



Hardware Guide

StorNext G300 R510 Gateway Appliance



Quantum StorNext G300 R510 Gateway Appliance Hardware Guide 6-67610-01 Rev E, May 2016.

Product of USA.

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Chapter 1

Introduction

What's New in the G300 R510 Hardware Guide

Revision E updates

The following information is provided in this revision:

- Since the firmware upgrade procedure will be updated more frequently in G300 Release Notes, updated the firmware upgrade section to point to the G300 Release Notes. See [Upgrade G300 Firmware](#) in [Basic System Operations](#).
- Added a section for StorNext licenses. See [Obtain and Install StorNext Licenses](#) in [Basic System Operations](#).
- Added a reference for getting the instructions to install and configure StorNext NAS on the G300. See [Install and Configure StorNext NAS](#).

How this Guide is Organized

This guide describes how to identify and operate the key features of the hardware components of the StorNext G300.

Guide 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 StorNext G300.
- [Chapter 3, Basic System Operations](#) provides basic operating instructions for the StorNext system.
- [Chapter 4, Contacting Quantum](#) - provides contact information for the Quantum Technical Assistance Center.

Chapter Contents

- [Navigating This Document With Adobe Reader](#) — explains how to navigate this document with Adobe Reader.
- [About the StorNext G300 Hardware](#) on page 3 — provides an overview of the system hardware.
- [Writing Conventions](#) on page 6 — provides information about the conventions used in the document.
- [Supported Internet Browsers](#) on page 8 — provides the location where the supported Internet Browsers list is located.
- [Product Safety Statements](#) on page 8 — provides multi-lingual safety and regulatory statements.

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 StorNext G300 Hardware

About the StorNext G300 Gateway Appliance

The StorNext G300 Gateway Appliance combines industry-proven Quantum hardware and StorNext software into one convenient, out-of-the-box solution. The G300 Gateway Appliance operates as a SAN Client in a StorNext Metadata Network, providing LAN client access to the StorNext disk SAN.

Your StorNext G300 system hardware has been pre-installed and is ready to operate with a minimum of additional configuration required at time of installation.

StorNext G300 models:

- StorNext G301
- StorNext G302

Note: At times this document uses StorNext G300 as a generic term that applies to the StorNext G301 and G302 models. When information pertains only to a specific StorNext G300 model, those differences are noted.

Hardware Specification

The StorNext contains the following:

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

Determining Server Type By Serial Number

You can also distinguish which server is included in the appliance by serial number format:

- The R510 server contains the serial number format **CPA**, for example, CX1111**CPA**22333.

- The R520 server contains the serial number format **CKE**, for example, CX1313**CKE**22333.

Network Connectivity

Here are the quantity and type of network cards and ports available on the different system models:

- The G300 features one 2-port 8 Gb FC card .
- The G301 ships with two 4-port PCIe expansion cards in slots which each provide four 1 GbE Ethernet ports. Since there is also one embedded 1 GbE port, there are a total of nine configurable 1 GbE ports on the system.
- The G302 ships with one 2-port PCIe expansion card which provides two 1 GbE Ethernet, and one 2-port PCIe expansion card which provides two 10 GbE Ethernet ports. The embedded 1 GbE port (Eth1) on the G302 system is not configurable and remains unused.

The StorNext can also come configured as a Base System with an Expansion , or the Expansion can be added to the system in the field. The Expansion adds additional disks to the .

StorNext G300 Gateway Appliance Licensing

There are several items to note about the Gateway Appliance license used on the G300 Gateway Appliance:

- The StorNext G300 Gateway Appliance has a “per Gateway” DLC license model. This license allows you to add clients without having to purchase additional individual licenses.
- For new customers with no existing StorNext components, the license comes from the factory pre-installed and enabled for use on a new G300 Gateway Appliance.
- If you choose to install the StorNext G300 Gateway Appliance into the same StorNext network as a customer-configured DLC gateway, you will be limited to the existing DLC client license count.
- The Gateway Appliance license is populated on the StorNext G300 in the **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 G300. Click the **Connected Licensed Gateways** link 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.

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 G300 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 <http://www.quantum.com/sngatewayhowtos>

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 *StorNext Licensing Guide* for a description of the types of licenses and procedures for obtaining them.

