Symantec NetBackup™ 5200 Series Appliance Administrator's Guide

Release 2.0

NetBackup 5200 and 5220
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Documentation version: 2.0

PN:

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Hardware information
Available memory, disk space, and NIC information
Operating system
Version and patch level
Network topology
Router, gateway, and IP address information
Problem description:
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  • Troubleshooting that was performed before contacting Symantec
  • Recent software configuration changes and network changes

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  • General product information (features, language availability, local dealers)
  • Latest information about product updates and upgrades
  • Information about upgrade assurance and support contracts
  • Information about the Symantec Buying Programs
  • Advice about Symantec's technical support options
  • Nontechnical presales questions
  • Issues that are related to CD-ROMs or manuals
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If you want to contact Symantec regarding an existing support agreement, please contact the support agreement administration team for your region as follows:

<table>
<thead>
<tr>
<th>Region</th>
<th>Email Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia-Pacific and Japan</td>
<td><a href="mailto:customercare_apac@symantec.com">customercare_apac@symantec.com</a></td>
</tr>
<tr>
<td>Europe, Middle-East, and Africa</td>
<td><a href="mailto:semea@symantec.com">semea@symantec.com</a></td>
</tr>
<tr>
<td>North America and Latin America</td>
<td><a href="mailto:supportsolutions@symantec.com">supportsolutions@symantec.com</a></td>
</tr>
</tbody>
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Overview

This chapter includes the following topics:

- About the NetBackup Appliance
- About the NetBackup appliance components
- About appliance console components
- About using Web browser bookmarks
- About the Master Server role
- About Media Server roles
- Installing NetBackup client software on clients used with appliances
- About the NetBackup appliance graphical user interface
- About the NetBackup Appliance documentation

About the NetBackup Appliance

The NetBackup Appliance version 2.0 is a NetBackup solution that simplifies the initial configuration and daily management of your backup environment. The goal is to provide a solution that eliminates the need to provide dedicated individuals to manage their backup environment.

In this release, you can determine what role you want to configure the appliance to perform. You can choose to configure your appliance as a master server appliance. You can choose to configure your appliance as a media server for use with an existing master server appliance. Or you can configure your appliance as a media server for use in an existing NetBackup environment. With each of these configurations, you get the added benefit of internal disk storage.
This appliance allows for easy expansion of existing NetBackup environments that have NetBackup 7.1 or greater installed. The appliance also includes its own browser-based interface that is based on the NetBackup OpsCenter management console. This interface is used for local administration of the network, internal disk storage, and tape libraries. If you configure the appliance as a master server appliance, you can use the interface to manage backup policies, storage lifecycle policies, and storage units.

**Note:** Currently, NetBackup appliances are supported for use only in English locales. If you attempt to use non-English Windows or UNIX clients with NetBackup appliances, backup and restore results may be unpredictable.

The NetBackup appliance supports the following features:

- 8, 16, or 32 TB of deduplication capacity per appliance. This built-in client and media server deduplication can reduce the size of the backups by as much as 50 times. It also reduces the bandwidth utilization of the backups by up to 99% versus traditional backup approaches.

- NetBackup SAN Client and Fibre Transport. SAN Client is a NetBackup optional feature that provides high speed backups and restores of NetBackup clients. Fibre Transport is the name of the NetBackup high-speed data transport method that is part of the SAN Client feature. The backup and restore traffic occurs over a SAN, and NetBackup server and client administration traffic occurs over the LAN.

- NetBackup preinstalled. Helps to simplify the deployment and can be easily integrated into an existing NetBackup environment.

- Tape out option. The appliance includes a gigabit, dual-port Fibre Channel host bus adapter (HBA).

- Hardware component monitoring. The appliance can monitor key hardware components such as the CPU, disks, memory, power supply modules, and fans. In addition, the appliance provides an optional call home feature that allows proactive monitoring and messaging of these NetBackup components.

- The appliances support all core NetBackup software agents. The NetBackup agents optimize the performance of critical databases and applications. The following agents are supported:
  - IBM DB2
  - Informix
  - Lotus Notes and Lotus Domino Server
  - Microsoft Active Directory
- Microsoft Exchange Server
- Microsoft SharePoint Portal Server and Microsoft Office SharePoint Server
- Microsoft SQL Server
- Oracle
- SAP
- Sybase
- Symantec Enterprise Vault

- Flexible hardware configuration. The appliance can be ordered in a variety of configurations to provide the necessary Ethernet ports. Two 1 GB Ethernet ports are provided on the motherboard. Expansion cards can be specified to provide additional 1GB or 10 GB Ethernet ports, in dual-port or quad-port configurations.

See “About the NetBackup appliance components” on page 14.

The following describes how you can incorporate this appliance into your current NetBackup environment:

Replace unsupported media servers
Replace an existing media server that runs on a platform that is not supported in NetBackup 7.1.

Add deduplication capability
- Add the appliance to an existing NetBackup environment or replace an existing media server that does not support deduplication.
- Add NetBackup AdvancedDisk support for faster backups.

Add more storage capability
Add storage capability to an existing NetBackup 7.1 environment.

The internal disks can be used for additional backup storage. By default, the appliance is configured for deduplication storage. You can change the configuration to AdvancedDisk storage, or partition the drives for both deduplication and AdvancedDisk storage types.

Tape backup
The appliance includes a Fibre Channel host bus adapter card for a TLD tape storage device for archive support.

This appliance contains everything you need to start using NetBackup 7.1. After you mount the appliance in a rack in your lab, you are ready to connect it and configure it to your network. After you have successfully configured your appliance, you can install and configure your media servers and clients. Once that
is done you are ready to run a backup of your environment. You can back up and monitor up to 50 clients.

About the NetBackup appliance components

You can order a NetBackup appliance that is either a 19-inch, 4U rack-mount server or a 19-inch, 2U rack-mount server.

The following describes the primary components that make up your 4U rack-mount appliance:

Server hardware configuration
- 19-inch, 4U rack-mount server with dual Intel E5620 processors
- 32 GB RAM
- LSI 8708 EM2 RAID controller
- Twenty-four 2-TB disk drives
  - Two disk drives for OS partition
  - Two disk drives for global hot spares
  - 20 disk drives for a RAID 6 data partition (32 TB formatted storage)
- 4-Gbps Dual-port QLogic QLE 2462 FC card
- Two 1 Gbps Ethernet ports (motherboard)
- Two 10 Gbps Ethernet ports (PCIe NIC)

Factory installed software
- NetBackup appliance-specific software
- NetBackup 7.1 (Enterprise Server)
- NetBackup Deduplication and AdvancedDisk storage options (associated license keys are required but are not included)
- Administrative Web user interface (UI)
- Linux operating system (provided by Symantec)
- NetBackup LiveUpdate
- NetBackup 5200 Series Administrator's Guide

Other
- Mounting hardware
- AC power cords
- Network cables
- Symantec NetBackup 5200 Series Getting Started Guide
- NetBackup 5200 Series 16GB USB Flash drive recovery media

See the included packing list for a complete list of the package contents.
The following describes the primary components that make up your 2U rack-mount appliance:

Server hardware configuration
- 19-inch, 2U rack-mount server with dual Intel E5620 processors
- 24 GB RAM
- Intel SROMBSASMP2 RAID controller
- Ten 1-TB disk drives
  - Two internal disk drives under Intel Embedded server RAID Technology II (RAID 1) for OS partition
  - One disk drive for hot spare
  - Seven disk drives for a RAID 6 data partition (4 TB formatted storage)
- Four 1 Gbps Ethernet ports (PCIe NIC)
- Two 1 Gbps Ethernet ports (motherboard)
- Optional:
  - Two 10 Gbps Ethernet ports (PCIe NIC)
  - 8-Gbps Dual-port QLogic QLE 2562 FC card

Factory installed software
- NetBackup appliance-specific software
- NetBackup 7.1 (Enterprise Server)
- NetBackup Deduplication and AdvancedDisk storage options (associated license keys are required but are not included)
- Administrative Web user interface (UI)
- Linux operating system (provided by Symantec)
- NetBackup 5200 Series Administrator's Guide

Other
- Mounting hardware
- AC power cords
- Network cables
- Symantec NetBackup 5200 Series Getting Started Guide
- NetBackup 5200 Series 16GB USB Flash drive recovery media

See the included packing list for a complete list of the package contents.

About appliance console components

This section provides information on the panes and navigation features available in the appliance console. You can view the console by using a Web browser.

The following is an example view that shows the appliance console components.
About using the links on the title bar

At the very start, the title bar shows text like Master Appliance. This text provides details about the Appliance whether it operates as a master server or a media server.

On the title bar of the appliance console, the **Logged in as** value shows the user name that is logged on to the appliance server.

To adjust the screen space that is used by the tabs and subtabs, click the **Customize Tabs** drop-down list. You can select the following options:

- **Small**: Only the selected tab and subtab are shown in a single row. To display the remaining tabs in a drop-down list, click the arrow next to the selected tab. To display the remaining subtabs in a drop-down list, click the arrow next to the selected subtab.

- **Medium**: The tabs and subtabs appear in two separate rows. The tabs do not have any icons above them.

- **Large**: The tabs and subtabs appear in two separate rows. The tabs have icons placed above them.

Use the links available in the title bar at the top of the console for the following tasks:

- To see appliance product version and copyright information, click **About**.
- To access NetBackup appliance help, click **Help**. Context-sensitive help for all views, wizards, and dialog boxes is available.
  
  More information about online Help is available.
- To disconnect from the appliance server to end your session, click **Logout**.

About the Topology pane

The Topology pane appears under the **Manage > Appliance** view for an Appliance. The Topology pane appears on the left-hand side of the Appliance console and lists the master appliance and the hosts that are connected to the appliance. The Topology pane also shows the devices that are attached to the Appliance like robot drives, robot library etc.

The Topology pane shows the hierarchy of the domain. When you select the master appliance in the Topology pane, you can perform several operations like add appliances, add servers, or download updates. However when you click on any media appliance, you can only install updates when available.

The following is a sample view of the Topology pane.
About using Web browser bookmarks

Use your Web browser to add a bookmark for any view in the appliance console and return to it as needed.

You can use the bookmark to return to the same view when you log onto the console again.

About the Master Server role

In this role, the appliance operates as a master server with its own internal disk storage. You configure and use this appliance much like you would use a regular NetBackup master server. You can schedule backups or start a backup manually. Users with the appropriate privileges can perform restores.

The appliance supports backups to tape so you can connect one or more tape libraries to it with Fibre Channel.

This appliance role provides a simplified administrative interface for the local network, disk, and tape management. However, the majority of NetBackup administration such as backup management and storage unit management, must be performed through the traditional NetBackup Administration Console.

For complete NetBackup administration information, see the NetBackup Administrator's Guide for UNIX and Linux, Volume I and Volume II.
About Media Server roles

In these roles, the appliance operates as a media server with its own internal disk storage.

When you performed the initial configuration, you selected one of the following modes to identify the associated master server:

■ **For use with a traditional NetBackup master server**
  This appliance role must be used only with a standard NetBackup master server. The NetBackup master server must have NetBackup version 7.1 or later installed.
  The appliance supports backups to tape so you can connect one or more tape libraries to it with Fibre Channel.
  This appliance role provides a simplified administrative interface for the local network, disk, and tape management. However, the majority of NetBackup administration such as backup management and storage unit management, is typically performed on the NetBackup master server.

■ **For use with an appliance master server**
  This appliance role provides a simplified administrative interface for the local network, disk, and tape management. However, the majority of NetBackup administration such as backup management and storage unit management, is typically performed on the appliance master server.

See “About the NetBackup appliance graphical user interface” on page 19.

Installing NetBackup client software on clients used with appliances

After all appliance configuration has been completed, you are ready to install client software on the clients that you want to back up.

This process includes the following tasks:

■ Install the NetBackup client software on the client computer.
■ Add the client to the appliance master server.

---

**Note:** If a client already contains a NetBackup agent, Symantec recommends that you replace it with the version provided on the appliance by performing this procedure.
To install the NetBackup client agent on a Windows client and add the client to the appliance master server

1. Log on to the Windows client computer where you want to install the NetBackup client agent.
2. Open a Map a directory to the following CIFS shared folder on the appliance:
   `\<appliance_name>\install`
3. Click on the Windows executable, `quickinstall.exe`.
   This action installs the NetBackup client software.
4. After the software is installed, you must add this client to your master server appliance.
   See “About the Manage views” on page 47.

To install the NetBackup client agent on a UNIX client and add the client to the appliance master server

1. Log on to the UNIX client computer where you want to install the NetBackup client agent.
2. Mount the following NFS share:
   `<appliance_name>:/inst/client`
3. Browse the files within the NFS share directory. Files that are similar to the following appear.
   
   `.packages  clientconfig  quickinstall.exe
   PC_Clnet  docs  unix-client-install`
4. Run the `unix-client-install` script.
   This action installs the NetBackup client software.
5. After the software is installed, you must add this client to your master server appliance.
   See “About the Manage views” on page 47.

About the NetBackup appliance graphical user interface

The NetBackup appliance user interface enables you to configure and manage the appliance to work best for your needs.
The appliance user interfacer is a Web-based browser interface that includes two taskbars. The taskbar is located under the browser address window.

