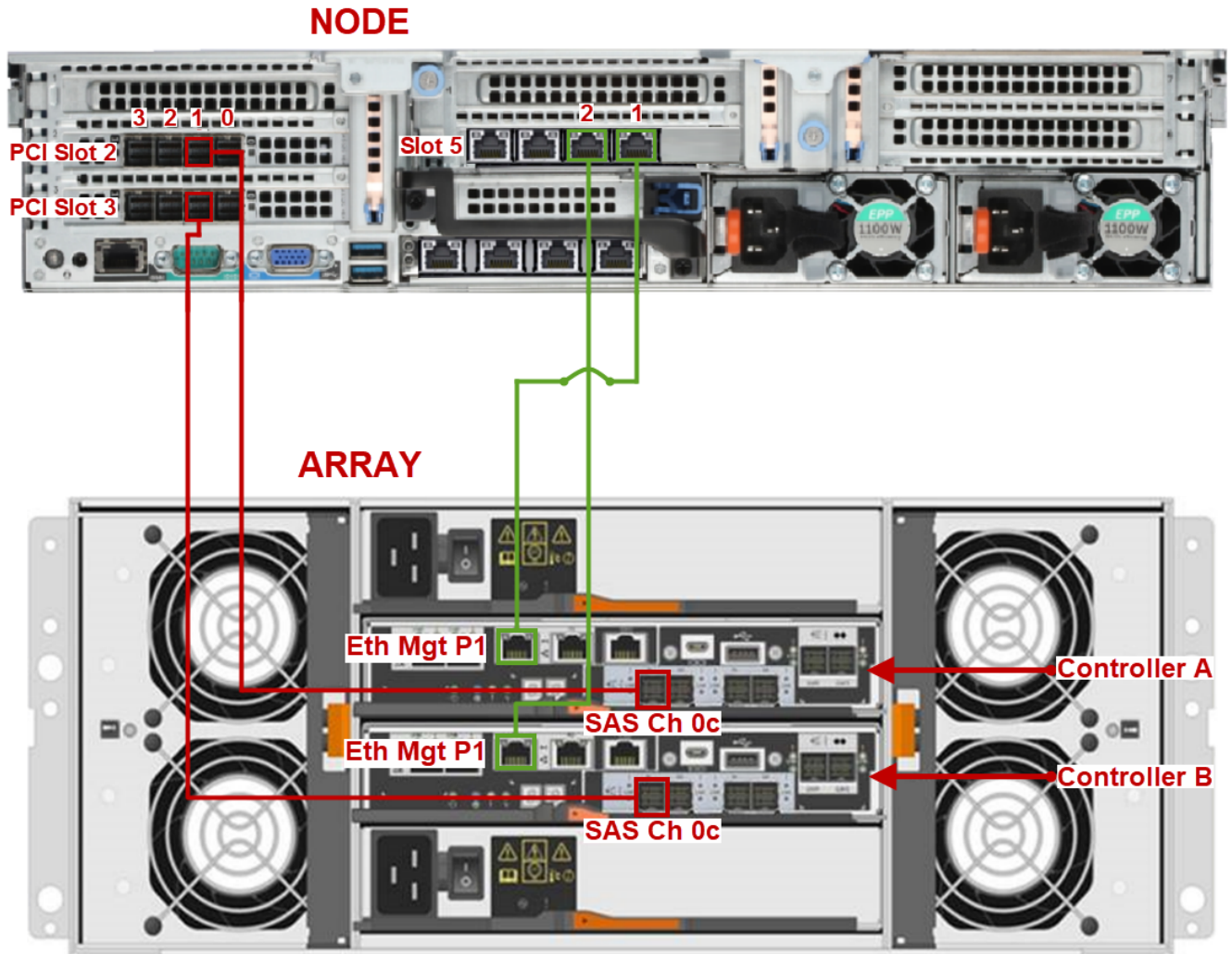
The following subsections illustrate cabling for the DXi9100 Node, Array Module(s), and Expansion Module(s), based on the storage capacity range for each configuration.

