Quantum.

User's Guide

Xcellis Workflow Extender

Quantum Xcellis Workflow Extender R520 User's Guide 6-68511-01 Rev A, November 2016.

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Contents

Chapter 3	Basic System Operations	29

Chapter 4	Contacting Quantum	51

Chapter 1
Introduction

How this Guide is Organized

This guide describes how to identify and operate the key features of the hardware components of the Xcellis Workflow Extender .

Contents

This guide contains the following chapters:

- Chapter 1, Introduction — provides an overview of this guide, and also includes document conventions, product safety statements, a list of related documents, and supported Internet browsers.

- Chapter 2, Hardware Overview — provides an overview of the system.

- Chapter 3, Basic System Operations — provides basic operating instructions for the system.

- Chapter 4, Contacting Quantum — provides contact information for the Quantum Technical Assistance Center.

Navigating This Document With Adobe Reader

There are different ways to navigate PDFs using Adobe Reader. See:

http://help.adobe.com/en_US/acrobat/X/standard/using/WSD1CC3AD9-BF89-452d-AF01-70EEE881A39B.w.html

About the Xcellis Workflow Extender Hardware

About the Xcellis Workflow Extender

The Xcellis Workflow Extender combines industry-proven Quantum hardware and StorNext software into one convenient solution. The Xcellis Workflow Extender can operate as a SAN Client in a StorNext Metadata Network, providing StorNext LAN and/or NAS client access to

StorNext SAN. It can also function as a DDM host to offload metadata processing activities from another StorNext appliance.

Figure 1 The Xcellis Workflow Extender Server
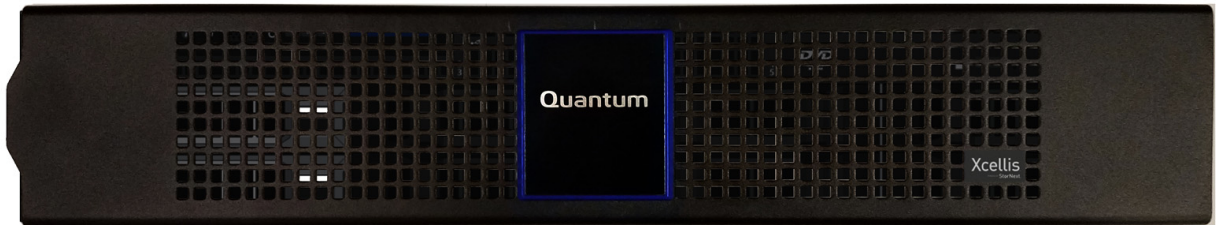
The Xcellis Workflow Extender server is configured during system installation, including expansion cards, licenses, and system software, hardware and network configuration settings.

Hardware Specification

The Xcellis Workflow Extender contains the following:

- Two redundant, hot-swappable system hard drives in a RAID 1 configuration
- Redundant cooling fans and power

Network Connectivity

Here are the quantity and type of network cards and ports:

- The Xcellis Workflow Extender ships with one 4-port x 1 GbE NIC PCIe expansion card in Slot 1. Since there is also one embedded 1 GbE port, there are five configurable 1 GbE ports on the system from the factory.
- The Xcellis Workflow Extender comes with many other available expansion card options for slots 2-4. See Hardware Overview on page 11.

Xcellis Workflow Extender Licensing/ Configuration

There are several items to note about the Gateway Appliance license used on the Xcellis Workflow Extender:

- The Xcellis Workflow Extender uses a "per Gateway" DLC license model. This license allows you to add clients without having to purchase additional individual licenses.

- The Gateway Appliance license must be purchased and installed on the Xcellis Workflow Extender by way of a **license.dat** file. To view license status, open the GUI of the StorNext MDC set up to monitor and provide the Gateway Metrics Reports for your Xcellis Workflow Extender. Click the **Connected Licensed Gateways** at the bottom of the License page in the GUI of the host MDC, which provides a list of all licensed Gateways in the environment.

- After the Gateway license is installed on the system, the system must also must be configured for use as a StorNext LAN gateway. See <u>Enabling the Gateway Feature</u> on page 43.

The Gateway Metrics Report

You can view the **Gateway Metrics Report** to monitor performance and throughput on your gateways, clients, and file systems from the **Reports > Gateway Metrics** menu option on the GUI of a StorNext MDC set up to monitor your Xcellis Workflow Extender system. Because you can see at a glance which gateways, clients, or file systems are currently under- or over-utilized, the **Gateway Metrics Report** is a useful tool for understanding LAN network and client performance characteristics. For more information, see the latest version of the *StorNext User's Guide*, or view the video that describes the features and functions of the **Gateway Metrics Report** at <u>http://www.quantum.com/sngatewayhowtos</u>

About StorNext Licensing

Separate licenses are required for various StorNext features, as well as to perform an upgrade to a new release. Refer to the current *Release Notes* for your system model for a description of the StorNext licenses installed and/or supported for your system. See <u>Obtain and Install StorNext Licenses</u> on page 33.

About StorNext Features

This guide includes information about StorNext features that may not initially apply to your system, but that could be installed in the future.

Notes, Cautions, and Warnings

The following describes important information about Notes, Cautions, and Warnings used throughout this guide.

Note

> **Note:** Emphasizes important information related to the main topic.

Consequences if not followed:

There are no hazardous or damaging consequences.

Caution

> **Caution:** Indicates potential hazards to equipment or data.

Consequences if not followed:

Failure to take or avoid this action could result in loss of data or harm to equipment.

Warning

> **WARNING:** Indicates potential hazards to personal safety.

Consequences if not followed:

Failure to take or avoid this action could result in physical harm to the user or hardware.

Writing Conventions

This guide uses the following document conventions to help you recognize different types of information.

When a step includes substantial supporting information, the following document conventions are used to differentiate the supporting information from the procedural content:

Hardware Conventions

Conventions
Right side of the system — Refers to the right side as you face the component being described.
Left side of the system — Refers to the left side as you face the component being described.

Software Conventions

Conventions	Examples
For all UNIX-based commands, the **#** prompt is implied, although it is not shown.	**TSM_control stop** is the same as # TSM_control stop
For all UNIX-based commands, words in *italic* are variables and should be replaced with user-defined values.	**cvaffinity** *filename* where *filename* is a variable and should be replaced with a user-defined value.
User input is shown in bold font.	**./install.stornext**
Computer output and command line examples are shown in monospace font.	`./install.stornext`
User input variables are enclosed in angle brackets.	**http://<ip_address>/cgi-bin/stats**

Conventions	Examples

For UNIX and Linux commands, the command prompt is implied.	`TSM_control stop`
	`is the same as`
	`# TSM_control stop`

File and directory names, menu commands, button names, and window names are shown in bold font.	**/data/upload**
Menu names separated by arrows indicate a sequence of menus to be navigated.	**Utilities > Firmware**

Available Documentation

Hardware documentation

Available documentation for the system hardware is located here:

www.quantum.com/xcelliswfedocs

StorNext software documentation

Available documentation for StorNext software is located here:

www.quantum.com/sn5docs

StorNext NAS documentation

(includes information about using NAS software and the NAS command-line interface)

Available documentation for StorNext NAS software is located here:

www.quantum.com/sncdocs

Supported Internet Browsers

The Internet browser software is not supplied with the system. You must obtain and install it independently. Refer to the most current *Quantum StorNext Compatibility Guide* for the complete list of browsers supported to use the StorNext GUI on a StorNext MDC system (includes Xcellis Workflow Director, M660, M440, M330, Artico, and Pro Foundation systems - used to display gateway licensing and the Gateway metrics report).