### Table 1-1 Menus and task options

<table>
<thead>
<tr>
<th>Taskbar icon</th>
<th>Menu items and task options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor</td>
<td>Hardware</td>
</tr>
<tr>
<td>Manage</td>
<td>Appliance</td>
</tr>
<tr>
<td></td>
<td>Add Appliance</td>
</tr>
<tr>
<td></td>
<td>Add Additional Servers</td>
</tr>
<tr>
<td></td>
<td>Download Update</td>
</tr>
<tr>
<td></td>
<td>Upload Update</td>
</tr>
<tr>
<td></td>
<td>Install Update</td>
</tr>
<tr>
<td></td>
<td>Disk Storage</td>
</tr>
<tr>
<td></td>
<td>NetBackup License</td>
</tr>
<tr>
<td></td>
<td>Add</td>
</tr>
<tr>
<td></td>
<td>Delete</td>
</tr>
<tr>
<td>Settings</td>
<td>Configuration</td>
</tr>
<tr>
<td></td>
<td>SNMP Server</td>
</tr>
<tr>
<td></td>
<td>SMTP Server</td>
</tr>
<tr>
<td></td>
<td>Appliance Reconfiguration</td>
</tr>
<tr>
<td></td>
<td>Network Configuration</td>
</tr>
<tr>
<td></td>
<td>DNS Configuration</td>
</tr>
<tr>
<td></td>
<td>Security</td>
</tr>
<tr>
<td></td>
<td>Date and Time Configuration</td>
</tr>
<tr>
<td></td>
<td>Fibre Transport</td>
</tr>
<tr>
<td></td>
<td>Hardware Monitoring</td>
</tr>
</tbody>
</table>

See “About license key management on the NetBackup appliance” on page 62.

See “Expanding the bandwidth on the NetBackup appliance” on page 63.

### About the NetBackup Appliance documentation

Included with your NetBackup appliance are the following documents to ensure you can successfully install, configure, and use your appliance. You can find these documents on the Symantec Support Web, use the following URL.

http://www.symantec.com/docs/DOC2792
**Note:** It’s possible that changes may occur after the documents have been initially released. The electronic versions of these documents on the Support Web site contain the most up-to-date information. You should refer to these documents for the latest information about the appliance. The documents are provided so that you can download and print them at any time.

**Symantec NetBackup™ Appliance Getting Started Guide**

This guide provides the following information:

- A packing list that describes the items that are included in the box along with your appliance.
- Configuration prerequisite information that you need to know to configure your appliance for the first time.
- Hardware configuration steps
  This section guides you through the required steps to install your appliance in a cabinet and connect your appliance to a laptop and the network.
- Software configuration steps
  This section guides you through the configuration process from the appliance user interface or from the appliance shell menu.

**Symantec NetBackup™ 5200 Series Appliance Administrator’s Guide**

The **Symantec NetBackup™ 5200 Series Appliance Administrator’s Guide** is provided as part of the NetBackup 5200 and 5220 software package. This guide may contain updates that have occurred since the initial release of the document. For the latest administration information always refer to this version of the guide.

The **NetBackup 5200 Administrator’s Guide** contains the following types of information:

- Deployment information
- Administering your appliance
- Monitoring information

**Symantec NetBackup™ 5200 Series Command Reference Guide**

The **Symantec NetBackup™ 5200 Series Command Reference Guide** provides a complete list of the commands that are available for you to use through the appliance shell menu. This document is provided as a part of the product software that is installed on the appliance, and in electronic form on the Symantec Support Web site.
Symantec NetBackup 5200 Series Release Notes

This document contains information about NetBackup 5200 and 5220 appliance, version 2.0 release. It contains brief descriptions of new features within the release, operational notes that apply to the release update, and any known issues.

This document is available on the Symantec Support Web site at the following location.

http://www.symantec.com/docs/DOC2792

Symantec NetBackup 5200 Series Troubleshooting Guide

This document contains the latest troubleshooting information for the NetBackup 5200 and 5220 appliances. It is available on the Symantec Support Web site at the following location.

Symantec NetBackup Product Family Third-party Legal Notices

The NetBackup Product Family Third-party Legal Notices document lists the third-party software that is included in this product and it contains attributions for the third-party software. This document is available from the following Web site:

http://www.symantec.com/docs/DOC3775

See “About hardware monitoring and alerts” on page 34.
Understanding the NetBackup appliance settings

This chapter includes the following topics:

- About modifying the appliance settings
- About NIC port bonding
- Changing Network Configuration settings
- Changing DNS Configuration settings
- Changing the Administrator's password
- Changing the Date and Time Configuration
- Resizing appliance disk storage units
- Changing the Fibre Transport settings
- About hardware monitoring and alerts
- About Configuring SMTP
- About using SNMP
- About Nirvanix cloud storage
About modifying the appliance settings

After you have successfully configured your appliance you can use the administrative Web UI and the appliance shell menu to change various NetBackup appliance settings. You can use the Settings tab in the NetBackup appliance user interface to view and configure the following settings.

The following tables describe the Settings that are available:

- **Table 2-1**, Settings > Configuration
- **Table 2-2**, Settings > Appliance Reconfiguration
- **Table 2-3**, Settings > Hardware Monitoring

**Table 2-1**  Settings > Configuration

<table>
<thead>
<tr>
<th>Setting</th>
<th>Lets you...</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNMP</td>
<td>Configure the SNMP server.</td>
<td>See “Settings &gt; Configuration &gt; SNMP Server options” on page 45.</td>
</tr>
<tr>
<td>SMTP</td>
<td>Configure the SMTP server details that you need while sending reports or alerts through emails.</td>
<td>See “About Configuring SMTP” on page 42.</td>
</tr>
</tbody>
</table>

**Table 2-2**  Settings > Appliance Reconfiguration

<table>
<thead>
<tr>
<th>Setting</th>
<th>Lets you...</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNS Configuration</td>
<td>Add or change DNS configuration settings.</td>
<td>See “Changing DNS Configuration settings” on page 28.</td>
</tr>
<tr>
<td>Security</td>
<td>Change the admin password for your appliance.</td>
<td>See “Changing the Administrator’s password” on page 29.</td>
</tr>
<tr>
<td>Date and Time Configuration</td>
<td>Change the date and time on your appliance.</td>
<td>See “Changing the Date and Time Configuration” on page 30.</td>
</tr>
<tr>
<td>Fibre Transport Configuration</td>
<td>Configure Fibre Transport your appliance.</td>
<td>See “Changing the Fibre Transport settings” on page 34.</td>
</tr>
</tbody>
</table>
### About NIC port bonding

Appliance NIC ports can be bonded (combined) together to improve appliance performance on your corporate network.

You can bond NIC ports during the initial configuration on the **Network Configuration** page, or afterward through the appliance interface by clicking **Settings > Appliance Reconfiguration > Network Configuration**.

The following describes the guidelines for NIC bonding, based on the data entry fields that are found on the **Network Configuration** page in the appliance interface.

**Table 2-4** NIC bonding guidelines and associated data entry fields

<table>
<thead>
<tr>
<th>Data entry field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIC</td>
<td>The NIC drop-down list shows the supported combination of appliance Ethernet ports that can be bonded. The list is compiled automatically and is based on the link types and the link speeds of the ports. Ports do not require connection to the network to appear in the list. Select <strong>Auto</strong> to have the NICs selected automatically. This mode selects the best possible set of NICs to plumb the IP address on. The selection is based on the available NICs, the link type (copper or FC), and the link speed. If multiple NICs have the same properties, then a bond (link aggregation) is created and the IP address is plumbed on the bond. Only NICs of the same type and speed can be bonded. Once a NIC is bonded, it cannot be bonded to another NIC. To reassign a bond, you must first remove the NIC from its current bond.</td>
</tr>
</tbody>
</table>
### Table 2-4

<table>
<thead>
<tr>
<th>Data entry field</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Bond Mode**    | This field lets you combine (aggregate) multiple network interfaces into a single logical "bonded" interface. The behavior of the bonded interfaces depends upon the mode. The default bond mode is **balance-alb**. The available bonding modes are as follows:  
- balance-rr  
- active-backup  
- balance-xor  
- broadcast  
- 802.3ad  
- balance-tlb  
- balance-alb  
Some bond modes require additional configuration on the switch or the router. You should take additional care when you select a bond mode.  
For more information about bond modes, see the following documentation:  

NIC ports can also be bonded from the appliance shell menu. For details, see the *Symantec NetBackup 5200 Series Command Reference Guide*.

## Changing Network Configuration settings

Use the following procedure to change or add to the Network Configuration settings.

**Note:** If you remove or change the primary IP address configuration, the result may cause a loss of the network connections. If the connection is lost, you need to reconnect and log in to the appliance.

To change or add to the network configuration settings

1. Log on to the administrative Web UI on the appliance.
2. Click **Settings > Appliance Reconfiguration > Network Configuration**.
3. Enter the appropriate information in the **Configure Network** data entry fields as follows:
**IP Address**
Enter the IPv4 address to be used for this appliance.

**Subnet Mask**
Enter the subnet mask value that corresponds to the IP address.

**NIC**
This column displays the network device name that you can choose when you add a new network to the configuration.

Use the following guidelines to bond multiple NICs:

- The NIC drop-down list shows the supported combination of appliance Ethernet ports that can be bonded. The list is compiled automatically and is based on the link types and the link speeds of the ports. Ports do not require connection to the network to appear in the list.
- Select Auto to have the NICs selected automatically. This mode selects the best possible set of NICs to plumb the IP address on. The selection is based on the available NICs, the link type (copper or FC), and the link speed. If multiple NICs have the same properties, then a bond (link aggregation) is created and the IP address is plumbed on the bond.
- Only NICs of the same type and speed can be bonded.
- Once a NIC is bonded, it cannot be bonded to another NIC. To reassign a bond, you must first remove the NIC from its current bond.

**Bond Mode**
This field lets you combine (aggregate) multiple network interfaces into a single logical "bonded" interface. The behavior of the bonded interfaces depends upon the mode. The default bond mode is balance-alb.

The available bonding modes are as follows:

- balance-rr
- active-backup
- balance-xor
- broadcast
- 802.3ad
- balance-tlb
- balance-alb

Some bond modes require additional configuration on the switch or the router. You should take additional care when you select a bond mode. For more information about bond modes, see the following documentation:
4 Click **Add**.

The new entries are configured on the appliance and appear automatically in the read-only fields of the **Applied Network Configuration** table.

5 Enter the appropriate information in the **Configure Routing** data entry fields as follows:

Enter the kernel routing configuration of the appliance as follows:

- **Destination IP**
  Enter the network IP address of a destination network.
  For the initial appliance configuration, this field contains a default value that cannot be changed. When you configure another destination IP, you must enter the appropriate address.

- **Destination Subnet Mask**
  Enter the subnet value that corresponds to the IP address.
  For the initial appliance configuration, this field contains a default value that cannot be changed. When you configure another route, you must enter the appropriate value.

- **Default Gateway**
  Enter the address of the network point that acts as an entrance to another network.

- **NIC**
  The appliance can use multiple network interface cards (NICs). This column displays the network device name.
  Refer to the Linux `route` command for more information about how to add routing entries.

6 Click **Add**.

The new entries are configured on the appliance and appear automatically in the read-only fields of the **Applied Routing Configuration** table.

---

**Changing DNS Configuration settings**

Use the following procedure to change or add to the **DNS Configuration** settings.

**To change or add to the DNS configuration settings**

1 Log on to the administrative Web UI on the appliance.

2 Click **Settings > Appliance Reconfiguration > DNS Configuration**.

3 Enter the appropriate information in the **DNS** data entry fields as follows:
■ **DNS Name Server(s) IP Address**  
Enter the IP address of the DNS server.  
To enter multiple DNS server names, use a comma character as the delimiter between each name.

■ **Domain Name Suffix**  
Enter the suffix name of the DNS server.

■ **Search Domain(s)**  
You can enter one or more DNS search domain names to search when an unqualified host name is given. To enter multiple search domain names, use a comma character as the delimiter between each name.

4 Enter the appropriate information in the **Host Name Resolution** data entry fields as follows:

■ **IP Address**  
Enter the IP address of the appliance.

■ **Fully-Qualified-Hostname**  
Enter the fully qualified host name (FQHN) of the appliance.

■ **Short-Hostname**  
Enter the short name of the appliance.  
After you enter all of the necessary information in these fields, you must

5 Click **Add**.  
The **Host Name Resolution** information that you entered appears below the data entry fields.

6 Click **Save**.

### Changing the Administrator's password

After the initial configuration, you can change the administrator's password from the **Settings > Appliance Reconfiguration > Security** page.

Use the following procedure to change the administrator’s password.

**To change the administrator’s password**

1 In the **Old Admin Password** field, enter the current password.  
   If the password was not changed during the initial configuration, this field is prepopulated with the default password (**P@ssw0rd**).

2 In the **New Admin Password** field, enter the new password.  
The password must be seven or more characters long.
A seven character password must include all of the following requirements, while a longer password must include at least three of the following requirements:

- One uppercase letter
- One lowercase letter
- One number (0-9)
- One special character (for example, !, @, #, etc.)

A password that begins with an uppercase letter and ends with a number is unacceptable, unless you include another uppercase letter and another number between them.

3 In the Confirm New Admin Password field, enter the new password again for confirmation.

4 Click Save.

Changing the Date and Time Configuration

On the Settings > Appliance Reconfiguration > Date and Time Configuration page, you can change the date, the time, and the time zone configuration.

Use the following procedure to change the Date and Time Configuration.

To change the date, the time, and the time zone configuration

1 Log on to the administrative Web UI on the appliance.

2 Click Settings > Appliance Reconfiguration > Date and Time Configuration.
3 Enter the appropriate information in the fields:

**NTP**

**Server IP Address**
To use NTP (Network Time Protocol) to set the time and the date of the appliance, enter the IP address of the NTP server.

**None**

**Date and Time**
To set the date and the time of the appliance without NTP, click **None** and enter the appropriate date and time.

Enter the date manually by using the **mm/dd/yyyy** format, or click on the calendar icon and select the date.

Enter the time by using the **hh:mm:ss** format. Entries must be in the 24-hour format (**00:00:00 - 23:59:59)**.

**Time Zone**
Whether you select to use **NTP** or **None**, you must set the time zone.

To set the time zone for the appliance, click on the **Time Zone** drop-down box and select the appropriate time zone.

4 Click **Save**.

**Resizing appliance disk storage units**

If you plan to resize disk storage, you must stop the NetBackup processes before the resize operation.