DXi9100 Cabling: Node + 1 Array Module

This configuration shows cabling for 204 TB - 510 TB storage capacity systems: Node + 1 Array Module.

i Note: The quad-port 1 GbE card in slot 5 is manufactured with port numbering.

Node		Array Module
Connect PCI Slot 2 - Port 1 (second from right)	→	Controller A - SAS Ch 0c
Connect PCI Slot 3 - Port 1 (second from right)	→	Controller B - SAS Ch 0c
Connect Slot 5 - Port 1	→	Controller A - Ethernet Management Port 1
Connect Slot 5 - Port 2	→	Controller B - Ethernet Management Port 1



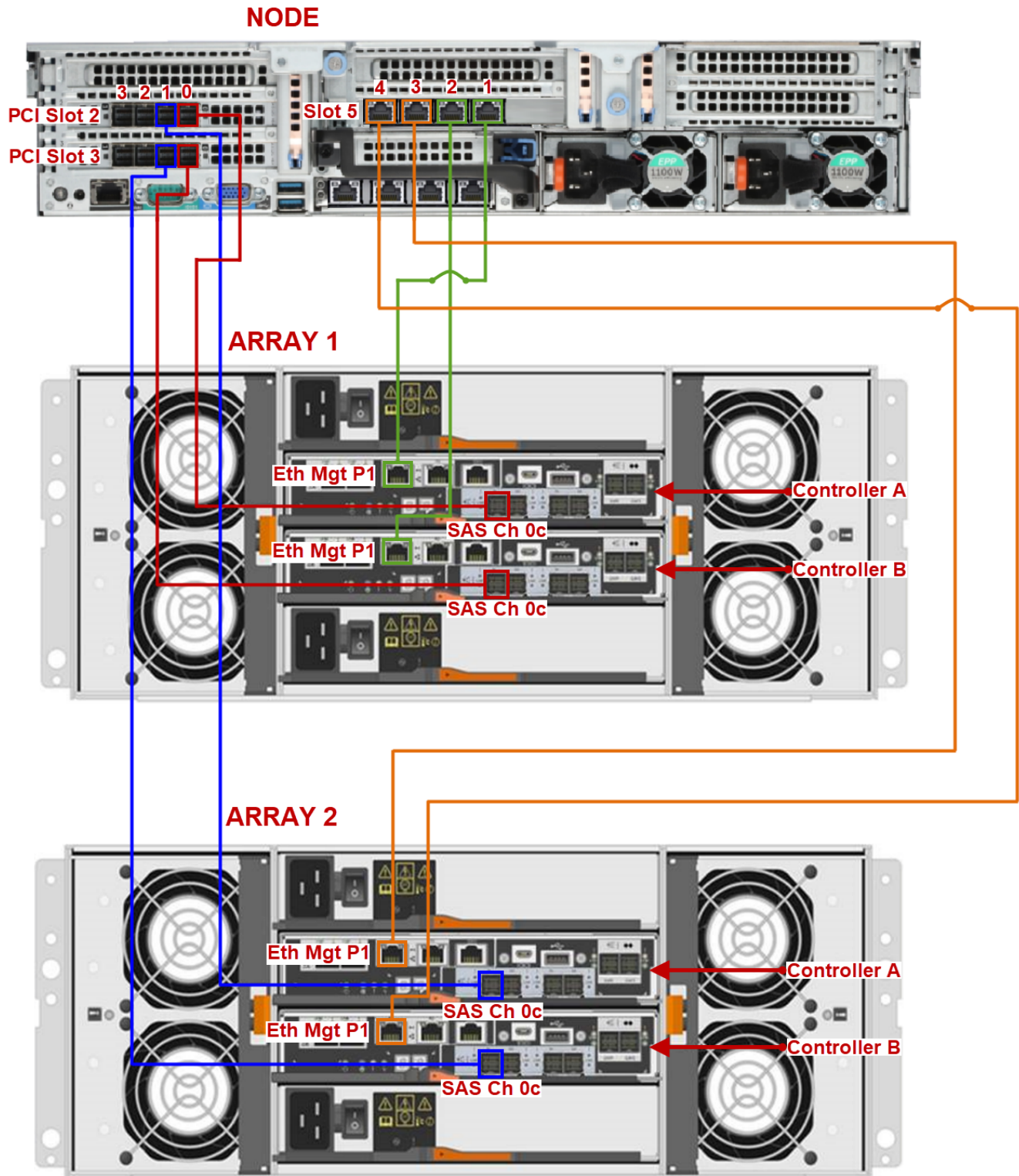
Example: Array Controller SAS Port Ch 0c