Product Safety Statements

Quantum will not be held liable for damage arising from unauthorized use of the product. The user assumes all risk in this aspect.

This unit is engineered and manufactured to meet all safety and regulatory requirements. Be aware that improper use may result in bodily injury, damage to the equipment, or interference with other equipment.

WARNING: Before operating this product, read all instructions and warnings in this document and in the system, safety, and regulatory guide.

在使用本产品之前，请先阅读本文档及系统、安全和法规信息指南中所有的说明和警告信息。

警告　操作本產品前，請先閱讀本文件及系統、安全與法規資訊指南中的指示與
警告說明。

ADVERSAL　Læs alle instruktioner og advarsler i dette dokument og i *Vejledning om system-sikkerheds- og lovgivningsoplysninger*, før produktet betjenes.

AVERTISSEMENT　Avant d'utiliser ce produit, lisez la totalité des instructions et avertissements de ce document et du *Guide d'informations sur le système, la sécurité et la réglementation*.

HINWEIS　Lesen Sie vor der Verwendung dieses Produkts alle Anweisungen und Warnhinweise in diesem Dokument und im System, Safety, and Regulatory Information Guide (Info-Handbuch: System, Sicherheit und Richtlinien).

אזהרה　לפני ההפעלה של מוצר זה, קרא את כל ההוראות והאזהרות הכלולות במסמך זה וכן במדריך מידע בנושאי *מערכת, בטיחות ותקינה*

警告　この製品を使用する前に、本文書、および『システム、安全、規制に関する情報ガイド』に記載しているすべての警告と指示をお読みください。

경고　이 제품을 작동하기 전에 이 문서 및 시스템, 안전, 및 규제 정보 안내서에 수록된 모든 지침과 경고 표지를 숙지하십시오.

ПРЕДУПРЕЖДЕНИЕ　всеми инструкциями и предупреждениями, приведенными в данном документе и в *Справочном руководстве по устройству, технике безопасности и действующим нормативам*.

ADVERTENCIA　Antes de utilizar este producto, lea todas las instrucciones y advertencias en este documento y en la Guia informativa sobre sistema, seguridad y normas.

| VARNING	Läs alla anvisningar och varningar i detta dokument och i *System, säkerhet och krav från myndigheter - Informationshandbok* innan denna produkt tas i bruk.

Chapter 2
Hardware Overview

This chapter contains the following sections:

- [The Xcellis Workflow ExtenderStorNext System](#)
- [Xcellis Workflow ExtenderStorNext Connectivity](#) on page 21
- [Relocating the System](#) on page 27

The Xcellis Workflow ExtenderStorNext System

Figure 2 Xcellis Workflow Extender SystemXcellis Workflow Extender System - (Front)
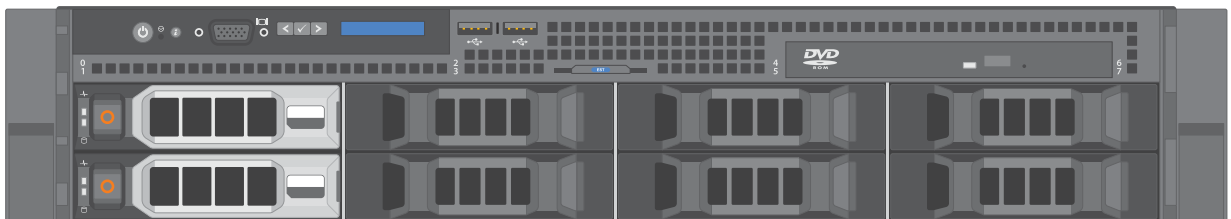
Xcellis Workflow Extender

System Front View

Figure 3 shows, and Table 1 describes the indicators and buttons on the front of the Xcellis Workflow Extender.

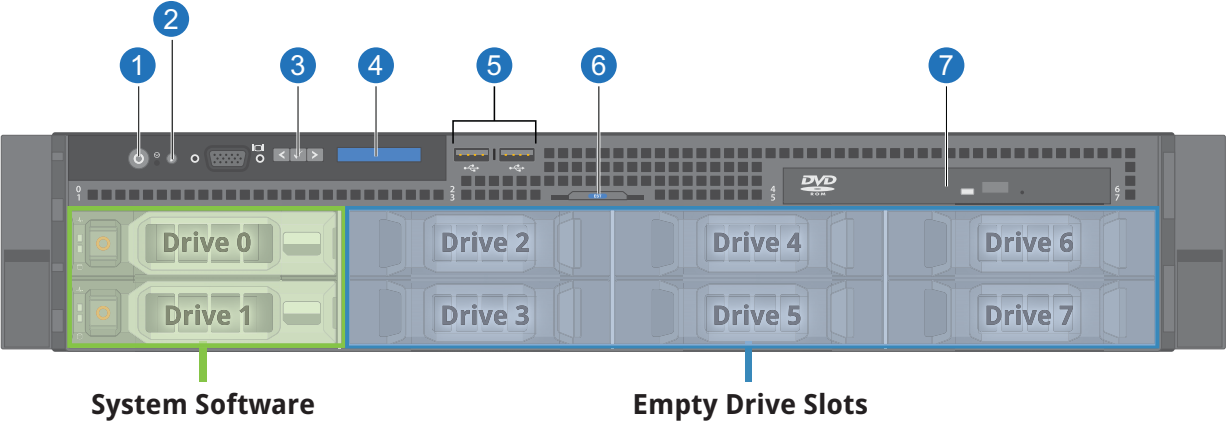Figure 3 Xcellis Workflow Extender – Front View

System Software   **Empty Drive Slots**

Table 1 Xcellis Workflow
Extender – Front View
Indicators and Buttons

| Item	Indicators, Button, or Connector	Icon	Description
1	Power-on indicator/ power button		The power-on indicator lights when the system power is on. The power button controls the power supply output to the system. When the system bezel is installed, the power button is not accessible. **Note:** To perform a graceful shutdown, press and release the power button. **Note:** To force an ungraceful/hard stop shutdown, press and hold the power button for 5 seconds.
2	System identification button		The identification buttons on the front and back panels can be used to locate a particular system within a rack. When one of these buttons is pushed, the LCD panel on the front and the blue system status indicator on the back blink until one of the buttons is pushed again.
3	LCD menu buttons		Allows you to navigate the control panel LCD menu
4	LCD panel		Provides system ID, status information, and system error messages The LCD lights blue during normal system operation. When the system needs attention, the LCD color will change to amber, and will display an error code followed by descriptive text. **Note:** If the system is connected to AC power and an error has been detected, the LCD lights amber, regardless of whether the system has been powered on.
5	USB connectors (2)		To connect USB devices to the system (USB 2.0 compliant)
6	System service tag pull tab		A slide-out tab which contains system information including the Express Service tag number, embedded NIC MAC address, and iDRAC Enterprise card MAC address

Item	Indicators, Button, or Connector	Icon	Description
7	Optical drive		SATA optical DVD drive

Hard Drive Indicator Patterns

The two hard drives located on the front of the system (in drive bays 0 and 1) are used to store the (operating system and StorNext software). Drive bays 2 through 7 are empty, and reserved for Quantum use. Unlabeled indicators, connectors, and buttons are reserved for Quantum Service.