The following procedures describe how to resize disk storage units from the appliance user interface and the command-line interface. You must perform the following procedures in order:

- **Stop the NetBackup processes.**
  See [To stop the NetBackup processes](#)
- **Resize the disk storage units by using the administrative Web UI or the command-line interface.**
  See [To resize the disk storage units using the administrative Web UI](#)
  See [To resize the disk storage units using the command-line interface](#)
- **Start the NetBackup processes.**
  See [To start the NetBackup processes](#)

**Note:** If the resize operation hangs, Symantec recommends that you use the **Main_Menu > Support > Reboot** command to restart your appliance.
To stop the NetBackup processes

1. Open an SSH session and log on to your appliance.
   The logon is admin and the default password is P@ssw0rd.
   After you log on, the welcome message appears in the shell menu and the prompt is at the Main_Menu view.

2. Enter the following command to stop the NetBackup processes:
   
   ```
   Main_Menu > Support > Processes > NetBackup Stop
   ```
   After the services stop, you can resize the disk storage units. You have to use the command-line interface to start the NetBackup processes after you resize the disk storage units.

To resize the disk storage units using the administrative Web UI

1. Log on to the administrative Web UI on the appliance.

2. Click Settings > Disk Storage.

3. Under Storage Allocation, for the NetBackup AdvancedDisk Volume, do the following:
   
   In the Specify resize field, enter a percentage or a value (in GB) that you want to allocate for AdvancedDisk and click Resize.
   
   The remaining disk space is allocated to the NetBackup Deduplication volume.

To resize the disk storage units using the command-line interface

1. In the command-line shell menu, enter the following command to configure the disk storage on your appliance.
   
   ```
   Main_Menu > Storage > Resize
   ```
   The Current Disk Configuration information appears.

2. Enter the percentage of the total disk pool size or the amount of disk size (in GB) that you want to allocate for the Catalog (on a Master appliance) or for AdvancedDisk (on a Media appliance).
Enter a percentage or a value (in GB) and press **Enter**.

The remaining disk space is allocated to the NetBackup Deduplication volume.

If you enter a percentage, the following statement is displayed that you must answer:

You have requested 4096 GBs (10% of total disk pool)
Is this correct : (yes/no) (default: y)

Enter yes to confirm the change. Enter no to change you the value that you entered.

The resized disk configuration appears.

If the AdvancedDisk size is greater than zero and the AdvancedDisk storage unit does not exist, the following prompt appears:

No AdvancedDisk storage unit detected on this appliance.
Do you want to create one ? (yes/no): yes

Enter yes, and press **Enter**. You are then prompted to add a name for the new AdvancedDisk volume.

What Storage Unit Name do you want for the new AdvancedDisk pool (stu_adv_disk_appliancename):

Press **Enter** for default storage unit name or enter storage unit name and press **Enter**.

Successfully created AdvancedDisk storage unit
**stu_adv_disk_appliancename**

If the Deduplication disk storage size is greater than zero and the Deduplication storage unit does not exist, the following prompt appears:

No Deduplication storage unit detected on this appliance.
Do you want to create one ? (yes/no): y

Enter y, and press **Enter**. You are then prompted to add a name for the new Deduplication disk volume.

What Storage Unit Name do you want for the Deduplication pool (stu_disk_appliancename):
9  Press **Enter** for default storage unit name or enter storage unit name and press **Enter**

Successfully created Deduplication storage unit stu_disk_appliancename

10  Type **Exit** to exit the command-line interface.

To start the NetBackup processes

- In the command-line shell menu, enter the following command to stop the NetBackup processes:

```
Main_Menu > Support > Processes > NetBackup Start
```

### Changing the Fibre Transport settings

On the **Settings > Appliance Reconfiguration > Fibre Transport** page, you can change the Fibre Transport settings. By default, these features are disabled.

**Note:** If you do not currently use Fibre Transport and you want to use the following features, you must first obtain a SAN Client license key. Then, add the key to your master server.

Use the following procedure to change the Fibre Transport settings.

**To change the Fibre Transport settings**

1  Log on to the administrative Web UI on the appliance.

2  Click **Settings > Appliance Reconfiguration > Fibre Transport**.

3  For **Enable the SAN Client FT media server (Fibre Transport for backups to this appliance)** or for **Enable the Fibre Transport to a Deduplication appliance (for duplication or for backups)**, do one of the following:

   ■ To enable the feature, click the check box so that a check mark appears.

   ■ To disable the feature, click the check box so that the check mark disappears.

### About hardware monitoring and alerts

The appliance has the ability to monitor itself for hardware problems. If it detects a problem that needs attention, it can use different notification mechanisms:

- Administrative Web UI hardware monitoring and alerts

  See “About the appliance UI hardware monitoring and alerts” on page 35.
Send an email to the local administrator.
See “About Email notification from the NetBackup 5200” on page 38.

Send an alert to the SNMP manager.
See “About using SNMP” on page 44.

Sends a notification to Symantec using the Call Home feature.
See “About the Call Home feature” on page 40.

Symantec recommends that you check for hardware alert messages on a daily basis.

About the appliance UI hardware monitoring and alerts

To view the monitored hardware (default view) from the appliance user interface, select Monitor > Hardware. This view provides the various information that is monitored and displayed for each piece of hardware in your NetBackup appliance.

You can view the hardware monitoring information through the command-line interface. From the command line, you can run the Main > Monitor > Hardware sensor command to monitor a specific piece of hardware or all of the components.

You use the sensor variable to designate which piece of hardware you want to monitor.

You can use the appliance shell menu to enable the Simple Network Management Protocol (SNMP) that is available to monitor and notify you of a hardware failure. The appliance uses version 2 of the SNMP protocol, SNMPv2-SMI. From the Main > Settings view, you can use the SNMP command to view the contents of the Management Information Base (MIB) file, enable SNMP notifications, disable SNMP notifications, and show the current SNMP parameters.

The following table describes the hardware that is monitored and the failure limits that cause alerts.
### Table 2-5 Appliance hardware that is monitored

<table>
<thead>
<tr>
<th>Monitored Hardware</th>
<th>Sample of collected data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU</strong></td>
<td>Monitors the following:</td>
</tr>
<tr>
<td></td>
<td>- <strong>Status</strong> - Monitors the status of the CPU, such as, <strong>Presence detected</strong> and <strong>No CPU(s) detected</strong>.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Voltage</strong> - Monitors the voltage to the appliance CPU chip and reports a CPU failure if any of the following conditions occur:</td>
</tr>
<tr>
<td></td>
<td>- No voltage</td>
</tr>
<tr>
<td></td>
<td>- Voltage less than 0.99 volts</td>
</tr>
<tr>
<td></td>
<td>- Voltage more than 1.25 volts</td>
</tr>
<tr>
<td><strong>Disk</strong></td>
<td>Monitors the boot drive and the storage drives and reports a disk failure if an internal erroneous state occurs. This view provides the following information:</td>
</tr>
<tr>
<td></td>
<td>- <strong>Slot No</strong> - Slot in the robot that contains the volume.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Status</strong> - Current status of the media. The status can be Frozen, Active, etc.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Capacity</strong> - Capacity that is in use.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Type</strong> - The type of disk that is configured.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Enclosure ID</strong> - ID of the enclosure that the disk resides in.</td>
</tr>
<tr>
<td><strong>Fan</strong></td>
<td>Monitors the following:</td>
</tr>
<tr>
<td></td>
<td>- <strong>Status</strong> - Monitors the status of the fan, such as, <strong>Presence detected</strong> and <strong>No Fan(s) detected</strong>.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Speed</strong> - Monitors the fan speed and reports a fan failure when the following conditions occur:</td>
</tr>
<tr>
<td></td>
<td>- Fan speed less than 1974 rpm</td>
</tr>
<tr>
<td></td>
<td>- Fan speed more than 8977 rpm</td>
</tr>
<tr>
<td></td>
<td>- If there is a failure with the Fan, a <strong>Critical</strong> warning is displayed.</td>
</tr>
<tr>
<td></td>
<td>- If the Fan is not installed, a <strong>Not Installed</strong> warning is issued.</td>
</tr>
</tbody>
</table>
### Table 2-5 Appliance hardware that is monitored (continued)

<table>
<thead>
<tr>
<th>Monitored Hardware</th>
<th>Sample of collected data</th>
</tr>
</thead>
</table>
| **Power Supply**   | Monitors the power supply wattage and reports a failure when the following conditions occur:  
|                    | ■ 0 watts  
|                    | ■ Wattage more than 700 watts  
|                    | The following status warning are also provided:  
|                    | ■ **Not Available** - Occurs if the power module is installed and no power is supplied. That can occur because it is not connected to the power outlet or some other reason.  
|                    | ■ **Not Installed** - Occurs if the Power Module is pulled out.  
|                    | ■ **Critical** - Occurs if the Power Module is operated with a warning. |
| **RAID**           | Monitors the RAID status and reports an error if the status changes from optimal. The following data is collected:  
|                    | ■ Name - The name of the RAID device.  
|                    | ■ Status - Shows the current status of the device, such as **Optimal**.  
|                    | ■ Capacity - The capacity of each device.  
|                    | ■ Type - The type of RAID device, such as RAID1 and RAID 6.  
|                    | ■ Disks - The disks being used. |
| **Temperature Information** | Monitors the temperature of the appliance at different points and reports a failure if the following limits are exceeded:  
|                    | ■ **Intake Vent Temp**  
|                    | Lower than 0° C or higher than 60° C  
|                    | ■ **Outtake Vent Temp**  
|                    | Lower than 0° C or higher than 60° C  
|                    | ■ **Backplane Temp**  
|                    | Lower than 0° C or higher than 60° C |
Table 2-5  Appliance hardware that is monitored (continued)

<table>
<thead>
<tr>
<th>Monitored Hardware</th>
<th>Sample of collected data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fibre Channel HBA</td>
<td>Monitors the host bus adapter (HBA) ports that are used for the SAN Client Fibre Transport feature. The following describes the columns in the Fibre Channel HBA table:</td>
</tr>
<tr>
<td>■ ID</td>
<td>A numeric ID that NetBackup assigns to the HBA port</td>
</tr>
<tr>
<td>■ Status</td>
<td>Either Link Up for active or Link Down for inactive.</td>
</tr>
<tr>
<td>■ World Wide Port Name</td>
<td>The World Wide Name of the port.</td>
</tr>
<tr>
<td>■ Speed</td>
<td>The speed of the port, negotiated with the port of an HBA on another host or on a SAN. If no port is available for negotiation, a speed is not displayed in this field. This value is not the throughput of the Fibre Channel traffic.</td>
</tr>
<tr>
<td>■ Mode</td>
<td>Target or Initiator.</td>
</tr>
</tbody>
</table>

See “About Email notification from the NetBackup 5200” on page 38.

See “About the Call Home feature” on page 40.

About Email notification from the NetBackup 5200

The NetBackup 5200 has the ability to send an email to a local administrator when a hardware failure is detected. You can use the Main > Admin > Email Command from the command-line interface to configure the email address that you want to use to receive the hardware failure notification. The contents of the email identifies the type of hardware failure that occurred and a status of the failure.

For information on how to configure email addresses using the command-line interface, refer to the following topic:

The following table lists the hardware failures that prompt an email notification. It also contains an example of the contents that would appear in the email for each failure.
<table>
<thead>
<tr>
<th>Monitored Hardware</th>
<th>Example of the email contents</th>
</tr>
</thead>
</table>
| Power Supply (1 or 2)       | POWER 1 status : Presence detected  
                             | POWER 1 wattage : 750 Watts  
                             | POWER 1 lowwatermark : 0  
                             | POWER 1 highwatermark : 700 Watts  |
| CPU (1 or 2)                | CPU 1 status : Presence detected  
                             | CPU 1 voltage : 0.72 Volts  
                             | CPU 1 lowwatermark : 0.99 V  
                             | CPU 1 highwatermark : 1.25 V  |
| Fan (1, 2, 3, or 4)         | FAN 1 status : Device Present  
                             | FAN 1 speed : 9500 RPM  
                             | FAN 1 lowwatermark : 1974 RPM  
                             | FAN 1 highwatermark : 8977 RPM  |
| Temperature (1, 2, or 3)    | TEMPERATURE 1 type : Intake Vent Temp  
                             | TEMPERATURE 1 temperature : 80 degrees C  
                             | TEMPERATURE 1 lowwatermark : 0 degrees C  
                             | TEMPERATURE 1 highwatermark : 70 degrees C  |
| HBA 1                       | HBA 1 status : offline  
                             | HBA 1 device : host1  
                             | HBA 1 port name : 0x210000e08b9ab1ec  |
| RAID (1, 2, 3, or 4)        | RAID 1 name : vd0  
                             | RAID 1 status : Failed  
                             | RAID 1 capacity : 67.75GB  
                             | RAID 1 type : RAID-0  
                             | RAID 1 disks : 0  |
| Disk (1 or 2)               | DISK 1 slot number : 0  
                             | DISK 1 status : failed  
                             | DISK 1 capacity : 67.75GB  
                             | DISK 1 type : SAS  
                             | DISK 1 enclosure id : 8  |

See “About the appliance UI hardware monitoring and alerts” on page 35.
See “About the Call Home feature” on page 40.
About the Call Home feature

The appliance can connect with a Symantec Call Home server and upload hardware and software information. The appliance uses the HTTPS protocol and uses port 443 to connect to the Symantec Call Home server. This capability is referred to as Call Home and this feature is enabled by default.

If you determine that you have a problem with a piece of hardware, you should contact Symantec Technical Support. The Technical Support Engineer can use the serial number of your appliance and assess the trends of the hardware status.

From the appliance user interface, you can enable and disable the Call Home feature on the Settings > Hardware Monitoring page.

From the appliance shell menu, you can enable and disable the Call Home feature with the `Main_Menu > Settings > CallHome Enable` and `Main_Menu > Settings > CallHome Disable` commands. In addition, you can use the `Main_Menu > Settings > Email Hardware Notification_Interval time` command to set the notification interval. That interval is the number of minutes between the alert mails that are sent to the administration.