About StorNext Features

This guide includes information about StorNext features that may not initially apply to your StorNext G300, but that could be pertinent in the future.

The StorNext G300 is not designed for deduplication, so the standard StorNext deduplication license is not supported with the StorNext G300.

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 <i>italic</i> are variables and should be replaced with user-defined values.	cvaffinity <i>filename</i> where <i>filename</i> 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
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

StorNext Documents

A complete list of documentation for the StorNext G300 Gateway Appliance is located on the following web page:

<http://www.quantumcom/sngatewaydocs/>

Supported Internet Browsers

The Internet browser software is not supplied with the StorNext G300; you must obtain and install it independently. Refer to the *Quantum StorNext Compatibility Guide* for the complete list of browsers supported by StorNext.

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

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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 Guía informativa sobre sistema, seguridad y normas.

WARNING 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

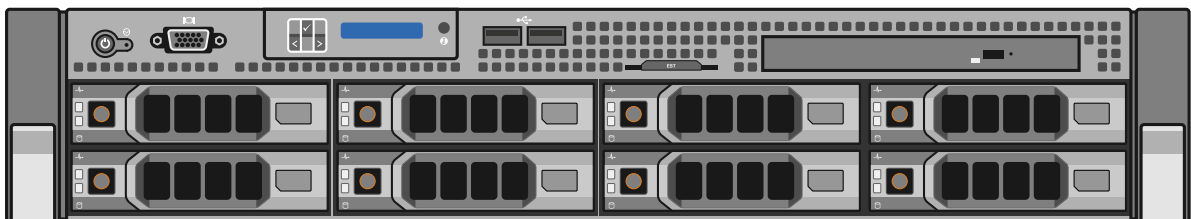
This chapter contains the following sections:

- [The StorNext G300 System](#)
- [StorNext G300 Connectivity](#) on page 21
- [Relocating the System](#) on page 28

The StorNext G300 System

[Figure 1](#) shows the StorNext G300 System.

Figure 1 StorNext G300
System - (Front)



StorNext G300 System

The StorNext G300 provides SAN access to StorNext LAN Clients. The MDC Nodes contain redundant hard drives in a RAID 1 configuration, ensuring high availability of the system software.

System Front View

[Figure 2](#) shows, and [Table 1](#) describes the indicators and buttons on the front of the StorNext G300 Gateway Appliance.