For more information, see

Figure 4 Xcellis Workflow Extender – Hard-Drive Indicator Patterns
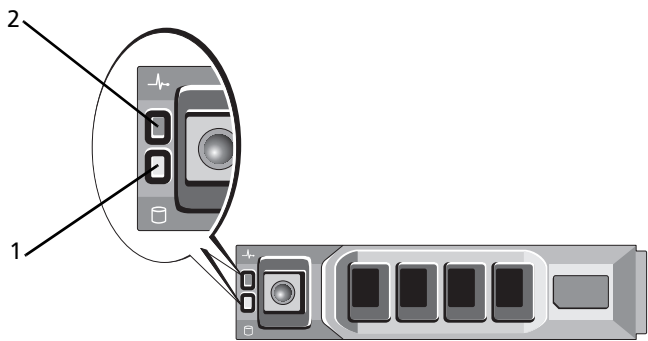
1 Hard-drive activity indicator (green)

2 Hard-drive status indicator (green or amber)

Table 2 Xcellis Workflow
Extender – Hard-Drive Activity
and Status Indicators

Drive-Status Indicator Pattern (RAID Only)	Condition
Blinks green two times per second	Identify drive/preparing for removal.
Off	Drive ready for insertion or removal. **Note:** When system power is applied, the drive status indicator remains off until all hard drives are initialized. Drives are not ready for insertion or removal during this time.
Blinks green, amber, and off	Predicted drive failure.
Blinks amber four times per second	Drive failed
Blinks green slowly	Drive rebuilding
Steady green	Drive online
Blinks green three seconds, amber three seconds, and off six seconds	Rebuild aborted

System Rear View

The back of each Xcellis Workflow Extender has a series of indicators, connectors, and buttons. Unlabeled indicators, connectors, and buttons are reserved for Quantum Service.

Figure 5 shows the rear indicators, connectors and buttons of the Xcellis Workflow Extender system. See Table 3 for information on the labeled components.
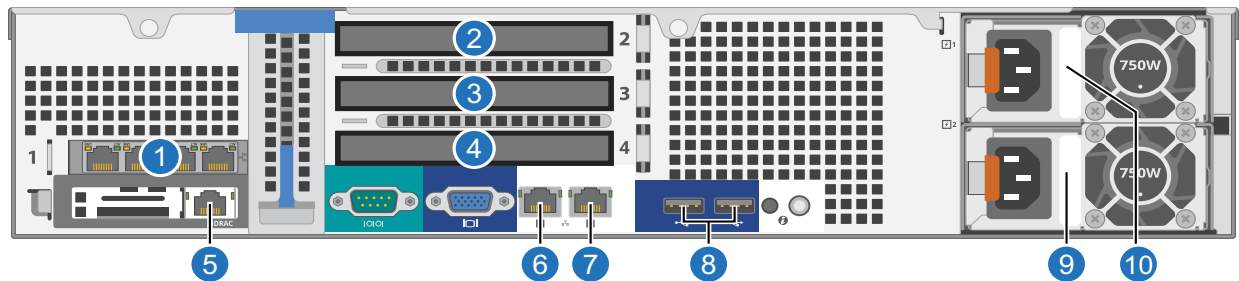
Figure 5 Xcellis Workflow
Extender – Rear View

Table 3 Xcellis Workflow
Extender – Rear Panel Features
and Indicators

Item	Indicator, Button, or Connector	Icon	Description
1	PCIe slot 1	⟨icon⟩	4-port 1 GbE NIC - provides access to the MDC network and LAN client network
2	PCIe slot 2	n/a	**Options:** • 4-port 1 GbE NIC - provides access to the LAN client network • 2-port 10 GbE NIC - provides access to the LAN client network • 2-port 40GbE HCA • 2-port 56 Gb Infiniband FDR HCA • Empty
3	PCIe slot 3		**Options:** • 4-port 1 GbE NIC - provides access to the LAN client network • 2-port 10 GbE NIC - provides access to the LAN client network • Empty

Item	Indicator, Button, or Connector	Icon	Description
4	PCIe Slot 4		**Options:** • 4-port 16 Gb Fibre Channel HBA • 2-port 16 Gb Fibre Channel HBA • 2-port 8 Gb Fibre Channel HBA • Empty
5	iDRAC Enterprise port		Reserved for Quantum Service
6	Service Port (Eth0)		Reserved for Quantum Service
7	LAN Client Ethernet Port (Eth1)		Embedded 1 GbE NIC port - can provide access to the LAN client network. This port could also be bonded with other 1 GbE NIC port connections. **Note:** This port cannot be bonded with any 10 GbE ports in the system.
8	USB Ports (2)		USB 2.0-compliant connection for USB devices
9	Power supply 2 (PS2)		750 W redundant power supply
10	Power supply 1 (PS1)		750 W redundant power supply

NIC Indicator Codes

[Figure 7](#) shows the Xcellis Workflow Extender NIC indicator codes.

Figure 7 NIC Indicators
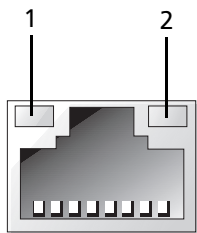
1 Link indicator

2 Activity indicator

Indicator Status	Indicator Code
Link and activity indicators are off.	The NIC is not connected to the network.
Link indicator is green.	The NIC is connected to a valid network link at 1000 Mbps.
Link indicator is amber.	The NIC is connected to a valid network link at less than the maximum port speed.
Activity indicator is blinking green.	Network data is being sent or received.