Finally, you can use the `Main_Menu > Settings > CallHome Proxy` command to specify proxy server information, if necessary. If the appliance environment has a proxy server between the environment and external Internet access, you must enable the proxy settings on the appliance. The proxy settings include both a proxy server and a port. The proxy server must accept https connections from the Symantec Call Home server. This feature is disabled by default.

If you enable the Call Home feature, you can use the `Main_Menu > Settings > CallHome Location` command to configure the contact information for your appliance. In addition, you can enable or disable the ability to upload the contact information. For example, you can enter the following information:

- The address of the location of the appliance.
- The name of the person who is the first point of contact and responsible for the appliance.
- The phone number of the contact person.
- The email address of the contact person.

The following describes how a hardware failure is reported when the feature is enabled or disabled:
Table 2-7

<table>
<thead>
<tr>
<th>Monitoring enabled or disabled</th>
<th>Hardware failure routine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Home enabled</td>
<td>When a hardware failure occurs, the following sequence of alerts occur:</td>
</tr>
<tr>
<td></td>
<td>■ The appliance uploads hardware and software information to a Symantec server.</td>
</tr>
<tr>
<td></td>
<td>The following hardware information is uploaded:</td>
</tr>
<tr>
<td></td>
<td>■ Power supply wattage</td>
</tr>
<tr>
<td></td>
<td>■ CPU voltage</td>
</tr>
<tr>
<td></td>
<td>■ Fan rpm</td>
</tr>
<tr>
<td></td>
<td>■ Disk status</td>
</tr>
<tr>
<td></td>
<td>■ Fibre Channel status</td>
</tr>
<tr>
<td></td>
<td>■ Critical temperatures</td>
</tr>
<tr>
<td></td>
<td>■ RAID group status</td>
</tr>
<tr>
<td></td>
<td>■ Expansion storage status</td>
</tr>
<tr>
<td></td>
<td>See the following for an example of the hardware information that is uploaded for an appliance or an enclosure:</td>
</tr>
<tr>
<td></td>
<td>■ See “About the appliance hardware information that is uploaded” on page 79.</td>
</tr>
<tr>
<td></td>
<td>■ See “About the enclosure information that is uploaded” on page 82.</td>
</tr>
<tr>
<td></td>
<td>The following software information is uploaded:</td>
</tr>
<tr>
<td></td>
<td>■ The backup jobs that failed in the last 12 hours</td>
</tr>
<tr>
<td></td>
<td>■ Total available deduplicated space</td>
</tr>
<tr>
<td></td>
<td>■ Used deduplicated space</td>
</tr>
<tr>
<td></td>
<td>■ Feature IDs</td>
</tr>
<tr>
<td></td>
<td>■ The appliance generates a local alert by email to notify you of the hardware failure.</td>
</tr>
</tbody>
</table>

| Call Home disabled            | The appliance generates a local alert by email to notify you of the hardware failure. |

For a list of the hardware problems that cause an alert, see the following topic:
See “About the appliance UI hardware monitoring and alerts” on page 35.
See “About Email notification from the NetBackup 5200” on page 38.

Your NetBackup appliance environment determines which appliance sends the hardware failure report. The following table describes the various appliance environments and which appliance sends the report:
Table 2-8 Call Home feature behavior

<table>
<thead>
<tr>
<th>Appliance environment</th>
<th>Call Home routine</th>
</tr>
</thead>
<tbody>
<tr>
<td>■ Standalone appliance</td>
<td>If the master server hardware fails, the master server sends the email message that reports the failure.</td>
</tr>
<tr>
<td>master server</td>
<td></td>
</tr>
<tr>
<td>■ Appliance master server</td>
<td>If the master server hardware fails, the backup media server sends the email message that reports the failure.</td>
</tr>
<tr>
<td>■ Media server appliance</td>
<td>If the backup media server hardware fails, the master sends the email message that reports the failure.</td>
</tr>
<tr>
<td>■ Appliance master server</td>
<td>If the master server hardware fails, the backup media server or the replication media server sends the email message that reports the failure.</td>
</tr>
<tr>
<td>■ Media server appliance</td>
<td>If the media server hardware fails, the master server or the replication media server sends the email message that reports the failure.</td>
</tr>
<tr>
<td>■ Replication media server</td>
<td>If the replication media server hardware fails, the master server or the backup media server sends the email message that reports the failure.</td>
</tr>
</tbody>
</table>

About Configuring SMTP

The SMTP mail server protocol is used for outgoing Email. You can configure SMTP from the appliance user interface (Settings > Configuration > SMTP Server). You can use the following commands to configure the SMTP server and add a new Email account.

Main_Menu > Settings > Email SMTP Add

See “Settings > Configuration > SMTP server options” on page 42.

See “Configuring SMTP server settings for appliance” on page 43.

Settings > Configuration > SMTP server options

A description of the Settings > Configuration > SMTP Server options follows in the table.
### Table 2-9  SMTP server options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SMTP Server Name</strong></td>
<td>Enter the SMTP (Simple Mail Transfer Protocol) Server host name. Notifications of the alerts that are generated in appliance are sent using this SMTP server.</td>
</tr>
<tr>
<td><strong>SMTP Notification Interval</strong></td>
<td>The notification interval is the time between the alert emails that are sent to the administrator. This variable is defined in intervals of 15 minutes. This functionality is not supported in the GUI in this release.</td>
</tr>
<tr>
<td><strong>Sender Email Address</strong></td>
<td>Specify the email ID to receive any replies to the alerts or the reports that were sent by appliance.</td>
</tr>
<tr>
<td><strong>Server User Name</strong></td>
<td>Some SMTP servers may require user name and password credentials to send email. Enter the user name.</td>
</tr>
<tr>
<td><strong>Server User Password</strong></td>
<td>Some SMTP servers may require user name and password credentials to send email. Enter the password for this user account.</td>
</tr>
</tbody>
</table>

### Configuring SMTP server settings for appliance

This section provides the procedure to configure the SMTP server that you can use for sending emails and alerts.

**To configure the SMTP server settings**

1. Log on to the appliance as admin.
2. In the appliance user interface, click **Settings > Configuration**.
3. Click **SMTP Server**.

   The appliance uses the global server settings to send email notifications to the SMTP server that you specify.

4. Enter the required information.
   - The SMTP server name.
   - Enter a notification interval. This interval is measured in 15 minute intervals.
   - The sender's email address.
About using SNMMP

About using SNMP

This section provides information about SNMP and how appliance uses SNMP.

See “About SNMP” on page 44.

See “About SNMP versions” on page 44.

See “About the Management Information Base (MIB)” on page 45.

About SNMP

The Simple Network Management Protocol (SNMP) is an application layer protocol that facilitates the exchange of management information between network devices. It is part of the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol suite. SNMP enables network administrators to manage network performance, find and solve network problems, and plan for network growth.

SNMP is based on the manager model and agent model. This model consists of a manager, an agent, a database of management information, managed objects, and the network protocol.

The manager provides the interface between the human network manager and the management system. The agent provides the interface between the manager and the physical devices being managed.

The manager and agent use a Management Information Base (MIB) and a relatively small set of commands to exchange information. The MIB is organized in a tree structure with individual variables, such as point status or description, being represented as leaves on the branches. A numeric tag or object identifier (OID) is used to distinguish each variable uniquely in the MIB and in SNMP messages.

About SNMP versions

The NetBackup appliance supports the SNMPv2 version.

That version was created as an update of SNMPv1 adding several features. The key enhancements to SNMPv2 are focused on the SMI, manager-to-manager capability, and protocol operations.
SNMPv2c combines the Community-based approach of SNMPv1 with the protocol operation of SNMPv2 and omits all SNMPv2 security features.

- The original SNMPv2 (SNMPv2p)
- Community-based SNMPv2 (SNMPv2c)
- User-based SNMPv2 (SNMPv2u)
- SNMPv2 star (SNMPv2*).

About the Management Information Base (MIB)

Each SNMP element manages specific objects with each object having specific characteristics. Each object and characteristic has a unique object identifier (OID) that is associated with it. Each OID consists of the numbers that are separated by decimal points (for example, 1.3.6.1.4.1.2682.1).

These OIDs form a tree. The MIB associates each OID with a readable label and various other parameters that are related to the object. The MIB then serves as a data dictionary that is used to assemble and interpret SNMP messages.

Settings > Configuration > SNMP Server options

A description of the Settings > Configuration > SNMP Server options follows in the table.

<table>
<thead>
<tr>
<th>Table 2-10 SNMP Server options</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Option</strong></td>
</tr>
<tr>
<td>SNMP Server Name</td>
</tr>
<tr>
<td>SNMP Server port</td>
</tr>
<tr>
<td>SNMP Community</td>
</tr>
</tbody>
</table>
Table 2-10  
SNMP Server options (continued)

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable SNMP Hardware Monitoring</td>
<td>Check this box to display the contents of the Management Information Base (MIB) file. This file contains the notification traps that are configured to monitor the appliance hardware.</td>
</tr>
</tbody>
</table>

See “About SNMP” on page 44.

For more information about the Main > Admin > SNMP commands, refer to the *NetBackup 52xx Commands* document.

### About Nirvanix cloud storage

The Nirvanix™ Storage Delivery Network™ (SDN) is a fully-managed, highly secure cloud storage service. The SDN is comprised of standards-based access to Nirvanix storage nodes that are located in the United States, Europe, and Asia. The SDN stores, delivers, and processes storage requests in the best location for your enterprise.

Your NetBackup 5200 appliance can back up data to and restore data from the Nirvanix SDN.

To configure and use Nirvanix cloud storage, see the *NetBackup Shared Storage Guide* for the NetBackup 7.1 release. The Nirvanix documentation is included in the “OpenStorage option” section of the guide.

When you configure Nirvanix, enter one of the following two names for the Storage server type:

- `nirvanix_crypt` to encrypt the data
- `nirvanix_raw` if you do not use encryption

The NetBackup 7.1 documentation is available from the following Web page:

http://www.symantec.com/docs/TECH154178
Managing a NetBackup appliance

This chapter includes the following topics:

- About the Manage views
- About software release updates
- About installing and rolling back an EEB
- About appliance supported tape devices
- About disk storage configuration
- About license key management on the NetBackup appliance
- Expanding the bandwidth on the NetBackup appliance
- About the NetBackup Appliance communications connections

About the Manage views

The NetBackup Appliance enables you to use the NetBackup Administration Console to manage your clients, create policies, run backups, and perform other administration functions. For information on how to perform these functions from the NetBackup Administration Console, you must refer to your NetBackup core documentation set. If you want to download the latest versions of this documentation set, you can do so from the Symantec Support Web site. For help using the NetBackup Administration Console, refer to the *Symantec NetBackup Administrator's Guide, Volume I* on the Symantec Support Web site.

http://www.symantec.com/docs/DOC3653
Your appliance administrative user interface has a Manage tab that enables you to do the following:

- Perform the following functions on your master server appliance:
  - Add a new media server appliance to your master appliance.
  - Add or remove entries from NetBackup `bp.conf` file.
  - Download, upload, and install software updates.
- Monitor the disk storage units that are configured with your appliance.
- Manage appliance license keys.

### About software release updates

Symantec provides bundled, release-update packages for the appliance that you can download from the Symantec Support Web site. Through the appliance user interface or the appliance shell menu, you can check the Symantec Support Web site and determine if an update is available.

The bundled packages can include updates for the following appliance software applications:

- Linux operating system
- NetBackup server and client
- NetBackup Appliance web UI

When you prepare to upgrade the software on your appliance, you should plan for a period of downtime for your appliance.

The upgrade process takes the necessary steps to make sure that your upgrade completes successfully. It first determines if the update that is available is newer than the version of software that you currently have installed.

To help make sure that the upgrade is successful, the upgrade mechanism is designed to stop processes. The upgrade process checks to see if there are any active NetBackup jobs. The upgrade process only proceeds if it is determined no active jobs are detected.

After a successful upgrade, the appliance version is updated to the latest release update level.

**Note:** If the upgrade fails, the appliance version is not incremented and you should contact Symantec Support for assistance with a failed upgrade.
Use the following commands to view the detailed list of software information, see which update is currently installed, and see the current version of the appliance:

- **Main_Menu > Manage > Software > List Details**
  
  You can use this command see a detailed list of all of the installed RPMs or a detailed list of all of the factory-installed RPMs.

- **Main_Menu > Manage > Software > List Downloaded**
  
  This command shows a list of the downloaded software updates.

- **Main_Menu > Manage > Software > List EEBs**
  
  This command shows a list of EEBs that are installed on the appliance.

- **Main_Menu > Manage > Software > List Version**
  
  This command shows the current version of your appliance and of NetBackup.

See “Installing software release updates from the appliance UI” on page 52.

See “Expanding the bandwidth on the NetBackup appliance” on page 63.

### About the Manage > Appliance tab

When you select **Manage > Appliance** from the appliance user interface and the Call Home feature is enabled, the appliance recognizes the version of software that is installed on your server. If then compares it against the latest version that is available for download.

From this page, you can do the following:

- You can add or select an appliance server to install a software update on. From this tab you can use the **Add Additional Servers** button to add an entry to the NetBackup bp.conf file. That allows communication to occur between the appliance and the Windows NetBackup Administration Console so you can manage your appliance through that console.

- You can use this page to download a new software update. If the downloadable version is newer than your version, then a message appears that states a new update is available for download along with a **Download Update** button to initiate the download process.

- You can also use the **Upload Update** feature to browse to a local directory, locate the software update that had already been copied locally, and upload the existing file to your appliance.

- You can enable or disable the ability to control whether the appliance contacts Symantec.com for new software updates. This functionality is controlled on the appliance user interface or with the following **CallHome commands**:

  From the appliance user interface:
Select Settings > Hardware Monitoring.

Check the Enable Call Home checkbox to enable the Call Home feature. Uncheck the box to disable the feature.

From the appliance shell menu:

- `Main_Menu > Settings > CallHome Enable` to enable communication between the appliance and Symantec.com.
- `Main_Menu > Settings > CallHome Disable` to disable communication between the appliance and Symantec.com.