Figure 2 StorNext G300
System – Front View

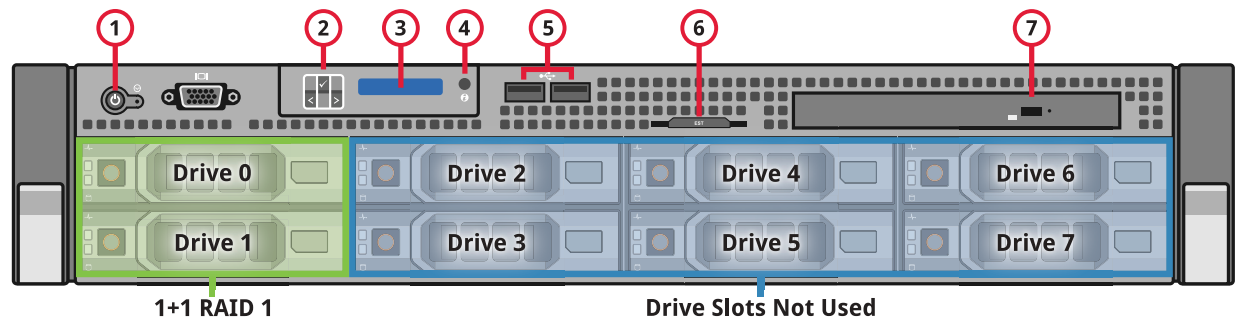





Table 1 StorNext G300 – Front View Indicators and Buttons

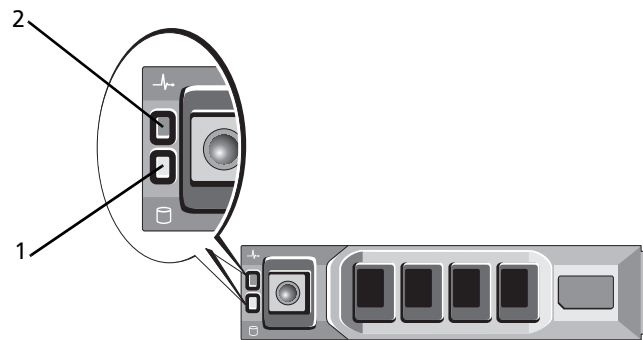
Item	Indicators, Button, or Connector	Icon	Description
1	Power-on indicator/ power button		<p>The power-on indicator lights when the system power is on.</p> <p>The power button controls the power supply output to the system. When the system bezel is installed, the power button is not accessible.</p> <p>Note: To perform a graceful shutdown, press and release the power button.</p> <p>Note: To force an ungraceful/hard stop shutdown, press and hold the power button for 5 seconds.</p>
2	LCD menu buttons		Allows you to navigate the control panel LCD menu
3	LCD panel		<p>Provides system ID, status information, and system error messages</p> <p>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.</p> <p>The power-on indicator lights when the system power is on.</p> <p>The power button controls the DC power supply output to the system. When the system bezel is installed, the power button is not accessible.</p>
4	System identification button		<p>The identification buttons on the front and back panels can be used to locate a particular system within a rack.</p> <p>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.</p>
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
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 [Hard Drive Indicator Patterns](#) on page 14.

Figure 3 StorNext G300 –
Hard-Drive Indicator Patterns



- 1 Hard-drive activity indicator (green)
- 2 Hard-drive status indicator (green or amber)

Table 2 StorNext G300 – Hard-
Drive Activity and Status
Indicators

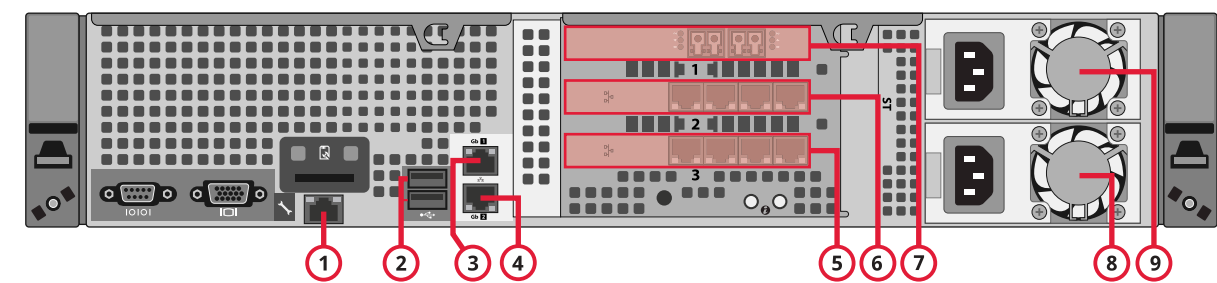
Drive-Status Indicator Pattern (RAID Only)	Condition
Blinks green two times per second	Identify drive/preparing for removal.
Off	Drive ready for insertion or removal. Note: When system power is applied, the drive status indicator remains off until all hard drives are initialized. Drives are not ready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

System Rear View

The back of each StorNext G300 system has a series of indicators, connectors, and buttons. Unlabeled indicators, connectors, and buttons are reserved for Quantum Service.

The rear indicators, connectors, and buttons of the system are shown in [Figure 4](#).

Figure 4 StorNext G301 – Rear View



[Figure 5](#) shows the rear indicators, connectors and buttons of the StorNext G302system. See [Table 3](#) for information on the labeled components.

Figure 5 StorNext G302 – Rear View

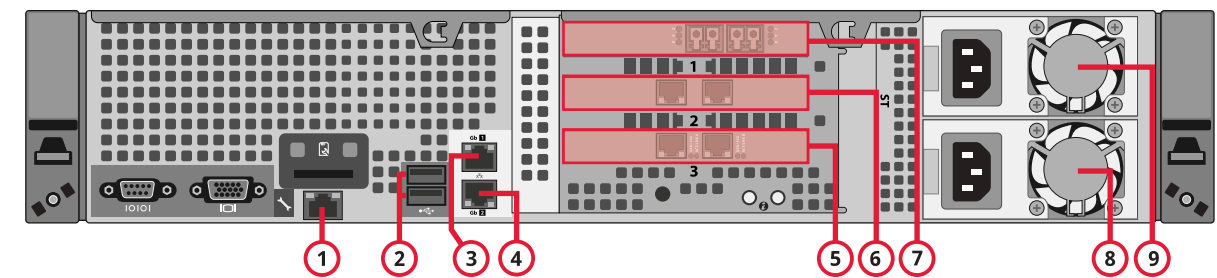









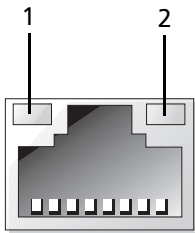
Table 3 StorNext G302 – Rear
Panel Features and Indicators