Power Supply Indicator Codes

This section describes the Xcellis Workflow Extender power supply indicator codes (see Figure 8). The power supply indicators show if power is present, or if a power fault has occurred.
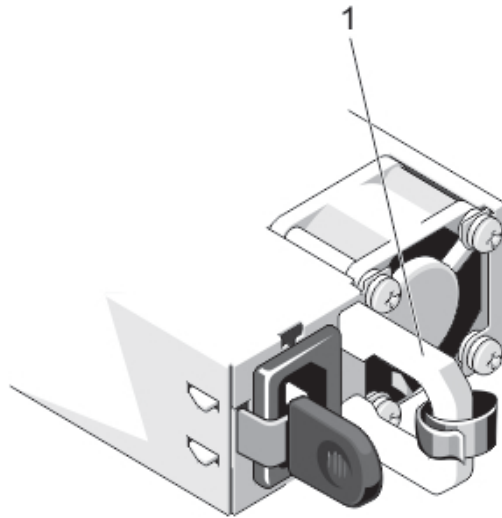
Figure 8 Power Supply
Indicator

Table 4 Power Supply Status
Indicator

Indicator Status	Indicator Code
Not lit	AC power is not connected.
Green	The handle displays green which indicates that a valid power source is connected to the power supply and that the power supply is operational. When the system is on, a green light also indicates that the power supply is providing DC power to the system.

Indicator Status	Indicator Code
Flashing Amber	Indicates a problem with the power supply.
Flashing green	When hot-adding a power supply, this indicates that the power supply is mismatched with the other power supply (a high-output power supply and an energy smart power supply are installed in the same system). Replace the power supply that has the flashing indicator with a power supply that matches the capacity of the other installed power supply.

Caution: When correcting a power supply mismatch, replace only the power supply with the flashing indicator. Swapping the opposite power supply to make a matched pair can result in an error condition and unexpected system shutdown. To change from a High Output configuration to a Low Output configuration or vice versa, you must power down the system.

Caution: The AC power supplies, which come with the system, support both 220 V and 110 V input voltages. When two identical power supplies receive different input voltages, they can output different wattages, and trigger a mismatch.

Caution: Combining AC and DC power supplies is not supported and triggers a mismatch.

Note: Each AC power supply has an illuminated translucent handle that serves as an indicator to show whether power is present or whether a power fault has occurred.

Xcellis Workflow ExtenderStorNext Connectivity

This section covers:

- Power Cable Connections
- Ethernet, Infiniband and Fibre Channel Connections

Power Cable Connections

Connect the power cables for each component into an available power outlet as shown here (see Figure ? on page 1).

Note: Quantum recommends attaching the primary and secondary power connections to alternate power sources for resiliency. Quantum also recommends that one of these power sources is a UPS (uninterruptible power source), such as battery backup or generator, or be connected to redundant AC power supplies to avoid system interruption in the case of a power failure.
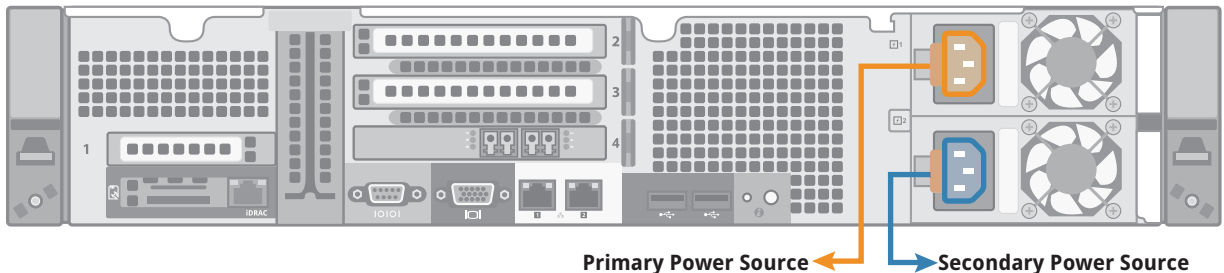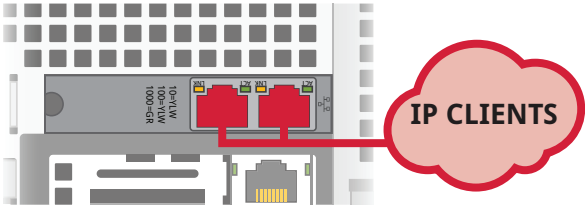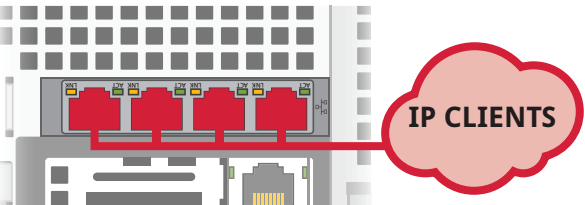
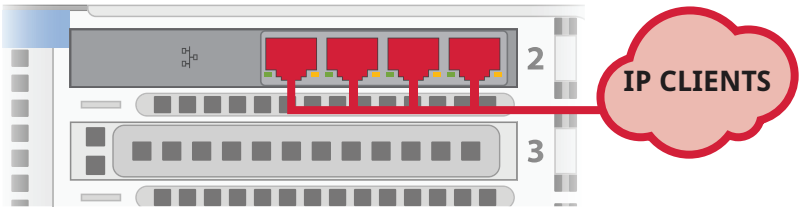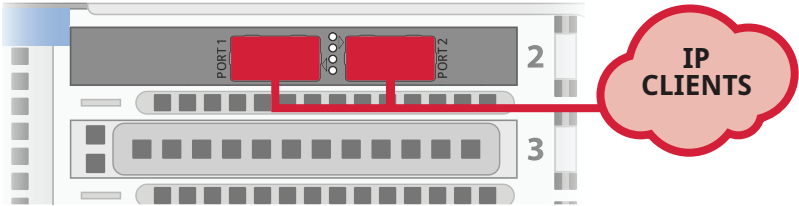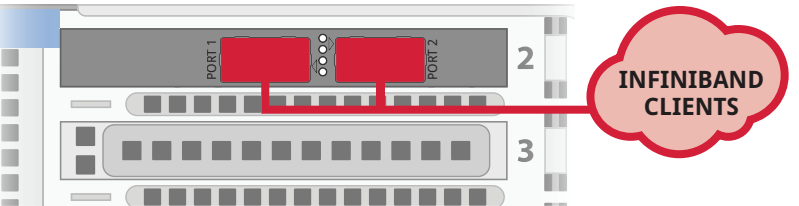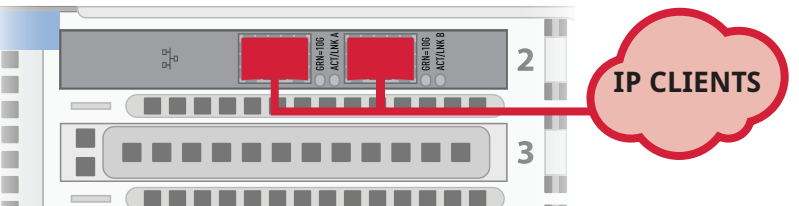## Ethernet, Infiniband and Fibre Channel Connections