See “About the Manage > Appliance options” on page 50.
See “Installing software release updates from the appliance UI” on page 52.
See “Installing software updates using the appliance shell menu” on page 53.
See “About software release updates” on page 48.

### About the Manage > Appliance options

The left pane of the Manage > Appliance page provides a view of the topology of your NetBackup appliance. This window shows the NetBackup appliance master and media server appliances that are available.

The following information appears in the right pane.

- The current version of the appliance.
- The date that the current release was installed.
- The name of a new release update that is available to download.
- The name of a new release update is available to install if it has already been downloaded.

<table>
<thead>
<tr>
<th>Table 3-1 Manage &gt; Appliance options</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Option</strong></td>
</tr>
<tr>
<td>Topology view</td>
</tr>
</tbody>
</table>
Table 3-1  Manage > Appliance options (continued)

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Appliance</td>
<td>This button enables you to add a new media server appliance. Once it is added, you can install a software update on it. When you click <strong>Add Appliance</strong>, you are prompted to supply the following information:  ■ The <strong>Appliance Hostname</strong>  ■ The <strong>Admin Password</strong></td>
</tr>
<tr>
<td>Add Additional Servers</td>
<td>This button enables you to add or delete an entry to the NetBackup <code>bp.conf</code> file. You may use this function to enable the ability to manage the appliance from the NetBackup Windows Administration Console. In that situation you must add the host name of the Windows-based computer that hosts the Windows Administration Console.  In non-DNS environments, the entry for the Windows NetBackup Administration Console needs to be resolved in the appliance. To do that, perform the following steps to add the Windows host IP address and host name using the appliance's administration user interface:  ■ Click <strong>Settings &gt; Appliance Reconfiguration &gt; DNS Configuration</strong>  ■ In the <strong>Host Name Resolution</strong> fields enter the IP address, Fully-qualified host name, and the short host name.  ■ Click <strong>Add</strong>.  ■ Click <strong>Save</strong> to save the new changes.  To remove a host name, click <strong>Remove</strong> next to the host name that you want to delete.</td>
</tr>
<tr>
<td>Download Update</td>
<td>If a currently available software update version is newer than the version that is installed on your appliance, a message similar to the following is displayed next to the name of the software update on the <strong>Manage &gt; Appliance</strong> Web page.  New update available to download.  Click this button to download the latest update to a preconfigured location on your appliance. You can now install the update.</td>
</tr>
</tbody>
</table>
Table 3-1  Manage > Appliance options (continued)

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upload Update</td>
<td>You use this function when you have an existing copy of the software update stored locally on either your laptop or some other form of media, such as a flash-drive. Then, if you want to copy the software update from your laptop to the appliance, you click <strong>Upload Update</strong>. A browser dialog appears and enables you to locate the software update version on your laptop and upload it to the appliance.</td>
</tr>
</tbody>
</table>
| Install Update  | Enables you to initiate the installation of the latest software update on your appliance. Clicking this button begins a three-step process.  
  ■ The update procedure first performs prerequisite checking to ensure that your appliance is ready for the installation to begin.  
  ■ During the user confirmation phase, you are notified of any update-specific notifications like, if a restart is required.  
  ■ Finally, a summary appears that confirms that the upgrade has completed successfully. In addition, log information is shown to provide you with more information about the upgrade. |

See “About the Manage > Appliance options” on page 50.

See “Installing software release updates from the appliance UI” on page 52.

See “Installing software updates using the appliance shell menu” on page 53.

See “About software release updates” on page 48.

Installing software release updates from the appliance UI

When you want to install a new software update on your appliance, you can either download the update from the Symantec Support Web site, or upload it from a local computer. You can perform these procedures from the appliance user interface or use the appliance shell menu commands.

The following two procedures describe how to install software updates from the appliance user interface. The first procedure explains how to install a software update that you download from the Symantec Support Web site. The second procedure explains how to install a software update that is already stored locally on your laptop.
To download and install a software update
1. Log on to NetBackup appliance user interface.
2. Click Manage > Appliance.
3. If an update is available to download, click Download Update.
   The software update is downloaded to a location so that you can install it. In addition, a message appears that tells you that a new update is now available to install.
4. From the Topology window, select the appliance that you want to update.
5. Click Install Update to install the release update on that appliance.

To upload and install a software update
1. Log on to NetBackup appliance user interface.
2. Click Manage > Appliance.
3. Click Upload Update.
   If you have the software update already stored locally on your laptop, or some other media device such as a flash-drive, you use the Upload Update function to copy the update from your local directory to the appliance.
4. Enter the path and the file name of the software update to upload. Or you can use the Browse feature to locate the file to upload.
5. Click Install Update to install the release update file on the appliance.

Installing software updates using the appliance shell menu
You can use the following commands to view the available release updates, see which update is currently installed, and see the current version of the appliance:

- Main_Menu > Manage > Software > Check
  Use this command to check the Symantec Support Web site for the latest software update.
- Main_Menu > Manage > Software > List Downloaded
  This command shows the available release updates for your appliance.
- Main_Menu > Manage > Software > List Details All
  This command shows all of the software packages that are currently installed on the appliance.
- Main_Menu > Manage > Software > List Details Base
  This command shows all of the software packages that were installed on your appliance during the factory installation.
Main_Menu > Manage > Software > List Version

This command shows the appliance version, the NetBackup version, and the appliance build date.

Use the following procedure to upload software updates on the appliance and install them using the appliance shell menu.

To upload and install NetBackup appliance software updates using the appliance shell menu

1. You should perform this procedure from a computer that is connected to the appliance as well as to the Internet. That ensures that you can download the release update from the Symantec Support Web site to the appliance.

2. Open an SSH session and log on to the appliance as an administrator.

3. Enter the following command to determine if a software update is available from the Symantec Support Web site.

   Main_Menu > Manage > Software > Check

4. Enter the following command to open the NFS and the CIFS shares:

   Main_Menu > Manage > Software > Share Open

5. Map or mount the appliance share directory as follows:

   Windows systems
   Map the following appliance CIFS share:
   \\
appliance-name\incoming patches

   UNIX systems
   Mount the following appliance NFS share:
   <appliance-name>/inst/patch/incoming

   Note that on Windows systems, you are prompted to provide the user name, admin, and its corresponding password.

6. Download the release update from the Symantec Support site onto the mapped or the mounted directory.

   The following URL indicates the download location for the NetBackup 52xx release updates.

   http://www.symantec.com/business/support/index?page=landing&key=58991

7. Unmap or unmount the directory after you have successfully downloaded the release updates.

8. From the appliance, enter the following command to close the NFS and the CIFS shares:

   Main_Menu > Manage > Software > Share Close
Once the release update is downloaded on to the share directory that you defined in Step 3, the update is moved to its proper location. You are not notified that this move has occurred.

If you run any of the following commands before you run the Share Close command, the update is moved from the share directory location to its proper location. Make sure that you have run the Share Close command to ensure that you close the NFS and the CIFS shares.

- List Version
- List Details All
- List Details Base
- Share Open
- Share Close

9 Enter the following command to list the available release updates.

Main_Menu > Manage > Software > List Downloaded

10 Enter the following command to install the release update.

Main_Menu > Manage > Software > Install patch_name

Where patch_name is the name of the release update to install. You must make sure that the name you enter matches the update name that you uploaded on the appliance.

Note: You can also install on a remote appliance and have the software update copied and installed to that appliance. Use the following command to install a remote appliance:

Main_Menu > Manage > Software > Install patch_name target_appliance

Where patch_name is the name of the software update to install, and target_appliance is the name of the appliance that you want to install the software update.

About rolling back to a previous software update

After you have installed a software update you may determine that you need to revert back to the previously installed version. This process is referred to as a rollback operation and it is installed on your appliance by the Symantec update process. If you want to roll back the software on your appliance, you can use this
feature to go back to the previous version only. You are not able to roll back to a version of software that is greater than one release back.

After you install the update, you must log off your appliance and log back on the appliance to see the new appliance shell menu options. The Rollback command is located in the Main_Menu > Manage > Software view.

Main_Menu> Support> Software> Rollback

See “Rolling back to a previous software version” on page 56.

See “About software release updates” on page 48.

See “Installing software release updates from the appliance UI” on page 52.

Rolling back to a previous software version

You can use the appliance shell menu rollback to the previous version of NetBackup on your appliance. The following procedure explains how to roll back to a previous version.

To roll back to a previous version of NetBackup

1 Make sure that you have logged off and logged on to the appliance. That ensures that the Rollback command is present in the appliance shell menu if you decide that you want to roll back immediately after you have installed a release update.

2 From the appliance shell menu, enter the following command:

   Main_Menu> Manage> Software> Rollback

3 At the following prompt, press the Y key to answer yes.

   Do you want to rollback to x.x.x.x? (y/n)

   Where x.x.x.x is the number of the previous software version.

   The rollback process requires various processes to be stopped and started. In addition, the previous version that is found, is displayed for you to see.

4 After Rollback has completed, log off and then log back on to your appliance.

See “About rolling back to a previous software update” on page 55.

See “About software release updates” on page 48.

See “Installing software release updates from the appliance UI” on page 52.
About installing and rolling back an EEB

Emergency engineering binaries are provided to customer on an individual basis to meet specific needs for that customer. If you have one or more EEBs that you want to install you should store them locally so that you can upload them to the appliance using the appliance shell menu.

See “Installing an EEB” on page 57.

If you have installed multiple EEBs, you can use this feature to select a specific EEB that you want to roll back. You can list all of the currently installed EEBs and roll back as many as you want. However, you can only roll back one EEB at a time. And you must perform the rollback process on each system individually.

See “Rolling back an EEB” on page 59.

Installing an EEB

You can use the appliance shell menu to install an EEB on an appliance. When you install an EEB you must be logged into the appliance where you intend to install the binary. You should also contact Symantec Technical Support to obtain the EEB that you need to install and store it locally on your computer. In addition, If you have multiple EEBs to install, you can only install one EEB at a time.

Note: If you want to install an EEB on multiple media servers, you must log into each appliance one at a time and install the EEB.

To upload and install an appliance EEB using the appliance shell menu

1   You should perform this procedure from a computer that is connected to the appliance as well as to the Internet.

2   Open an SSH session and log on to the appliance as an administrator.

3   Enter the following command to open the NFS and the CIFS shares:

        Main_Menu > Manage > Software > Share Open
4 Map or mount the appliance share directory as follows:

Windows systems  Map the following appliance CIFS share:
\<appliance-name>\incoming patches

UNIX systems  Mount the following appliance NFS share:
<appliance-name>:/inst/patch/incoming

Note that on Windows systems, you are prompted to provide the user name, admin, and its corresponding password.

5 Copy the EEB from your local computer to this mapped directory.
You should have already obtained the EEB from Symantec Technical Support.

Note: The Software > Check and Software > Download method applies only for uploading software release updates.

6 Unmap or unmount the directory after you have successfully downloaded the EEB.

7 From the appliance, enter the following command to close the NFS and the CIFS shares:
Main_Menu > Manage > Software > Share Close

Once the EEB is downloaded on to the share directory that you defined in Step 3, it is moved to the proper location. You are not notified that this move has occurred.

If you run the List EEBs Downloaded command before you run the Share Close command, the update is still moved from the share directory location to its proper location. Make sure that you have run the Share Close command to ensure that you close the NFS and the CIFS shares.

8 Enter the following command to list the available EEBs.
Main_Menu > Manage > Software > List EEBs

9 Enter the following command to install the release update.
Main_Menu > Manage > Software > Install patch_name

Where patch_name is the name if the EEB to install. You must make sure that the name you enter matches the EEB name that you uploaded on the appliance.

See “About installing and rolling back an EEB” on page 57.
See “Rolling back an EEB” on page 59.
Rolling back an EEB

With the Rollback feature enabled you can use the `Software > List` command with the `Software > Rollback` command to view the currently installed EEBs and rollback any of them.

If you determine that you need to rollback one or more EEBs, you must know the name of the EEB so that you can define which EEB you want to roll back. To see the list of EEBs that are currently installed, you can run the following `List` command.

```
Main_Menu > Manage > Software > List EEBs
```

The output from this command produces a list of EEB names that appear similar to the following:

```
SYMC_NBAPP_EEB_2.0.0.0-0
```

To rollback the EEB file, `SYMC_NBAPP_EEB_2.0.0.0-0`, run the following command.

```
Main_Menu > Manage > Software> Rollback SYMC_NBAPP_EEB_2.0.0.0-0
```

The process prompts you to confirm that you want to roll back that particular EEB. That is your chance to verify that the EEB name is correct. If it is, then click the Y key for yes. If it is not the correct EEB, click the N key for no and enter a new EEB name.

You cannot specify more than one EEB with this command. If you have multiple EEBs to roll back, then you have to roll back each EEB individually.

See “About rolling back to a previous software update ” on page 55.

See “Rolling back to a previous software version” on page 56.

About appliance supported tape devices

The following describes the tape device support for the NetBackup appliance:

<table>
<thead>
<tr>
<th>Tape library</th>
<th>The NetBackup appliance supports backup to tape libraries that are of NetBackup type TLD (tape library DLT). DLT is an acronym for digital linear tape.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>For the TLD types that NetBackup supports, see the NetBackup hardware compatibility list at the following URL:</td>
</tr>
<tr>
<td></td>
<td><a href="http://symantec.com/docs/TECH76495">http://symantec.com/docs/TECH76495</a></td>
</tr>
</tbody>
</table>
The NetBackup appliance supports Linear Tape - Open (LTO) tape drives that are capable of encryption. The NetBackup appliance encrypts all tapes automatically to ensure that all tapes that are moved off-site are secure.

For supported tape drives, see the NetBackup hardware compatibility list at the following URL:

http://symantec.com/docs/TECH76495

Note: WORM tape is not currently supported.

Tape drives

Tapes with the barcode prefix of CLN are treated as cleaning tapes. Tapes with any other barcode prefix are treated as normal tapes.