DXi9100 Cabling: Node + 2 Array Modules

This configuration shows cabling for 612 TB - 1020 TB storage capacity systems: Node + 2 Array Modules.

Node	Array Modules
Connect PCI Slot 2 - Port 0 (far-right port)	→ Array 1 Controller A - SAS Ch 0c
Connect PCI Slot 3 - Port 0 (far-right port)	→ Array 1 Controller B - SAS Ch 0c
Connect PCI Slot 2 - Port 1 (second from right)	→ Array 2 Controller A - SAS Ch 0c
Connect PCI Slot 3 - Port 1 (second from right)	→ Array 2 Controller B - SAS Ch 0c
Connect Slot 5 - Port 1	→ Array 1 Controller A - Ethernet Management Port 1
Connect Slot 5 - Port 2	→ Array 1 Controller B - Ethernet Management Port 1
Connect Slot 5 - Port 3	→ Array 2 Controller A - Ethernet Management Port 1
Connect Slot 5 - Port 4	→ Array 2 Controller B - Ethernet Management Port 1



Example: Array Controller SAS Port Ch 0c



Cabling DXi9100 Systems Containing 1 or 2 Expansion Modules

Cabling from the DXi9100 Node to the first Array in this configuration is the same as for:

- **DXi9100 Cabling: Node + 2 Array Modules + Expansion Module**
The above configuration is used in systems configured for 1122 TB - 1530 TB storage capacity.
- **DXi9100 Cabling: Node + 2 Array Modules + 2 Expansion Modules**
The above configuration is used in systems configured for 1622 TB - 2040 TB (2 PB) storage capacity.

Known Issues

DXi 4.5.0.4 Software has the following known issues:

- [Replication Known Issues](#)
- [GUI Known Issues](#)
- [NAS Known Issues](#)
- [VDMS Known Issues](#)
- [DXi Advanced Reporting Known Issues](#)

Replication Known Issues

Bug Number	SR Number	Description	Workaround
36811		Some chargeback reporting statistics are not maintained for failback operations.	<p>The Input Bytes for the failback operation can be viewed on the source for the failback operation. On the Replication > Send page, hold the cursor over the job status and note the value displayed for Original Data Size.</p> <p>i Note: After the failback operation is complete, chargeback reporting on the target for the failback operation will accurately report the User Data Size of the data replicated.</p>
37000	A0599191	If replication is disabled and the re-enabled for a share or partition on the Replication > Send page, previously configured Directory/File or Cartridge Based Replication settings are lost.	<p>This is expected behavior. When replication is disabled, all replication settings for the share or partition are cleared. To re-configure the share or partition for Directory/File or Cartridge Based replication, select it and click Configure.</p> <p>i Note: You can disable or enable replication for all shares or partitions on the Replication > Actions page. This method preserves replication settings for all shares or partitions.</p>

GUI Known Issues

Bug Number	SR Number	Description	Workaround
30999		When creating or editing an event on the Configuration > Scheduler page, all times are relative to the workstation from which the GUI is accessed, rather than the DXi.	If the DXi is in a different time zone than the workstation used to access the GUI, make sure to account for the time zone differences when scheduling events.