The server nodes have different network and Fibre Channel connection options depending on the expansion cards installed, and also determines the number of configurable network ports available on the system. Here is some information about the Xcellis Workflow Extender support and connections:
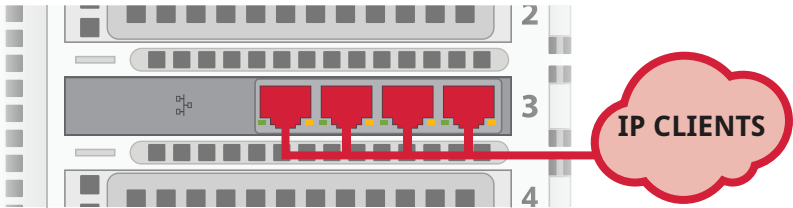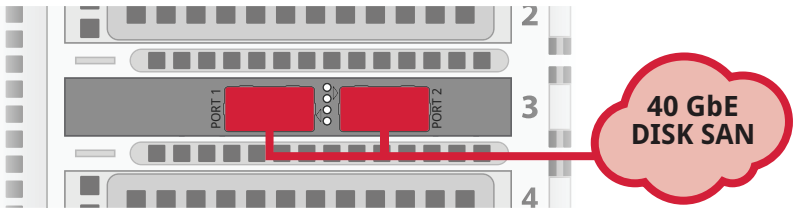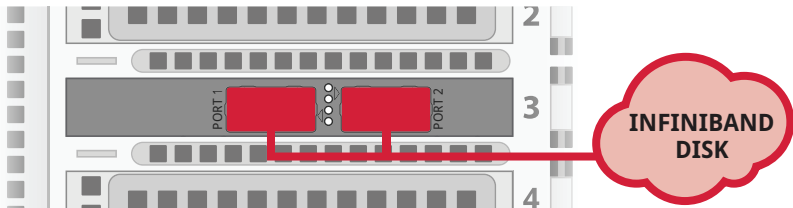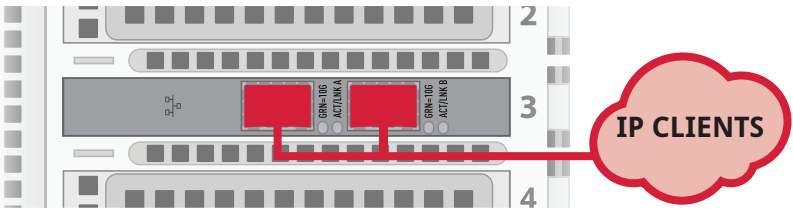
- The system is NAS-ready for SMB or NFS access to different levels of tiered storage from StorNext Storage Manager-managed tape archives to extended online object storage including Lattus and Q-Cloud. NAS requires dedicated dual-port 10 GbE cards, must be licensed, and is enabled by default once licensed. Use of the NAS Command Line Interface (CLI), information about NAS clustering, NAS failover support, and many other topics about SMB and NFS NAS configurations is documented at www.quantum.com/snnasdocs.

- By default, the Service Port embedded port 1 (logical port eth0), is reserved for Quantum Service use, and cannot be configured. Embedded port 2 (logical port eth1) can be used for LAN client connections.

- All network ports, excluding the service and iDRAC ports, are customer-configurable. Instructions for changing the default configuration settings, including bonding options, are located in the "Step 3: System" section of the latest version of the *StorNext User's Guide* or in the online help in the StorNext GUI.
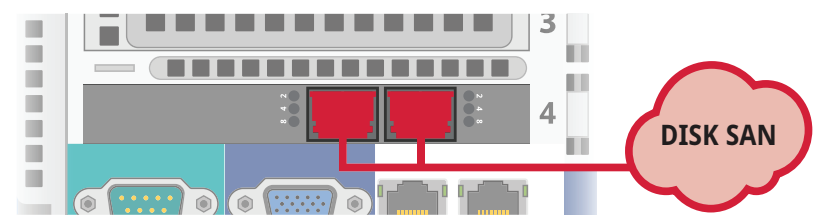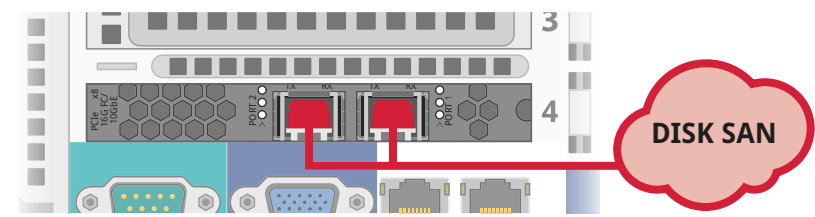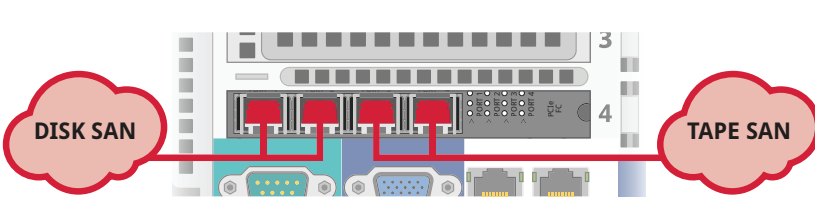
Here are the expansion card connection options, on the rear of the system, organized by the four slots available in the server:

Figure 9 Xcellis Workflow
Extender Connections

Slot	Card Description	Connection Type/Use
1	Dual-port 1 GbE NIC	
	Quad-port 1 GbE NIC	

Slot	Card Description	Connection Type/Use
2	Quad-port 1 GbE NIC	
	Dual-port 40 GbE NIC HBA	
	Dual-port 56 Gb InfiniBand HCA	
	Dual-port 10 GbE NIC	

Slot	Card Description	Connection Type/Use
3	Quad-port 1 GbE NIC	IP CLIENTS
	Dual-port 40 GbE NIC HBA	40 GbE DISK SAN
	Dual-port 56 Gb InfiniBand HCA	INFINIBAND DISK
	Dual-port 10 GbE NIC	IP CLIENTS

Slot	Card Description	Connection Type/Use
4	Dual-port 8 Gb Fibre Channel	
	Dual-port 16 Gb Fibre Channel	
	Quad-port 16 Gb Fibre Channel	

Fibre Channel Zoning

Each Fibre Channel port supports dual-port tape drives and libraries. StorNext SAN clients should not be zoned to access the tape drives/libraries unless they are acting as a Distributed Data Mover host.

Separate Fibre Channel zoning is required for tape and disk. For quad-port FC cards, if the system has a tape library, use FC ports 1 and 2 for disk, and FC ports 2 and 3 for tape. The actual zoning configuration for these devices is dependent on variables such as the Fibre Channel switch vendor, the WWPN of the HBA ports, and the external hardware.

Relocating the System

If you ever need to relocate the system to a different location, please contact Quantum Customer Support for additional information. The system must be relocated by a qualified Quantum field service engineer.