See “Adding external robots to the NetBackup appliance” on page 60.

**Adding external robots to the NetBackup appliance**

After the Fibre Channel HBA card has been installed, you can add external robots to the appliance.

Use the following procedure to add robots to the appliance.

**To add an external robot to the appliance**

1. Set any physical address switches to the appropriate setting as described in the instructions from the vendor.
2. Connect the robot to the HBA card as described in the instructions from the vendor.
3. Install and configure the robot software so that the robot works with the operating system, as described in the instructions from the vendor. The operating system must be able to recognize the robot before you can configure it to work with the appliance. (This is an optional step.)
4. Configure the added robot for backups as follows:

   - For NetBackup 5200 media server only appliances: Use the NetBackup Administration Console. See to "Configuring robots and drives" in the *NetBackup Administrator's Guide, Volume I.*

See “About appliance supported tape devices” on page 59.
About disk storage configuration

You can view and change the configuration of the appliance disk storage units. The following tables describe the parameters and the fields that are displayed.

Table 3-2  Disk Storage Summary of each storage device as viewed from the appliance user interface

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Device</td>
<td>The name of the disk storage unit.</td>
</tr>
<tr>
<td>State</td>
<td>Displays whether the storage unit is in use.</td>
</tr>
<tr>
<td>Capacity</td>
<td>Shows the amount of disk space (in GB) that is available for the storage unit.</td>
</tr>
<tr>
<td>Status</td>
<td>Provides a status of the disk storage unit. Provides a link to the hardware monitoring page.</td>
</tr>
</tbody>
</table>

Table 3-3  Disk Storage Summary of Storage Allocation as viewed from the appliance user interface

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disk Group</td>
<td>The type of the disk storage volumes.</td>
</tr>
<tr>
<td>Note:</td>
<td>For the appliances that are configured as a master server, <strong>Catalog Volume</strong> appears instead of <strong>AdvancedDisk Volume</strong>.</td>
</tr>
<tr>
<td>Current Size (GB)</td>
<td>The current size (in GB) of the storage volumes.</td>
</tr>
<tr>
<td>Used (GB)</td>
<td>The amount of used disk space (in GB) for the storage volumes.</td>
</tr>
<tr>
<td>Storage Unit Name</td>
<td>Shows the names of the disk storage units.</td>
</tr>
<tr>
<td>Note:</td>
<td>For the appliances that are configured as a master server, these fields are blank and disabled.</td>
</tr>
<tr>
<td>New Size (GB)</td>
<td>Lets you change the size (in GB) of a disk storage unit. After you enter the new size, you must click <strong>Resize</strong>.</td>
</tr>
<tr>
<td>Note:</td>
<td>If you plan to resize disk storage, Symantec highly recommends that you do so only when there is low system activity or during downtimes.</td>
</tr>
<tr>
<td>Resize Percentage (%)</td>
<td>Shows the percentage amount of the resized storage disk unit.</td>
</tr>
</tbody>
</table>
About license key management on the NetBackup appliance

You can review, add, and delete license keys through the administrative Web UI. The following describes the displayed license key information:

Upper table
- **Key**
  Shows all of the installed license keys.
- **Type**
  Describes the license type.
- **Expiry Date**
  Indicates when the license expires.

Lower table
- **Feature ID**
  Identifies the feature number that is associated with the selected license key.
- **Feature Name**
  Identifies the feature name that is associated with the selected license key.

See “Managing license keys on the NetBackup appliance” on page 62.

Managing license keys on the NetBackup appliance

The following procedures describe how to view, add, and delete NetBackup option license keys through the appliance user interface or the appliance shell menu.

**To view, add, and delete license keys through the administrative Web UI**

1. Log in to the administrative Web UI.
2. Click **Manage > NetBackup License**
   
   All installed license keys, associated feature IDs, and associated feature names appear.
3. To add new license keys, do the following:
   - Click **Add**.
   - In the **Add License Key** dialog box, enter the license key for the option that you want to install.
   - Click **OK**.
4. To delete license keys, do the following:
In the Key column, select the license keys that you want to delete by clicking the check box next to the license key number.

After you have selected the appropriate license keys click Delete.

To view, add, and delete license keys through the appliance shell menu

1 To view a list of all installed license keys or view the details of each key, enter one of the following commands:
   - Main_Menu > Manage > License > List
     A complete list of installed license keys appears.
   - Main_Menu > Manage > License > ListInfo
     The associated feature IDs and feature names appear.

2 To add license keys, do the following:
   - Enter Main_Menu > Manage > License > Add.
   - Enter the license key for the option that you want to install. Then press Enter.
   - To add another license key, press y.
   - Repeat the previous step or press n to exit.

3 To delete license keys, do the following:
   - Enter Main_Menu > Manage > License > Remove.
   - Enter the license key for the option that you want to remove. Then press Enter.
   - To remove another license key, press y.
   - Repeat the previous step or press n to exit.

Expanding the bandwidth on the NetBackup appliance

The NetBackup 52xx has the capability to provide link aggregation. Link aggregation increases the bandwidth and availability of the communications channel between the appliance and other devices. Link aggregation is enabled by default when you perform the initial network configuration from the administrative Web UI or the appliance shell menu.

You can use the command-line interface to enable or disable link aggregation, as well as view the status of the link aggregation.

Use the following commands to enable, disable, and view the status of link aggregation:
To enable the network link aggregation:
Main_Menu > Network > LinkAggregation Enable

To disable the network link aggregation:
Main_Menu > Network > LinkAggregation Disable

To show the status of the network link aggregation:
Main_Menu > Network > LinkAggregation Status

See “About the NetBackup Appliance communications connections” on page 64.

About the NetBackup Appliance communications connections

The appliances include several ports that may be useful if you want to expand its capabilities.

The following describes the ports on the 5200 4U appliance.

<table>
<thead>
<tr>
<th>Port or jack</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. USB 2.0 ports (2)</td>
<td>Use to connect a mouse, keyboard, and other USB2 devices to the appliance.</td>
</tr>
<tr>
<td>2. System serial port</td>
<td>Use to expand the functions of the operating system (OS) and third-party software. To be used only at the direction of Symantec Technical Support.</td>
</tr>
<tr>
<td>3. VGA port</td>
<td>Use to connect a monitor or display to the appliance.</td>
</tr>
<tr>
<td>4. 1GB/s Ethernet port (NIC2)</td>
<td>Service network port that is used to connect the appliance to the application server (AS). Data in the AS is backed up and recovered to the appliance through this port.</td>
</tr>
</tbody>
</table>
### Table 3-4 5200 4U appliance communications connections (continued)

<table>
<thead>
<tr>
<th>Port or jack</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. 1GB Ethernet port (NIC1)</td>
<td>Use to connect a laptop to the appliance.</td>
</tr>
<tr>
<td>6. IPMI port</td>
<td>Management network port that is used to manage and maintain the appliance through the network.</td>
</tr>
<tr>
<td>7. 10GB/s Ethernet dual-port NIC</td>
<td>Service network port that is used to connect the appliance to the application server (AS). Data in the AS is backed up and recovered to the appliance through this port.</td>
</tr>
<tr>
<td>8. Fibre Channel port</td>
<td>Use to connect TLD tape storage devices to the appliance.</td>
</tr>
</tbody>
</table>

The following describes the ports on the 5220 2U appliance.

![Diagram showing ports 1 to 8]

### Table 3-5 5220 2U appliance communications connections

<table>
<thead>
<tr>
<th>Port or jack</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. RJ-45 Serial A port</td>
<td>Use to expand the functions of the operating system (OS) and third-party software. To be used only at the direction of Symantec Technical Support.</td>
</tr>
<tr>
<td>2. VGA port</td>
<td>Use to connect a monitor or display to the appliance.</td>
</tr>
<tr>
<td>3. USB 2.0 ports (4)</td>
<td>Use to connect a mouse, keyboard, and other USB2 devices to the appliance.</td>
</tr>
<tr>
<td>4. 1GB Ethernet port (NIC1)</td>
<td>Use to connect a laptop to the appliance.</td>
</tr>
<tr>
<td>5. 1GB/s Ethernet port (NIC2)</td>
<td>Service network port that is used to connect the appliance to the application server (AS). Data in the AS is backed up and recovered to the appliance through this port.</td>
</tr>
</tbody>
</table>
### Table 3-5 5220 2U appliance communications connections (continued)

<table>
<thead>
<tr>
<th>Port or jack</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Symantec Remote Management NIC (IPMI)</td>
<td>Management network port that is used to manage and maintain the appliance through the network. To be used only at the direction of Symantec Technical Support.</td>
</tr>
<tr>
<td>7. High profile PCI card expansion slots (3)</td>
<td>Use for expanding Ethernet connections (1GB or 10GB), in dual-port or quad-port configurations. Also used for Fibre Channel HBA expansion card for connection to TLD tape storage devices.</td>
</tr>
<tr>
<td>8. Low profile PCI card expansion slots (2)</td>
<td>Use for expanding Ethernet connections (1GB or 10GB), in dual-port or quad-port configurations.</td>
</tr>
</tbody>
</table>

See “Expanding the bandwidth on the NetBackup appliance” on page 63.

See “About software release updates” on page 48.

See “Installing software release updates from the appliance UI” on page 52.
Disaster recovery

This chapter includes the following topics:

■ About disaster recovery
■ About reimaging a NetBackup appliance
■ Reimaging a NetBackup appliance from the USB flash drive

About disaster recovery

There are numerous situations that can cause fatal conditions and result in the need for disaster recovery. In a disaster recovery situation, it is critical to determine the cause of the disaster and recover as much data from the appliance as possible. Therefore, before you attempt to recover your appliance, contact Symantec Technical Support.

The environment that you have configured around your appliance plays an important role on the level of recovery you can achieve. An environment that consists of a standalone primary (master server) appliance offers the least amount of recovery solutions. A failure that is severe enough to bring your appliance down, may mean that it is impossible to recover the data on the system. Symantec's support engineers work with you to determine whether they can recover your appliance. If your appliance is not recoverable, then Support may suggest that you rebuild your appliance. If that option is not feasible, then you may need to replace your appliance completely.

However, an appliance that is configured with one or more secondary appliances, or configured with a tape storage unit, there is a much better chance that its data can be recovered.

For information about how to protect the NetBackup catalog, see the NetBackup administrator's guide for the NetBackup 7.1 release. The NetBackup 7.1 documentation is available from the following Web page:
About reimaging a NetBackup appliance

If you experience major problems with the appliance software, you may need to reimage it. A couple of options are available to you to help you in this situation. You can use the 16GB USB flash drive that was included with your appliance to reimage your appliance. Or you can use the appliance shell menu to run a FactoryReset command to reset your appliance to its original default settings.

**Warning:** Reimaging or a Factory Reset will wipe out the backup data.

### Table 4-1

<table>
<thead>
<tr>
<th>Problem situation</th>
<th>Description</th>
</tr>
</thead>
</table>
| Problems with NetBackup operation | Erratic behavior may indicate that NetBackup needs to be reinstalled.  
The appliance must be examined to determine if NetBackup data can be saved or recovered. Those procedures must be done first before NetBackup is reinstalled. |
| Problems with the OS    | Erratic behavior may indicate that the OS needs to be reinstalled. Also, an OS crash requires reinstallation.  
NetBackup data is typically not affected. However, verification must be done first. |

You can use the `Main_Menu> Support> FactoryReset` command to reset your appliance to its original factory default settings. If you experience issues with your appliance, then you may want to contact Symantec Technical Support. The Technical Support Engineer can help you determine whether your data can be saved or recovered. And they can help you use the `FactoryRest` command to reset the appliance configuration to factory settings.

**Note:** If you use the FactoryReset command to reset your appliance, your administrator password is also reset.

If technical support indicates that they cannot save any of your data, then they may recommend that you use the NetBackup 5200 16GB Flash drive recovery media to reimage your appliance.
When you reimage an appliance with the USB flash drive, all applications are
reinstalled and set to factory defaults. After you reinstall an application or reimage
the appliance, you must configure your system the same way you did as a new
appliance. The following list explains the tasks that Symantec Technical Support
helps you perform if you need to reimage an appliance.

Symantec Technical Support helps you do the following:

- Determine the source of the problem.
- Determine which data can be saved or recovered.
- Save or recover any necessary data.
- Reinstall the appliance back to the factory setting.
- Configure your appliance.
- Test the appliance to ensure that the reinstalled application works correctly.
- Investigate whether you can recover any replicated information to the
  appliance.

See “Reimaging a NetBackup appliance from the USB flash drive” on page 69.
See “About disaster recovery” on page 67.

Reimaging a NetBackup appliance from the USB flash drive

When you choose to use the 16GB flash drive to reimage your appliance you
reinstall all of the software that originally comprised your appliance. This type
of reimaging means that you remove all of the data and any software updates that
may be currently on the appliance. For this reason, Symantec recommends that
you configure a backup policy on the master server to replicate any data that you
want backed up to an alternate server before you reimage an appliance.

**Note:** After you reimage the appliance, you can install the latest software updates
to bring your appliance to the latest version level.

You can reimage a standalone appliance or reimage an appliance that has an
external expansion unit configured. The following topics guide you through each
process.

See “Reimaging a standalone appliance” on page 70.
See “Reimaging an appliance with a storage expansion unit configured” on page 70.
Reimaging a standalone appliance

The following procedure explains how to reimage a standalone appliance from the 16GB USB flash drive.

**To reimage an appliance from the USB flash drive**

1. Log off and turn off your appliance.
2. Insert the USB flash drive into a USB port on the back of the appliance.
3. Turn on the appliance.
   
   As the appliance begins to boot, a screen appears and enables you to select if you want to boot the appliance from the hard drive or from the external flash drive.
4. Select the appropriate appliance from the list that appears. You can select either 5200 or 5220. An error message appears if you select the wrong appliance.
   
   This process returns your appliance to the version of software that is installed on the USB flash drive.
5. After your system completes the reimaging process, you must configure your appliance again.
   