Bug Number	SR Number	Description	Workaround
35426		On the Configuration > OST > Storage Servers page, if there are multiple pages of storage servers, the Delete button is unavailable (gray) if all storage servers on a page are selected even if all the storage servers meet the deletion criteria (no backup images or active connections).	This occurs if a storage server on another page does not meet the deletion criteria. De-select at least one storage server on the displayed page, and the Delete button will be available.
36926		When adding a scheduled event on the Scheduler page, the message Saving, please wait displays, but the save action does not complete, and the schedule is not set.	Refresh the browser window, and add the scheduled event again.
39824		On the Status > Hardware > Details > Storage Arrays page, an Attention link displays next to Controllers and Volumes , but clicking the link displays an empty list of non-normal controllers or volumes.	Even though the Attention link displays, drives that are rebuilding are considered normal by the system. Click the Controllers or Volumes link to see a list of all drives.
42779		The PTT page allows any number concurrent PTT backup jobs to be configured. When more concurrent backup jobs are started than the PTT license allows (3), the additional jobs fail.	Do not configure more than 3 concurrent PTT backup jobs.

NAS Known Issues

Bug Number	SR Number	Description	Workaround
27908	1387940 1408612 1465392 1493203	Files copied to exported NFS and CIFS shares do not retain their original creation time.	To determine the creation time, examine the original file rather than the copy on the share.

VDMS Known Issues

Bug Number	SR Number	Description	Workaround
47806		VDMS cannot be enabled if a "veeam" account is defined on a connected or disconnected windows workgroup.	Delete the "Veeam" account from the windows workgroup.

DXi Advanced Reporting Known Issues

Bug Number	SR Number	Description	Workaround
39487		On the Replication Ingest report, data for small replication jobs is not graphed accurately, especially when longer time ranges are selected.	See the exported CSV file (Reports > Replication Ingest > Export Replication Chargeback) for the correct data.

Documentation

For the latest DXi V5000, DXi4800 and DXi9000 Series documentation using 4.5.0.4 software, see the following DXi Documentation Centers:

- **DXi9000 Series Documentation Center:** www.quantum.com/DXi9000Docs

Supported Backup Applications

For the current list of backup applications supported for use with DXi 4.5.0.4 Software:

1. Click on <https://www.quantum.com/swcompguide.aspx>
The **Support > Software Compatibility With Tape Libraries** page appears.
2. In the **Compatibility Guide** list, select **Software / Disk-Based Backup Systems**.
3. (Optional) Select your system and software from the **Storage Device** and **Application Software** lists.

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- i Note:** If the storage device and application software are not selected, a full list of all available devices and software will appear and requires a minute or two to populate. Select your system and software for a faster-appearing, shorter list.

4. Click **Submit**.

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- i Note:** Contact the backup application vendor for the latest software revision information.

DXi Additional Notes

For additional information about DXi 4.5.0.4 Software, refer to the following sections.

- [Email Reports](#)
- [Quantum Vision](#)

Email Reports

Quantum recommends enabling **Email Reports** after upgrading to DXi 4.5.0.4 Software (if not already enabled). When enabled, **Email Reports** periodically sends system configuration and status information to Quantum, including any software upgrades you have installed using the new **Software Upgrade Utility**. Quantum Support can use this information to provide a better support experience in the future.

To configure Email Reports:

1. Make sure a valid outgoing e-mail server is specified on the **Configuration > Notifications > Email > Server** page.
2. (Optional) Specify any additional recipients to receive the reports on the **Configuration > Notifications > Email > Email Reports > Recipients** page.
3. Make sure a weekly **Email Reports** schedule is configured on the **Configuration > Scheduler** page. Configure two weekly recurring events: one for **Status** reports and one for **Configuration** reports.

Quantum Vision

You must update to the latest version of Quantum Vision (4.4.1 or later) to operate with DXi 4.5.0.4 Software.

Contacting Quantum

More information about this product is available on the Service and Support website at <http://www.quantum.com/serviceandsupport/get-help/index.aspx>. The Service and Support Website contains a collection of information, including answers to frequently asked questions (FAQs). You can also access software, firmware, and drivers through this site.

For further assistance, or if training is desired, contact the Quantum Customer Support Center:

Region	Support Contact
North America	1-800-284-5101 (toll free) +1-720-249-5700
EMEA	+800-7826-8888 (toll free) +49 6131 324 185
Asia Pacific	+800-7826-8887 (toll free) +603-7953-3010

For worldwide support:

<https://www.quantum.com/serviceandsupport/get-help/index.aspx#contact-support>