Chapter 3
Basic System Operations

This chapter is divided into the following sections:

Power On the Xcellis Workflow Extender

To power on the system:

1 Push the power switch on the front of the system(see on page 30).

Figure 10 Turning On
SystemPower

Front of the System

Power Button
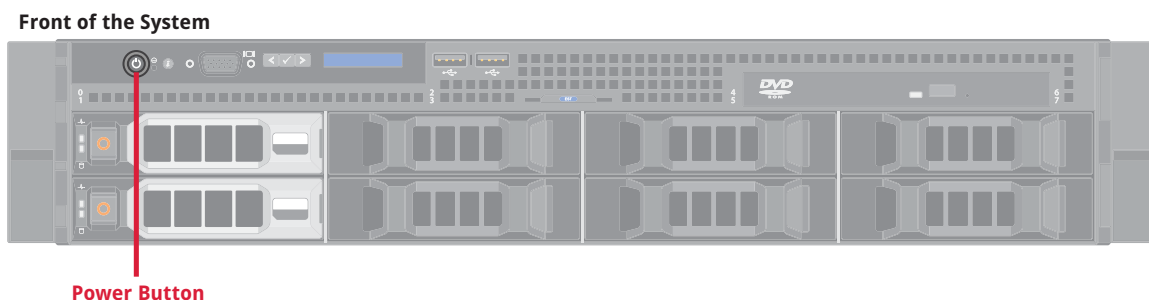
2 On each LAN client, mount the file systems on clients.

3 Restart I/O access to all LAN clients.

Shutting Down the Xcellis Workflow Extender

Prerequisites

Before shutting down the system:

1 Halt I/O access to all LAN clients.

2 On each LAN client, unmount the file systems on the clients to avoid stale mount point messages.

> **Note:** Step 2 is only required when a single Xcellis Workflow Extender is powered off and it is the only Xcellis Workflow Extender in use in the StorNext network. Powering off a single gateway when two or more Xcellis Workflow Extenders are in use in the StorNext network allows uninterrupted client access to File Systems due to system redundancy, and does not require client file systems to be unmounted.

To shut down the system:

1 Open an SSH connection to the using IP address **10.17.21.1** on either the Metadata or LAN Client network.

> **Note:** Use the IP address assigned if different from the default used here.

2 Enter for the username at the prompt.

3 Enter the password for the user account.

4 At the command prompt enter the following to gain root user access:

```
sudo rootsh
```

5 Enter the password for the user account again when prompted.

6 Press Enter.

7 Enter the following:

```
service cvfs fullstop
```

8 Enter the following:

```
/sbin/poweroff
```

> **Note:** You will know the system is shut down when your monitor goes blank, or you lose your connection with the system.

Upgrade Xcellis Workflow Extender Firmware

The Firmware Upgrade option available in the command line **Service Menu** allows you to perform a firmware upgrade on the system. Depending on the version being applied, the firmware upgrade includes updates to the firmware running on the server (if applicable), the server operating system (if applicable) and StorNext software.

See the current *Release Notes* for your system for instructions on how to apply the firmware upgrade to the system:

www.quantum.com/xcelliswfedocs

Obtain and Install StorNext Licenses

Obtain StorNext Licenses

Some StorNext feature licenses are pre-installed on your system, and others must be purchased and then enabled by installing a license file on the system. If your system is using a 30-day auto-generated license, you should enter permanent licenses as soon as it is convenient, so that the maintenance expiration date for the licenses is set correctly on the system.

Your Installation Coordinator should have provided permanent licenses for your customer's installation. If you need license keys for StorNext features or capacity, enter the required information about your system at:

http://www.quantum.com/ServiceandSupport/License/StorNext/Index.aspx

In order to receive a license.dat file, you will need the following:

- The System Serial Number. (Use this in the "Product Information, Serial number of the Original Media" section of the form)

  System serial numbers are alpha-numeric. (Example: SV1728CKH02059)

- If you don't have the StorNext serial number, you can use the StorNext serial number instead. If you are adding to an existing StorNext installation and cannot locate the serial number, you can find it in the `license.dat` file. The file can be found on the at **/usr/cvfs/config/license.dat**. Open your current `license.dat` file and locate the serial number.

  Example:

  `# Serial Number:        Q8574321`

- The `cvfsid` string for each .

  Example:

  `ECF4BCEECC0E linux 0 xcellis13`

- A list of StorNext features already licensed and enabled on your system.

- A list of purchased StorNext add-on features for which you wish to enable licenses.

  After you request licenses for the system, your Quantum representative will send you a **license.dat** file (which contains license keys for the products/features to be enabled on the system). Save the file to a temporary location to apply to the system.

Note: At this point, you will need to access the system via an SSH session. You can connect to the system remotely, or you can directly connect to the system (using instructions in the next 2 sections). Even if you remotely connect via SSH, you will still need to be at the system to insert a thumb drive or DVD with the license file.

How to Configure the Laptop Network Settings

In order to access the system from the Service Port, you will need to configure the network settings on a laptop as follows:

Note: This procedure assumes you are running Windows 7 on the laptop. The steps will be different if you are using another operating system, or a different version of Windows.

Note: You may also be able to access the system within the metadata network from a laptop. In this case, skip this procedure, and instead use the StorNext Management (public) or LAN Client network settings instead of the IPs listed in Step 4. Then connect to the system.

1 Access the **Network Connections** dialog:

a Press the Windows key on your keyboard or click the Start Menu icon on your desktop.

b Type **View Network Connections** in the search box and click Enter. Select the **View Network Connections** option when shown.

2 Right-click the network connection that corresponds to the Ethernet port on the computer (for example, Local Area Connection) and select **Properties**:
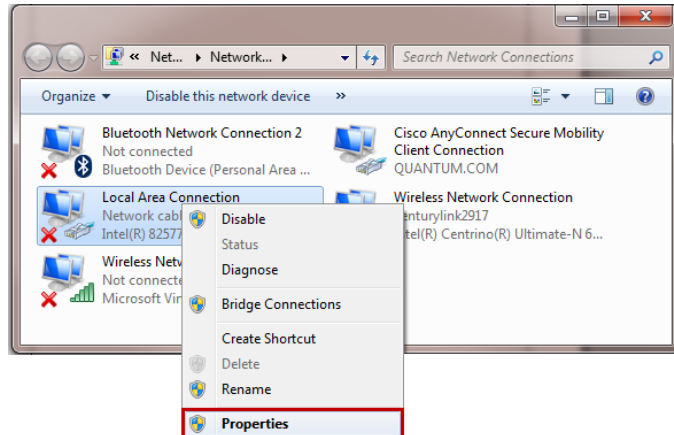
3 Select **Internet Protocol Version 4 (TCP/IPv4)** in the list of connections, and then click **Properties**. The Internet Protocol Version 4 (TCP/IPv4) Properties dialog displays:
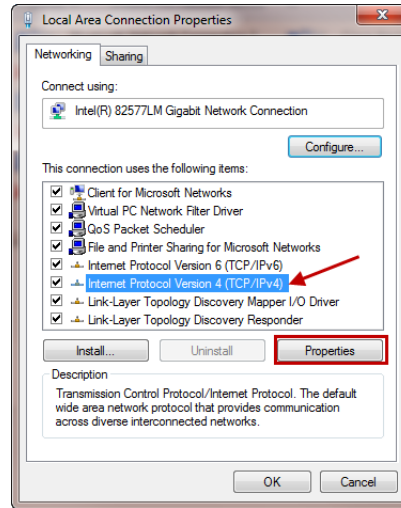
4 Click the radio button next to **"Use the following IP address"** and enter the following:

Note: It's a good idea to copy down the settings in this dialog before you change them, so that you can set them back to their original values once you are done using this local network connection.