Item	Indicator, Button, or Connector	Icon	Description
1	iDRAC Enterprise port		Reserved for Quantum Service
2	USB ports (2)		Connect USB devices to the system (ports are USB 2.0-compliant)
3	Service Port (Eth0)		Reserved for Quantum Service
4	Embedded Ethernet Port (Eth1)		<p>G301 - Embedded 10/100/1000 NIC port - can provide access to the LAN client network.</p> <p>G302 - This port is not configurable, and is not recognized as an active port by the Linux OS, so it cannot be used by the system. This port is a 1 GbE port, so it cannot be bonded with the 10 GbE ports used for the LAN client network.</p>
5	Ethernet HBA (Eth6 - Eth9) (PCIe Slot 3)		<p>G301 - 4-port 1 GbE NIC card - provides access to the MDC network (ports 3 and 4) and LAN client networks (ports 5 and 6)</p> <p>G302 - 2-port 10 GbE NIC card - provides access to the LAN client networks (ports 5 and 6)</p>
6	Ethernet HBA (Eth2 - Eth5) (PCIe slot 2)		<p>G301 - 4-port 1 GbE NIC card - provides access to the LAN client network (ports 7 through 10)</p> <p>G302 - 2-port 1 GbE NIC card - provides access to the MDC network (ports 3 and 4)</p>
7	Dual port 8Gb FC HBA (PCIe Slot 1)		These ports provide access to the SAN Network to StorNext Storage.
8	Power supply 2 (PS2)		750 W redundant power supply
9	Power supply 1 (PS1)		750 W redundant power supply

NIC Indicator Codes

[Figure 6](#) shows the StorNext G300 NIC indicator codes.

Figure 6 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 (10/100 Mbps).
Activity indicator is blinking green.	Network data is being sent or received.

Power Supply Indicator Codes

This section describes the StorNext G300 power supply indicator codes (see [Figure 7](#)). The power supply indicators show if power is present, or if a power fault has occurred.

Figure 7 Power Supply Indicator

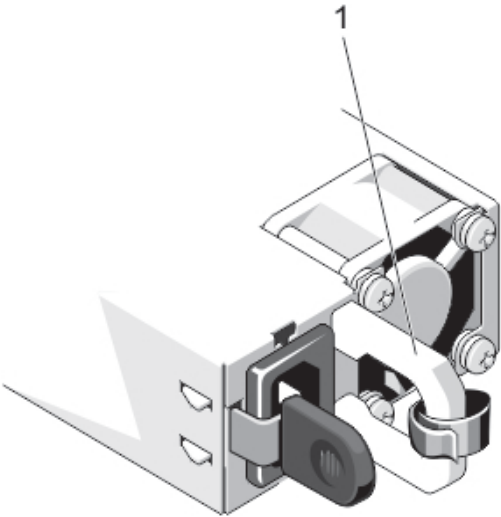


Table 4 Power Supply Status Indicator

Indicator Status	Indicator Code
Not lit	AC power is not connected.

Indicator Status	Indicator Code
Green	<p>The handle displays green which indicates that a valid power source is connected to the power supply and that the power supply is operational. In standby mode, a green light indicates that a valid AC source is connected to the power supply, and that the power supply is operational.</p> <p>When the system is on, a green light also indicates that the power supply is providing DC power to the system.</p>
Amber	<p>Indicates a problem with the power supply.</p>
Alternating green and amber	<p>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.</p>

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.