   See “Reimaging a NetBackup appliance from the USB flash drive” on page 69.

Reimaging an appliance with a storage expansion unit configured

If you need to reimage an appliance that is configured with a storage expansion unit, refer to the, "Reimaging a NetBackup appliance with a storage expansion unit configured" topic in the *Symantec NetBackup 5200 Series Troubleshooting Guide*. This document is located on the Symantec Support Web site.

http://www.symantec.com/docs/DOC2792

See “Reimaging a NetBackup appliance from the USB flash drive” on page 69.
Decommissioning an appliance

This chapter includes the following topics:

- About decommissioning an appliance
- Decommissioning a NetBackup master appliance
- Decommissioning a NetBackup media appliance

About decommissioning an appliance

To decommission an appliance means to physically remove or eliminate the appliance from the backup environment. When you decide which appliance to decommission, you must make sure that the appliance is not configured as a backup destination for any clients.

You may need to decommission an appliance for any of the following reasons:

- The appliance has issues and needs to be reset to factory settings.
- The appliance has hardware issues and needs to be replaced.
- The appliance is no longer needed (down-sizing your backup environment).
- The appliance may need to be removed from the network domain to be repaired.
- The appliance is no longer supported and needs to be replaced.

After you determine that you need to decommission a media appliance, you can provision a new appliance to act as a target for all backups. With this technique the load is decreased on the existing appliance and moved to the new appliance. The existing can be removed from the domain eventually.

See “Decommissioning a NetBackup media appliance” on page 72.
Decommissioning a NetBackup master appliance

When you decommission a master appliance it means all of the catalog and backup images stored on the disk will be lost. You can simply use Factory reset command to reset this appliance.

**To decommission a NetBackup master appliance**

1. Open an SSH session on the master appliance.
2. Log on as admin.
3. Run the following command and follow any additional prompts to reset the appliance to factory default settings.

   ```
   Main_Menu > Support > FactoryReset
   ```

Decommissioning a NetBackup media appliance

When you decommission a media appliance it means all of the backup images stored on the disk will be lost. You must use the appliance shell menu to decommission a media appliance from a master appliance. Use the following procedure to decommission a media backup appliance to another appliance.

**To decommission a NetBackup media appliance**

1. Open an SSH session on the master appliance.
2. Log on as admin.
3. Enter the following command to media appliance and move the ownership of the tape library:

   ```
   Main > Appliance > Remove MediaServer TargetMediaServer
   ```

   The variable `MediaServer` is the host name of the media server that you want to decommission. This media server can be an appliance or non-appliance media server. And `TargetMediaServer` is the host name of the media server that you have selected to receive the media. Again, the `TargetMediaServer` media server can be an appliance or non-appliance media server.

   You can specify `NONE` for the `TargetMediaServer` variable if you do not need to move the media. If you specify `NONE` for the `TargetMediaServer` variable, then all of the backup images on the media that are attached to the media server appliance are lost.

4. Enter `Yes`, to confirm that you want to remove this appliance.
5 If you designated a valid media server appliance in the `TargetMediaServer` variable, enter the following command on each of the appliances to shut them down after a successful decommission of the appliance.

```
Main > Support > Shutdown
```

6 You must cable the tape library to the target media server appliance.

7 Run the following command to turn on the media server.

```
Main > Support > Reboot
```

8 Enter the following command to configure the tape library to a media server appliance that is defined in the `TargetMediaServer` variable.

```
Main > NetBackup > Libraries > Configure MediaServer
```

**Note:** If you want to use a media server that is not an appliance media server, then you must use the NetBackup Administration Console to configure the tape library to that media server.

Where `MediaServer` is the media server appliance that you connected to the tape library and need to configure.

9 From the decommissioned media server, run the following command and follow any additional prompts to reset the appliance to factory default settings.

```
Main_Menu > Support > FactoryReset
```

Once you have completed the factory reset process and finished decommissioning the media server, you can configure it to serve any role that you choose. If you configure it as a master server, then you can use the `Main_Menu > Appliance > Add` command to add a media appliance.

If a problem occurs, contact Symantec Technical Support for assistance.

**Note:** After you decommission a media server, the process does not remove disk pool and storage server objects of type PureDisk. You must use the NetBackup Administration Console from the NetBackup master server to remove these objects.

See the section "Decommissioning a media server" in the *Symantec NetBackup Administrator's Guide, Volume I* for more information on how to decommission a NetBackup media server.

You can also refer to the following Technote on the Symantec Support Web site:

http://www.symantec.com/docs/TECH31168

See “About decommissioning an appliance” on page 71.
Troubleshooting

This chapter includes the following topics:

- About troubleshooting the appliance
- NetBackup Appliance log file location information
- About password recovery

About troubleshooting the appliance

If you experience trouble with your appliance, it is important that you can define the problem and collect any supporting information. When you reach this point, you should contact Symantec Technical Support. A technical support representative works with you to diagnose the trouble and produce a satisfactory resolution.

In addition, you can refer to the Symantec NetBackup 5200 Series Troubleshooting Guide on the Symantec Support Web site for information about troubleshooting the NetBackup 5200 and 5220 appliances. This document is an online-only document that contains the latest software troubleshooting information about the appliance.

http://www.symantec.com/docs/DOC2792

See “NetBackup Appliance log file location information” on page 75.
See “About password recovery” on page 77.

NetBackup Appliance log file location information

As you define and troubleshoot a problem, always try to capture potentially valuable information. The NetBackup appliance has the ability to capture data in the log locations that are shown in the Table 6-1.
Browse and view the log files as follows:

■ Enter browse mode by running the `Main_Menu > Support > Logs Browse` command in the appliance command shell. The `LOGROOT/>` prompt appears.

■ To display the available log directories on your appliance, type `ls` at `LOGROOT/>` prompt.

■ To see the log files that are available in any of the log directories, use the `cd` command to change directories to the log directory of your choice. The prompt changes to show the directory that you are in. For example, if you changed directories to the `GUI` directory, the prompt appears as `LOGROOT/GUI/>`. From that prompt you can use the `ls` command to display the available log files in the `GUI` log directory.

■ To view the files, use the `less` or `tail` command. Files are marked with `<FILE>` and directories with `<DIR>`.

You can use the `Main_Menu > Support > Logs` commands to do the following:

■ Upload the log files to Symantec Technical Support.

■ Set log levels.

■ Export or remove CIFS and NFS shares.

Refer to the `Symantec NetBackup 5200 Series Command Reference Guide` for more information on how to use the `Logs` commands.

<table>
<thead>
<tr>
<th>NetBackup appliance logs</th>
<th>Log file location</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetBackup 52xx appliance operating system (OS) install log</td>
<td>&lt;DIR&gt; OS</td>
</tr>
<tr>
<td></td>
<td>/var/log/iso_postinstall.log</td>
</tr>
<tr>
<td></td>
<td>/var/log/boot.msg</td>
</tr>
<tr>
<td></td>
<td>/var/log/boot.oms</td>
</tr>
<tr>
<td>NetBackup install log</td>
<td>&lt;DIR&gt; NBU</td>
</tr>
<tr>
<td></td>
<td>/tmp/install_trace.&lt;pid&gt;</td>
</tr>
<tr>
<td>Volume (VxVM) configuration log</td>
<td>&lt;DIR&gt; VxVM</td>
</tr>
<tr>
<td></td>
<td>/var/log/sf.log</td>
</tr>
<tr>
<td>NetBackup 52xx appliance configuration log</td>
<td>&lt;DIR&gt; APPLIANCE</td>
</tr>
<tr>
<td></td>
<td>/var/log/config_nb_factory.log</td>
</tr>
</tbody>
</table>
### Table 6-1  NetBackup 5200 log file locations *(continued)*

<table>
<thead>
<tr>
<th>NetBackup appliance logs</th>
<th>Log file location</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetBackup 52xx appliance command log</td>
<td>&lt;DIR&gt; APPLIANCE /log/app_change_control.log</td>
</tr>
<tr>
<td>NetBackup 52xx appliance debug log</td>
<td>&lt;DIR&gt; APPLIANCE /log/app_debug.log</td>
</tr>
<tr>
<td>NetBackup logs</td>
<td>&lt;DIR&gt; NBU /log</td>
</tr>
<tr>
<td>NetBackup Administrative Web user interface log</td>
<td>&lt;DIR&gt; WEBSERVER /opt/SYMCOpsCenterGUI/logs</td>
</tr>
<tr>
<td>NetBackup Web server log</td>
<td>&lt;DIR&gt; WEBSERVER /opt/SYMCOpsCenterWebServer/logs</td>
</tr>
</tbody>
</table>

You can view additional information about the NetBackup troubleshooting error codes from the appliance user interface. Click **Monitor > Jobs** and then click a status code link in the jobs table to view the error code details.

See “About disaster recovery” on page 67.

See “About reimaging a NetBackup appliance” on page 68.

### About password recovery

Symantec understands that there may be situations where you need to recover your administrator (admin) password. For example, an employee that maintains the password may leave the company, or you may lose or forget the password.

If any of these situations occur, call Symantec Technical Support for assistance.
Troubleshooting

About password recovery
About Call Home upload information

This appendix includes the following topics:

- About the appliance hardware information that is uploaded
- About the enclosure information that is uploaded

About the appliance hardware information that is uploaded

The Call Home feature is designed to upload appliance-specific and the customer-specific information to a Symantec Call Home server that Symantec Support can use to provide assistance to you. The hardware information that is gathered covers the appliance and any enclosures that are configured.

The following is an example of the appliance hardware information that is bundled together into a report and uploaded to the Call Home server.

Hardware Monitor Information
+-----------------------------------------------------------+
| Manufacturer | Serial |
|--------------------------------------+--------------------|
| Symantec Corporation | 210235G317Z0A5000018 |
+-----------------------------------------------------------+

Power Supply Information
+-----------------------------------------------------------------+
| ID| Status | Wattage | L.WaterMark | H.WaterMark | ErrorStatus |
+-----------------------------------------------------------------+
### CPU Information

<table>
<thead>
<tr>
<th>ID</th>
<th>Status</th>
<th>Voltage</th>
<th>L.WaterMark</th>
<th>H.WaterMark</th>
<th>ErrorStat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Presence detected</td>
<td>0.88 Volts</td>
<td>0.770 V</td>
<td>1.330 V</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Presence detected</td>
<td>0.97 Volts</td>
<td>0.770 V</td>
<td>1.330 V</td>
<td>0</td>
</tr>
</tbody>
</table>

### Fan Information

<table>
<thead>
<tr>
<th>ID</th>
<th>Status</th>
<th>Speed</th>
<th>L.WaterMark</th>
<th>H.WaterMark</th>
<th>ErrorStatus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Device Present</td>
<td>5875 RPM</td>
<td>1974 RPM</td>
<td>8977 RPM</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Device Present</td>
<td>6674 RPM</td>
<td>1974 RPM</td>
<td>8977 RPM</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Device Present</td>
<td>6674 RPM</td>
<td>1974 RPM</td>
<td>8977 RPM</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Device Present</td>
<td>6251 RPM</td>
<td>1974 RPM</td>
<td>8977 RPM</td>
<td>0</td>
</tr>
</tbody>
</table>

### Disk Information

<table>
<thead>
<tr>
<th>ID</th>
<th>Slot Number</th>
<th>Status</th>
<th>Capacity</th>
<th>Type</th>
<th>Enclosure ID</th>
<th>ErrorStatus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>Hotspare</td>
<td>930.390GB</td>
<td>SATA</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>Online</td>
<td>930.390GB</td>
<td>SATA</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>Online</td>
<td>930.390GB</td>
<td>SATA</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>Online</td>
<td>930.390GB</td>
<td>SATA</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>Online</td>
<td>930.390GB</td>
<td>SATA</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>Online</td>
<td>930.390GB</td>
<td>SATA</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>
### HBA Information

<table>
<thead>
<tr>
<th>ID</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No HBA(s) detected</td>
</tr>
</tbody>
</table>

### Temperature Information

<table>
<thead>
<tr>
<th>ID</th>
<th>Type</th>
<th>Temperature</th>
<th>L.WaterMark</th>
<th>H.WaterMark</th>
<th>ErrStat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Intake Vent Temp</td>
<td>35 degrees C</td>
<td>0 deg C</td>
<td>70 deg C</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Outtake Vent Temp</td>
<td>51 degrees C</td>
<td>0 deg C</td>
<td>70 deg C</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Backplane Temp</td>
<td>35 degrees C</td>
<td>0 deg C</td>
<td>70 deg C</td>
<td>0</td>
</tr>
</tbody>
</table>

### RAID Information

<table>
<thead>
<tr>
<th>ID</th>
<th>Name</th>
<th>Status</th>
<th>Capacity</th>
<th>Type</th>
<th>Disks</th>
<th>ErrorStat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VD-0</td>
<td>Optimal</td>
<td>930.390GB</td>
<td>RAID-1</td>
<td>1,2</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>VD-1</td>
<td>Optimal</td>
<td>6.359TB</td>
<td>RAID-6</td>
<td>3,4,5,6,7,8,9,10,11</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>VD-0</td>
<td>Optimal</td>
<td>8.182TB</td>
<td>RAID-6</td>
<td>0,1,2,3,4,11,6,7,8,9,10</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>VD-1</td>
<td>Optimal</td>
<td>8.182TB</td>
<td>RAID-6</td>
<td>0,1,2,3,4,5,6,7,8,9,10</td>
<td>0</td>
</tr>
</tbody>
</table>
See “About the enclosure information that is uploaded” on page 82.
See “About the Call Home feature” on page 40.

**About the enclosure information that is uploaded**

The following is an example of the enclosure hardware information for two enclosures that is bundled together into a report and uploaded to the Call Home server.