- IP address - **10.17.21.00**
- Subnet mask - **255.255.255.0**

5 Click **OK**.

6 Click **Close**.

7 Wait at least two minutes for the laptop to enable the network connection.

Access the Service Menu via the Service Port

About the Service Port

The system contains an integrated 1GbE Ethernet port that is dedicated for Service access, called the Service Port. The Service Port on the system is configured with unique a factory-set IP address. The default IP address is (Use the IP address assigned within the MDC or LAN Client network if different from the default used here):

10.17.21.1

Use the integrated 1GbE **Service Port** (eth0) to directly access the command line and **Service Menu** functions directly.

Access the Service Menu

To access the **Service Menu**:

1 Open an SSH connection to the using IP address **10.17.21.1** on either the Metadata or LAN Client network.

> **Note:** Use the IP address assigned if different from the default used here.

2 Enter for the username at the prompt.

3 Enter the password for the user account.

4 At the command prompt enter the following to gain root user access:

```
sudo rootsh
```

5 Enter the password for the user account again when prompted.

6 Press Enter.

7 Launch the **Service Menu** script by typing:

```
sh /opt/DXi/scripts/service.sh
```

The **Service Menu** displays.

Install StorNext Licenses on the Xcellis Workflow Extender

Install the file

> **Note:** You must install a StorNext license.dat file on the Xcellis Workflow Extender system during installation to use the system as a StorNext LAN or NAS Gateway and/or DDM. These licenses are not factory pre-installed.

To install the license.dat file:

1 When you receive the new `license.dat` file from Quantum, copy the file to a USB thumb drive or CD or DVD.

2 Insert the USB thumb drive, CD or DVD with the license.dat file into the USB slot or DVD drive on the system. If you have not yet established an SSH session to the system, do so at this time, using steps in the previous sections.

3 Stop StorNext services:

```
service cvfs stop
```

4 Copy the license file from the thumb drive or CD to the following directory on the system (see Move the Xcellis Workflow Extender license.dat file via remote SCP connection):

```
/usr/cvfs/config/
```

5 Start StorNext services:

```
service cvfs start
```

The system will restart the services and use the new license file.

Move the Xcellis Workflow Extender license.dat file via remote SCP connection

Use this procedure when connecting to the system remotely. This process includes moving the firmware upgrade files to the system and upgrading the system from the **Service Menu**.

> **Note:** This procedure assumes you are running Windows 7 on the laptop. The steps will be different if you are using another operating system, or a different version of Windows.

Prerequisites

1 If there are manual entries in the **/etc/fstab** file (such as NAS mount points), copy the file before upgrading to 5.3. Restore the file after the upgrade, and then restart the StorNext services to restore mount points. See known issue 60482 on page 9.

2 An scp client must be installed on the system you plan to use for remote access and configured the software for binary scp file transfers.

   Examples:

   • WinSCP - Open WinSCP, choose the Stored sessions option and select the session used for connecting to the MDC node. Click the Edit button, select SCP in the Protocol > File protocol section. Next, click Preferences, then click the Preferences button, click Transfer, and select the option for "Binary (archives, doc,...)" in the Transfer Mode section, click OK, then click Save to save the settings.

   • PuTTY pscp.exe (Secure Copy client)

3 The license.dat file has been acquired from Quantum and is available on the computer you will use to remotely access the system.

Transfer the license.dat file to the system

If accessing the system remotely, the license.dat file must first be transferred to the correct location on the system before it can be applied to the system. This is a 2-step process for remote connections to the system. The files must first be moved to a directory accessible via an SCP connection on the StorNext public network. Then, after logging in as the root sh user, you will move the license file to the directory on the

system used by the **Service Menu** to apply the license. The following is the procedure to move the files to the temporary location on the server.

Note: If you have a copy of WinSCP, or a similar Windows SCP client, you can copy firmware filesto the `/home/stornext` directory on the system using the options available in your client. Continue to

---

Note: This procedure assumes you have **PuTTY SCP** installed.

---

1 Open a command prompt (from the Windows Start Menu, type `cmd` in the search field and click **Enter**).

2 Enter the following (the default installation location for **PuTTY pscp.exe** is used in the first argument):

```
"C:\<path to pscp.exe>\pscp.exe" C:\<local directory to
copy>\license.dat stornext@<host server>:/home/stornext
```

Example:

```
"C:\Program Files (x86)\PuTTY\pscp.exe" C:\temp\license.dat
stornext@suppgate2.dnw.quantum.com:/home/stornext
```

3 When prompted, enter the password for the stornext user account on the system.

Example:

```
stornext@suppgate2.dnw.quantum.com's password:
```

The .fw files are transferred to the system.

Move the license.dat file to the license directory

1 Open an SSH connection to the system using IP address **10.17.21.1** StorNext public (management), Metadata or LAN client network.

> **Note:** Use the IP address assigned if different from the default used here.

2 Enter **stornext** for the username at the prompt.

3 Enter the password for the **stornext** user account. The default password is "password", but may have been changed after initial configuration.

4 At the command prompt enter the following to gain root user access:

```
sudo rootsh
```

5 Enter the password for the **stornext** user account again when prompted.

6 Press Enter.

7 Enter **stornext** for the username at the prompt.

8 Enter the password for the **stornext** user account. The default password is "password", but may have been changed after initial configuration.

9 At the command prompt enter the following to gain root user access:

```
sudo rootsh
```

10 Enter the password for the **stornext** user account again when prompted.

11 Press Enter.

12 Copy the license.dat file from **/home/stornext** to **/usr/cvfs/config**:

```
cp /home/stornext/license.dat /usr/cvfs/config/
```

or move the file:

```
mv /home/stornext/license.dat /usr/cvfs/config/
```

Install and Configure StorNext NAS

Here is the StorNext/NAS install/upgrade flow for an operational Xcellis Workflow Extender system

1 Install the StorNext NAS license (the license.dat file must include the NAS license) via the Xcellis Workflow Extender command line. (See Obtain and Install StorNext Licenses on page 33.)

2 Configure NAS on the Xcellis Workflow Extender using instructions under the **Configure NAS** menu in the *StorNext NAS Documentation Center* at www.quantum.com/snnasdocs.

System Serial Numbers and Service Tag

The Xcellis Workflow Extender system serial number and the service tag number may be needed when contacting Quantum Support.

Locating the System Serial Number

The System Serial Number is located in the following locations:

- In a sleeve on the back of the system

- .Scrolling on the LCD panel on the front of the system.