StorNext G300 Connectivity

This section covers:

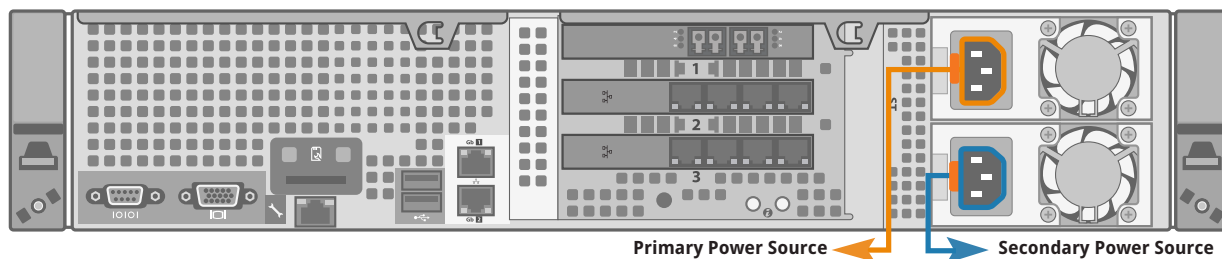
- [Power Cable Connections](#)
- [LAN/NAS Cable Connections](#)
- [Fibre Channel Cable Connections for SAN Access](#)

Power Cable Connections

Connect the power cables for each component into an available power outlet as shown here (see [Figure 8](#) on page 22).

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.

Figure 8 Power Connections



LAN/NAS Cable Connections

The system also contains an iDRAC port and a dedicated service port. By default, each StorNext G300 ships with bonded network interface: Bond 0. All network ports, excluding the service and iDRAC ports, are customer-configurable.

The default G300 network interface configuration is as follows:

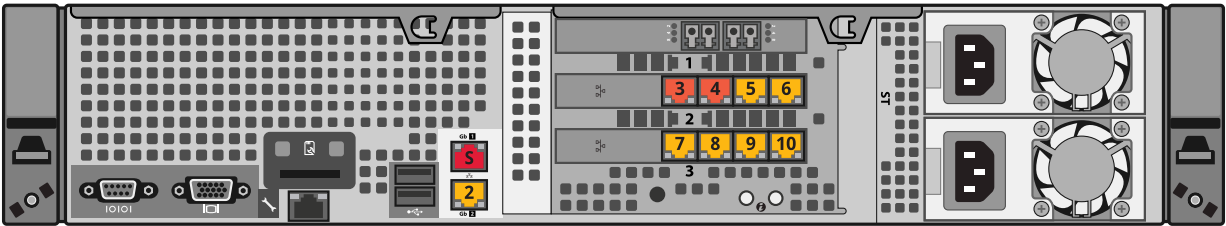
- For the StorNext G301, the MDC network is always a bonded (Bond 0) network.
- For the StorNext G301, ports on LAN client network must be either ALL bonded together (Bond 1) or ALL configured with individual network interfaces, and NOT a combination of both. Physical ports 3 and 4 are dedicated to the MDC network. Ports 5 through 10 are dedicated to the LAN client network. When bonded, the LAN client network includes the on-board embedded Ethernet port 2 for a total of 7 network ports.
- In addition to providing LAN access, the G300 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 StorNext 5 Release 5.2.0.2 or later and a 10 GbE NIC in each Node. NAS is enabled via the appliance **Service Menu**. Use of the NAS CLI is documented in the *StorNext Appliances NAS Configuration Guide* (P/N 6-68284).

[Figure 9](#) shows the customer-facing Ethernet ports on the StorNext G301.

G301 Network Ports

Figure 9 G301 Network Ports



[Table 5](#) identifies the logical port configuration, port function and default bonding for the StorNext G301.

Table 5 Network Configuration

Physical Ethernet Port Number	Logical Ethernet Port Number	Port Physical Location	Port Function	Network Bonds
5	eth0	Embedded Port 1	Reserved for Quantum Service	n/a
2	eth1	Embedded Port 2	LAN Client Network (1 GbE)	Bond 1 – This port can be bonded alongside the other LAN client ports (Eth6 - Eth11) or configured as a standalone port. ALL connected LAN ports must be bonded together OR not bonded and assigned individual IP addresses.
3	eth2	PCle Slot 2 Port 1	Metadata Network (1GbE)	
4	eth3	PCle Slot 2 Port 2	Metadata Network (1GbE)	Bond 0 - The MDC network is always a bonded (Bond 0) network. The customer doesn't have the option to break the bond.
5	eth6	PCle Slot 2 Port 3	LAN Client Network (1 GbE)	
6	eth7	PCle Slot 2 Port 4	LAN Client Network (1 GbE)	Bond 1 – The default is for all the LAN client ports to be bonded. ALL connected LAN ports must either be bonded together (Bond 1) OR not bonded and assigned individual IP addresses.
7	eth8	PCle Slot 3 Port 1	LAN Client Network (1 GbE)	
8	eth8	PCle Slot 3 Port 2	LAN Client Network (1 GbE)	
9	eth10	PCle Slot 3 Port 3	LAN Client Network (1 GbE)	
10	eth11	PCle Slot 3 Port 4	LAN Client Network (1 GbE)	

G302 Network Ports

The default StorNext G302 network interface configuration is as follows:

- For the G302, the MDC network is always a bonded (Bond 0) network. Physical ports 3 and 4 are dedicated to the MDC network.
- The LAN client network ports must be either ALL bonded (Bond 1) or ALL configured as individual network interfaces. Physical ports 5 and 6 are dedicated to the LAN client network.
-

Figure 10 shows the customer-facing Ethernet ports on the StorNext G302.

Figure 10 StorNext Network Ports - G302

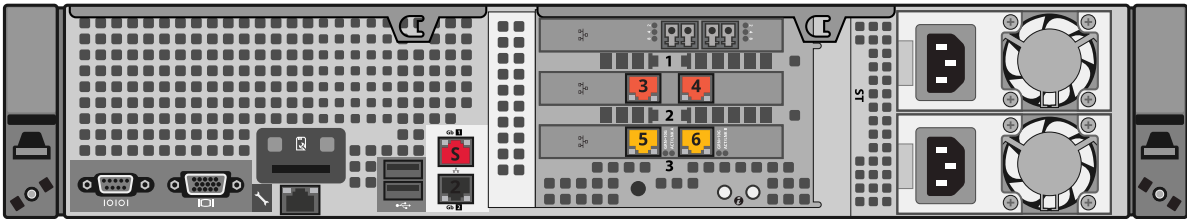


Table 6 identifies the logical port configuration, port function and default bonding for the StorNext G302

Table 6 StorNext G302 Network Configuration

Physical Ethernet Port Number	Logical Ethernet Port Number	Port Physical Location	Port Function	Network Bonds
5	eth0	Embedded Port Port 1	Service	n/a
2	eth1	Embedded Port Port 2	Unused/ Unavailable	The OS does not recognize this port as in use, so it is unused and cannot be configured nor bonded to the LAN client or MDC network.
3	eth2	PCIe Slot 2 Port 1	Metadata Network (1GbE)	Bond 0 - The MDC network is always a bonded network. These 1GbE ports and the customer doesn't have the option to break the bond.
4	eth3	PCIe Slot 2 Port 2	Metadata Network (1GbE)	
5	eth4	PCIe Slot 3 Port 1	LAN Client (10GbE)	Bond 1 – The default is for all the LAN client ports to be bonded. The ports are either bonded or given individual IP addresses.
6	eth5	PCIe Slot 3 Port 2	LAN Client (10GbE)	

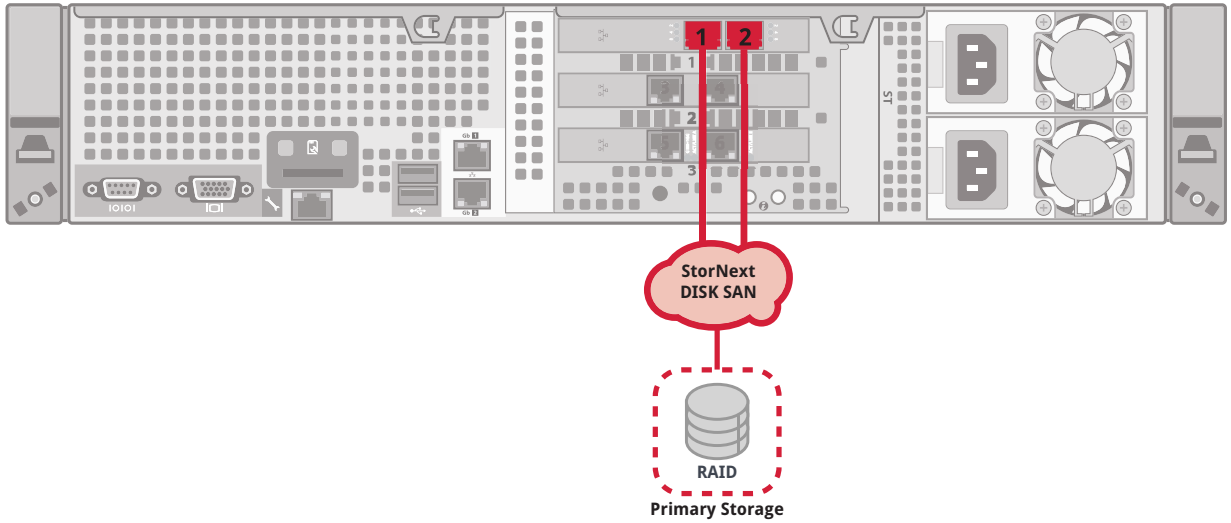
Fibre Channel Cable Connections for SAN Access