- thesystemAnother way to locate the system serial number is from the GUI of a StorNext MDC in the same metadata network as the Xcellis Workflow Extender. Select **Help > About > Gateways**. Serial numbers for all active Gateway systems are located on this tab.

System serial numbers are alpha-numeric (example: CX1234CKD5678).

Locating the Service Tag Number

The Service Tag Number is located on the service tag, which is located on a pullout tab on the front of the Xcellis Workflow Extender.

Enabling the Gateway Feature

If you have purchased and installed a Gateway license for your Xcellis Workflow Extender system, you will need to configure this feature. Here's how:

Note: If you have not installed the license.dat file with this purchased StorNext feature, see Obtain and Install StorNext Licenses on page 33)

To configure the Xcellis Workflow Extender to function as a StorNext LAN Gateway:

1 Start an SSH session for the system. Log into the system with user name: **stornext** and password: **password** (defaults, use the password for your stornext account if different from the default).

2 At the command prompt of the system, enter:

```
sudo rootsh
```

3 Enter the **stornext** password a second time.

4 At the command prompt, enter:
```
/usr/cvfs/bin/sndpscfg -e
```

5 Select an appropriate interface and set tuning parameters. This creates or updates **/usr/cvfs/config/dpserver**.

6 Edit the **/usr/cvfs/config/sngateway_config** file with the following values:

Note: Use the IP addresses of the servers that will collect and process the gateway metrics when populating the `web_service_host_1` and `_2` values. These statistics are displayed in the Gateway Metrics Report in the StorNext GUI of the active StorNext server node referenced in this file.

---

   a Add the IP address for server node 1 to `web_service_host_1=`

   b Add the IP address for server node 2 to `web_service_host_2=`

   Example:

   `web_service_host_1=10.20.79.30`

   `web_service_host_2=10.20.79.31`

7 Edit the **/etc/fstab** file. Add the following to the mount option on the file system to be used as the gateway:

`diskproxy=server`

For example, a file system mount option of:

`snfs1 /stornext/snfs1 cvfs rw 0 0`

Becomes:

`snfs1 /stornext/snfs1 cvfs rw,diskproxy=server 0 0`

Note: If the file system being configured is a managed file system, stop the TSM processes before unmounting the file system. At the command prompt, type:
`TSM_control stop`

---

8 Un-mount and re-mount the file system.

At the command prompt, enter:

```
umount /<directory path for file system>
mount <file system name>
```

Example:

```
umount /stornext/snfs1

mount snfs1
```

Verify that the file system is mounted and that the **diskproxy=server** mount option is present.

Example output:

```
/dev/cvfsctl2_snfs1 on /stornext/snfs1 type cvfs
(rw,diskproxy=server,sparse=yes)
```

10 If the TSM processes were stopped, restart the TSM process. At the command prompt, type:

```
TSM_control start
```

Enabling the DDM Feature

To enable the Distributed Data Mover (DDM) feature on the Xcellis Workflow Extender system, you will need to add it as a DDM host in StorNext.

Adding a Host

1 If you have not already done so, navigate to **Tools > Storage Manager > Distributed Data Mover**.

2 Click **New**. You will see something similar to the following:

3 At the **Host** field, enter the host name you are adding.

4 Enter the remaining fields in the upper portion section of the screen:

- **Enabled**

- **Mover Threshold**

- **Maximum Movers (Active)**

- **Maximum Movers (Client or Standby)**

For information about what to enter at these fields, see the online help.

5 Under the corresponding headings, select **Configure** and/or **Enable** for the **Managed File Systems**, **Tape Drives** and **Storage Disks** you want to include in DDM processing.

6 To add your selections to the new host, click **Apply**. (To exit without saving, click **Cancel**. To remain on the screen but clear your entries, click **Reset**.)

7 When the confirmation message appears, click **Yes** to proceed or **No** to abort.

8 After a message informs you that your changes were successfully saved, click **OK** to continue.

Adding or Removing File Systems After Initial Configuration

If you need to add or remove file systems after the initial configuration of your Xcellis Workflow Extender, a wizard in the **Service Menu** will step you through the process.

To add or remove a file system after initial configuration:

1 Add a new file system in StorNext. Refer to the "The StorNext Configuration Wizard" section in the latest version of the *StorNext User's Guide* for instructions on configuring your file system.

2 Open an SSH connection to the system via the IP address of the LAN client interface.

3 Log on using the "install" credentials and the password "password". You will automatically be taken to the install wizard for configuration.

4 From the Service Menu, type **0** to invoke the Install Wizard. The Install Wizard Menu displays.

5 Select **1** for the **Advanced Settings** option. The Advanced Settings Menu displays.

```
 *** Advanced Settings Menu ***
0) Update Filesystem list          - Update list of filesystems
                                     exported by the gateway.
1) Configure fsports settings      - Constrain the StorNext TCP and
                                     UDP port usage.
2) Update MDC and nameservers      - Update the MDC IPs and FS
                                     nameserver IPs.
3) Update GW Client interface list - Update the Gateway client
                                     interface list.
4) Update Gateway software    >>>- Upgrade the StorNext Gateway
                                     software version on the gateway.
5) Change user password            - Sets the password for the
                                     stornext and install users.
6) Set Date/Time                   - Sets date and time of the system.
7) Advanced Network Setup     >>>- Allows advanced configuration of
                                     network ports.
8) Display Configuration Settings  - Display configuration
                                     settings.
9) Activate StorNext Settings      - Apply all StorNext settings
```

6 Select **0** for the **Update Filesystem list** option. The Select Filesystems to be Mounted Menu displays.

7 Select the file system you want to configure in StorNext.

Note: An * (asterisk) denotes that a file system is selected. You can toggle to select or delete any file system.

```
 *** Select Available Filesystems ***
NOTE: If an item has '{*}' next to it, then it is currently selected
0) carnage_FS1
Each selection can be toggled on and off by entering the number of
the item.
When all selections are made, enter 's' to save the selections or
 'q' to exit.
```

8 Enter **s** to save your settings. The Advanced Settings Menu re-displays.

9 Select **9** for the **Activate StorNext Settings** option. StorNext restarts automatically.

Note: If you want a multi-mount environment, in StorNext, you will need to make sure that the FSnameserver file matches across all machines on the SAN, including the Xcellis Workflow Extender. Refer to the "The StorNext Configuration Wizard - System" section in the latest version of the *StorNext User's Guide* for instructions on configuring your file system.

Chapter 4
Contacting Quantum

More information about StorNext is available on the Quantum Service and Support website at http://www.quantum.com/ServiceandSupport. The Quantum Service and Support website contains a collection of information, including answers to frequently asked questions (FAQs).

StorNext Appliance Upgrades

To request a StorNext software upgrade for StorNext Appliances, open a support ticket at: www.quantum.com/customercenter/. For further assistance, or if training is desired, contact the Quantum Technical Assistance Center.

Contacts

Quantum company contacts are listed below.

Quantum Home Page

Visit the Quantum home page at:

http://www.quantum.com

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Other numbers available at:

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