Each StorNext G300 contains one 2-port 8Gb Fibre Channel (FC) host bus adapter (HBA) card in PCIe expansion slot 3.

Note: If small form-factor pluggable (SFP) FC adapters are needed, use only Intel-based SFP adapters. SFP adapters from other vendors are not compatible with the FC HBA card used in the StorNext G300. Twinax cables have the adapters built into the end of the cable, so they do not require SFP adapters.

Connect the FC host ports to your SAN as shown in [Figure 11](#) on page 27.

Figure 11 StorNext G300 SAN Cabling



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 StorNext G300](#) on page 29
- [Shutting Down the G300](#) on page 30
- [Upgrade G300 Firmware](#) on page 32
- [Obtain and Install StorNext Licenses](#) on page 32
- [Install and Configure StorNext NAS](#) on page 38
- [System Serial Numbers and Service Tag](#) on page 39
- [Adding or Removing File Systems After Initial Configuration](#) on page 40

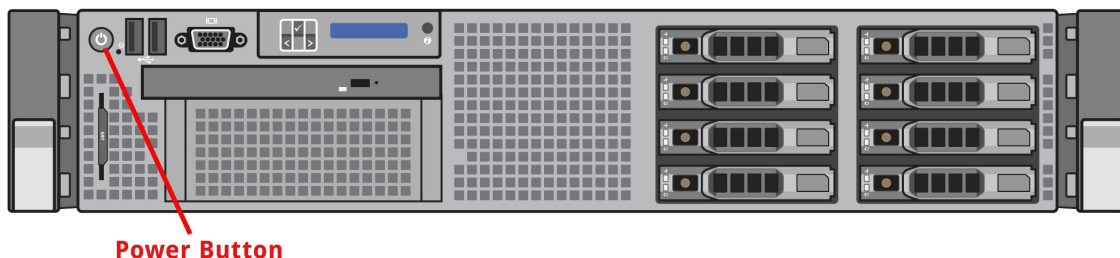
Power On the StorNext G300

To power on the system:

- 1 Push the power switch on the front of the system(see [Figure 12](#) on page 30).

Figure 12 Turning On
SystemPower

System (Front)



- 2 On each LAN client, mount the file systems on clients.
- 3 Restart I/O access to all LAN clients.

Shutting Down the G300

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 G300 is powered off and it is the only G300 in use in the StorNext network. Powering off a single gateway when two or more G300s 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 system using IP address **10.17.21.1** on either the MDC/Metadata or LAN Clientnetwork.

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.
- 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 the following:

```
service cvfs fullstop
```

- 8
- 9 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 G300 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 appliance servers (if applicable), the appliance OS (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/sngatewaydocs

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 the system .

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.

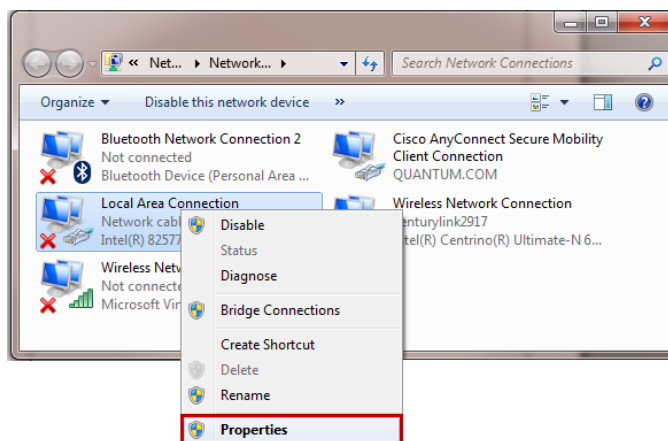
How to Configure the Laptop Network Settings

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

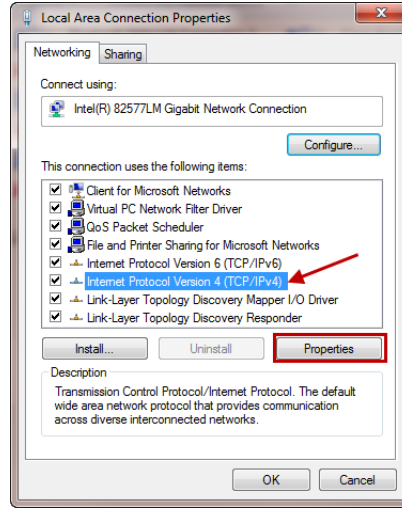
Note: This procedure assumes you are running Windows 7 on the laptop. The steps will be different if you are using another operating system, or a different version of Windows.

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:

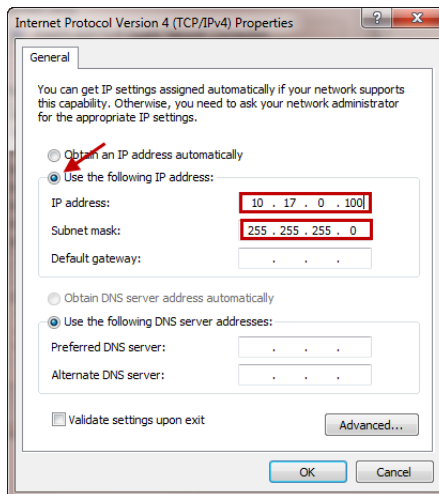


- 4 Click the radio button next to **“Use the following IP address”** and enter the following:

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 - **10.17.21.100**

- 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 system 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 **stornext** for the username at the prompt.
- 3 Enter the password for the **stornext** user account.
- 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 Launch the **Service Menu** script by typing:

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

The **Service Menu** displays.

Install StorNext Licenses

In order to install license files on the G300:

- 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 G300. If you have not yet established an SSH session to the G300, 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 G300 system:

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

- 5 Start StorNext services:

```
service cvfs start
```

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

Install and Configure StorNext NAS

Prior to StorNext 5 Release 5.3.1, StorNext NAS had to be enabled via the Service Menu. For StorNext 5 Release 5.3.0, StorNext NAS required a StorNext NAS license, and enablement of NAS in the **Service Menu**. As of StorNext 5 Release 5.3.1, while the StorNext NAS license still needs to be installed (NAS is not functional without the license), StorNext NAS no longer needs to be enabled in the **Service Menu**, and is enabled by default.

To learn how to install and configure StorNext NAS on your system, including required StorNext software upgrades, see *G300 Software Compatibility and Upgrades for NAS* at:

www.quantum.com/sngatewaydocs

System Serial Numbers and Service Tag

The StorNext G300 Gateway Appliance 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.
- From the Service Menu of the system.
- Another way to locate the system serial number is from the GUI of a StorNext MDC in the same metadata network as the StorNext G300 Gateway Appliance. Select **Help > About > Gateways**. Serial numbers for all active Gateway systems are located on this tab.

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

Determining Server Type By Serial Number

You can also distinguish which server is included in the appliance by serial number format:

- The R510 server contains the serial number format **CPA**, for example, CX1111**CPA**22333.
- The R520 server contains the serial number format **CKE**, for example, CX1313**CKE**22333.

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 Gateway Appliance.

Adding or Removing File Systems After Initial Configuration

If you need to add or remove file systems after the initial configuration of your StorNext G300 Gateway Appliance, 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 a putty or secure ssh connection to the StorNext G300 Gateway Appliance 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 StorNext G300 Gateway Appliance. 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: <https://onlineservice.quantum.com/>. 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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