**Enclosure 1 Disk Information**

<table>
<thead>
<tr>
<th>ID</th>
<th>Slot Num</th>
<th>Status</th>
<th>Capacity</th>
<th>Type</th>
<th>Enclosure ID</th>
<th>Error Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>Online</td>
<td>931.0GB</td>
<td>SATA</td>
<td>43</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>Online</td>
<td>931.0GB</td>
<td>SATA</td>
<td>43</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>Online</td>
<td>931.0GB</td>
<td>SATA</td>
<td>43</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>Online</td>
<td>931.0GB</td>
<td>SATA</td>
<td>43</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>Online</td>
<td>931.0GB</td>
<td>SATA</td>
<td>43</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>Online</td>
<td>931.0GB</td>
<td>SATA</td>
<td>43</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
<td>Online</td>
<td>931.0GB</td>
<td>SATA</td>
<td>43</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>7</td>
<td>Online</td>
<td>931.0GB</td>
<td>SATA</td>
<td>43</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>8</td>
<td>Online</td>
<td>931.0GB</td>
<td>SATA</td>
<td>43</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>9</td>
<td>Online</td>
<td>931.0GB</td>
<td>SATA</td>
<td>43</td>
<td>0</td>
</tr>
<tr>
<td>11</td>
<td>10</td>
<td>Online</td>
<td>931.0GB</td>
<td>SATA</td>
<td>43</td>
<td>0</td>
</tr>
<tr>
<td>12</td>
<td>11</td>
<td>Hotspare</td>
<td>931.0GB</td>
<td>SATA</td>
<td>43</td>
<td>0</td>
</tr>
</tbody>
</table>

**Enclosure 1 Fan Information**
### Enclosure 1 Power Supply Information

<table>
<thead>
<tr>
<th>ID</th>
<th>Status</th>
<th>ErrorStatus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Presence detected</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Failure detected</td>
<td>1</td>
</tr>
</tbody>
</table>

### Enclosure 1 Temperature Information

<table>
<thead>
<tr>
<th>ID</th>
<th>Status</th>
<th>Temperature</th>
<th>L.WaterMark</th>
<th>H.WaterMark</th>
<th>ErrorStat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>OK</td>
<td>27 degree C</td>
<td>0 degrees C</td>
<td>70 degrees C</td>
<td>0</td>
</tr>
</tbody>
</table>

### Enclosure 2 Disk Information

<table>
<thead>
<tr>
<th>ID</th>
<th>Slot Num</th>
<th>Status</th>
<th>Capacity</th>
<th>Type</th>
<th>Enclosure ID</th>
<th>ErrorStat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>Online</td>
<td>931.0GB</td>
<td>SATA</td>
<td>55</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>Online</td>
<td>931.0GB</td>
<td>SATA</td>
<td>55</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>Online</td>
<td>931.0GB</td>
<td>SATA</td>
<td>55</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>Online</td>
<td>931.0GB</td>
<td>SATA</td>
<td>55</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>Online</td>
<td>931.0GB</td>
<td>SATA</td>
<td>55</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>Unconfig</td>
<td>931.0GB</td>
<td>SATA</td>
<td>55</td>
<td>1</td>
</tr>
</tbody>
</table>
## Enclosure 2 Fan Information

<table>
<thead>
<tr>
<th>ID</th>
<th>Status</th>
<th>Speed</th>
<th>LowWaterMark</th>
<th>HighWaterMark</th>
<th>ErrorStatus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>OK</td>
<td>4240 RPM</td>
<td>1974 RPM</td>
<td>8977 RPM</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>OK</td>
<td>4390 RPM</td>
<td>1974 RPM</td>
<td>8977 RPM</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>OK</td>
<td>4280 RPM</td>
<td>1974 RPM</td>
<td>8977 RPM</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>OK</td>
<td>4410 RPM</td>
<td>1974 RPM</td>
<td>8977 RPM</td>
<td>0</td>
</tr>
</tbody>
</table>

## Enclosure 2 Power Supply Information

<table>
<thead>
<tr>
<th>ID</th>
<th>Status</th>
<th>ErrorStatus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Presence detected</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Failure detected</td>
<td>1</td>
</tr>
</tbody>
</table>

## Enclosure 2 Temperature Information

<table>
<thead>
<tr>
<th>ID</th>
<th>Status</th>
<th>Temperature</th>
<th>L.WaterMark</th>
<th>H.WaterMark</th>
<th>ErrorStat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>OK</td>
<td>24 degree C</td>
<td>0 degrees C</td>
<td>70 degrees C</td>
<td>0</td>
</tr>
</tbody>
</table>
See “About the appliance hardware information that is uploaded” on page 79.
See “About the Call Home feature” on page 40.
About Call Home upload information

About the enclosure information that is uploaded
Technical specifications

This appendix includes the following topics:

- Technical specifications for NetBackup appliances
- Safety and EMC standards compliance for NetBackup appliances
- Industry standards compliance for NetBackup appliances
- Certifications for NetBackup appliances
- FCC information for NetBackup appliance users

Technical specifications for NetBackup appliances

The following information describes the technical specifications for NetBackup appliances.

Table B-1 Technical specifications for NetBackup appliances

<table>
<thead>
<tr>
<th>Specification</th>
<th>NetBackup 5200</th>
<th>NetBackup 5220</th>
</tr>
</thead>
</table>
| Power requirements | ■ Input voltage range 100 V to 127 V, 200 V to 240 V  
                  ■ Input voltage frequency range 47 Hz to 63 Hz  
                  ■ Power consumption 700 W  
                  ■ Input voltage range 100 V to 127 V, 200 V to 240 V  
                  ■ Input voltage frequency range 50 Hz to 60 Hz  
                  ■ Power consumption 750 W |
| Dimensions and weight | ■ Dimensions 6.90 in. H x 17.56 in. W x 27 in. D (175 mm H x 446 mm W x 685 mm D)  
                  ■ Weight 104 lbs. (47 kg)  
                  ■ Dimensions 3.44 in. H x 16.93 in. W x 27.75 in. D (87.30 mm H x 430 mm W x 704.8 mm D)  
                  ■ Weight 65 lbs. (29.5 kg) |
## Table B-1  Technical specifications for NetBackup appliances (continued)

<table>
<thead>
<tr>
<th>Specification</th>
<th>NetBackup 5200</th>
<th>NetBackup 5220</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>■ Operating temperature range 41° to 95°F (5°C to 35°C)</td>
<td>■ Operating temperature range 50° to 95°F (10°C to 35°C)</td>
</tr>
<tr>
<td></td>
<td>■ Non-operating (storage) temperature range -40° to 158°F (-40° C to +70° C)</td>
<td>■ Non-operating (storage) temperature range -40° to 158°F (-40° C to +70° C)</td>
</tr>
<tr>
<td></td>
<td>■ Transport temperature range -40° to 158°F (-40° C to +70° C)</td>
<td>■ Transport temperature range -40° to 158°F (-40° C to +70° C)</td>
</tr>
<tr>
<td></td>
<td>■ Temperature gradient 50°F (10° C) /hour</td>
<td>■ Temperature gradient 50°F (10° C) /hour</td>
</tr>
<tr>
<td>Relative humidity</td>
<td>5% RH to 85% RH</td>
<td>90% RH (non-condensing) at 82° F or 28° C</td>
</tr>
<tr>
<td>Noise level</td>
<td>Maximum noise level: 72 dBA (at an ambient temperature of 77° F or 25° C)</td>
<td>7.0 BA (in an idle state at an ambient temperature of 73° F or 23° C, +/- 2°)</td>
</tr>
<tr>
<td>Protocol standard compliance</td>
<td>■ IPMI2.0 Intelligent Platform Management Interface Specification Second Generation v2.0, Document Revision 1.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ SATA II Serial ATA Working Group, Serial ATA II: Extensions to Serial ATA. Revision 1.0a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ ACPI Advanced Configuration and Power Interface Specification, Revision 3.0, September 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ IP RFC0791: Internet Protocol</td>
<td></td>
</tr>
</tbody>
</table>

See “Safety and EMC standards compliance for NetBackup appliances” on page 89.
See “Industry standards compliance for NetBackup appliances” on page 90.
See “Certifications for NetBackup appliances” on page 91.
See “FCC information for NetBackup appliance users” on page 93.
See “About the NetBackup Appliance” on page 11.
Safety and EMC standards compliance for NetBackup appliances

The following information describes the listed compliance standards for the NetBackup 5200 appliance.

Table B-2  Safety and EMC standards compliance for the NetBackup 5200

<table>
<thead>
<tr>
<th>Standard</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT equipment safety standard</td>
<td>GB4943-2001</td>
</tr>
<tr>
<td>IEC standard</td>
<td>IEC 60950-1</td>
</tr>
<tr>
<td>Underwriters Laboratories (UL) safety standard</td>
<td>UL 60950-1</td>
</tr>
<tr>
<td>US EMC standard</td>
<td>FCC, 47 CFR Part 15, Subpart B</td>
</tr>
<tr>
<td>European safety standard</td>
<td>EN 60950-1</td>
</tr>
<tr>
<td>European safety directive</td>
<td>LVD Directive 2006/95/EC</td>
</tr>
<tr>
<td>European EMC directive</td>
<td>EMC Directive 2004/108/EC</td>
</tr>
<tr>
<td>European EMC standard</td>
<td>EN 55024: 1998+A1+A2</td>
</tr>
</tbody>
</table>

The following information describes the listed compliance standards for the NetBackup 5220 appliance.

Table B-3  Safety and EMC standards compliance for the NetBackup 5220

<table>
<thead>
<tr>
<th>Country</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA/Canada</td>
<td>FCC /ICES-003 - Emissions Verification</td>
</tr>
<tr>
<td>International</td>
<td>CISPR 22 - Emissions</td>
</tr>
<tr>
<td>Europe</td>
<td>EN55022 - Emissions</td>
</tr>
<tr>
<td></td>
<td>EN55024 - Immunity</td>
</tr>
<tr>
<td></td>
<td>EN61000-3-2 - Harmonics</td>
</tr>
<tr>
<td></td>
<td>EN61000-3-3 - Voltage Flicker</td>
</tr>
<tr>
<td></td>
<td>CE - EMC Directive 89/336/EEC</td>
</tr>
<tr>
<td>Japan</td>
<td>VCCI Emissions</td>
</tr>
<tr>
<td>Australia / New Zealand</td>
<td>AS/NZS 3548 Emissions</td>
</tr>
</tbody>
</table>
Table B-3  Safety and EMC standards compliance for the NetBackup 5220 (continued)

<table>
<thead>
<tr>
<th>Country</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taiwan</td>
<td>BSMI CNS13438 Emissions</td>
</tr>
<tr>
<td>Russia</td>
<td>GOST R 29216-91 Emissions</td>
</tr>
<tr>
<td></td>
<td>GOST R 50628-95 Immunity</td>
</tr>
<tr>
<td>Belarus</td>
<td>Belarus Certification</td>
</tr>
<tr>
<td>Ukraine</td>
<td>Ukraine Certification</td>
</tr>
<tr>
<td>Korea</td>
<td>KCC Certification (EMI)</td>
</tr>
<tr>
<td>China</td>
<td>GB 9254 - CNCA Certification</td>
</tr>
<tr>
<td></td>
<td>GB 17625 - (Harmonics) CNCA Certification</td>
</tr>
</tbody>
</table>

See “Industry standards compliance for NetBackup appliances” on page 90.
See “Certifications for NetBackup appliances” on page 91.
See “FCC information for NetBackup appliance users” on page 93.
See “About the NetBackup Appliance” on page 11.

Industry standards compliance for NetBackup appliances

The following information describes the industry compliance standards for the appliances.

Table B-4  Industry standards compliance for the NetBackup appliances

<table>
<thead>
<tr>
<th>Standard</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethernet standard</td>
<td>IEE 802.3</td>
</tr>
<tr>
<td>Fast Ethernet (FE) standard</td>
<td>IEE 802.3u</td>
</tr>
<tr>
<td>Gigabit Ethernet (GE) standard</td>
<td>IEE 802.3z</td>
</tr>
<tr>
<td>IEEE standard test access interface and boundary-scan architecture</td>
<td>IEEE 1149.1-2001</td>
</tr>
<tr>
<td>Failure mode and effects analysis (FMEA)</td>
<td>IEC 812</td>
</tr>
</tbody>
</table>
### Table B-4  Industry standards compliance for the NetBackup appliances (continued)

<table>
<thead>
<tr>
<th>Standard</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability, maintainability, and availability standard</td>
<td>IEC 863</td>
</tr>
<tr>
<td>Environmental protection</td>
<td>ECMA TR/70</td>
</tr>
</tbody>
</table>

See “Safety and EMC standards compliance for NetBackup appliances” on page 89.
See “Certifications for NetBackup appliances” on page 91.
See “FCC information for NetBackup appliance users” on page 93.
See “About the NetBackup Appliance” on page 11.

# Certifications for NetBackup appliances

The following describes the certifications that apply to the NetBackup 5200.

### Table B-5  Certifications for the NetBackup 5200

<table>
<thead>
<tr>
<th>Certification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCC</td>
<td>CCC (China Compulsory Certification), which is released for the products relating to human health and safety, lives and health of animals and plants, environmental protection, and public safety.</td>
</tr>
<tr>
<td>CE</td>
<td>CE (Conformite Europeenne), including EMC directive 2004/108/EC and low voltage directive 2006/95/EC.</td>
</tr>
<tr>
<td>C-tick</td>
<td>A product with a C-tick compliance label complies with applicable EMC and radiocommunication requirements. The C-tick label is mandatory for related products in Australia and New Zealand.</td>
</tr>
<tr>
<td>FCC</td>
<td>Chapter 15 in FCC (Federal Communications Commission) Rules and Regulations. The device conforms to the standard for level A digital device according to the test.</td>
</tr>
<tr>
<td>REACH</td>
<td>REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) is a compellent management rule to manage all the chemicals entering into European market preventively.</td>
</tr>
</tbody>
</table>
### Table B-5  
Certifications for the NetBackup 5200 (continued)

<table>
<thead>
<tr>
<th>Certification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UL</td>
<td>Underwriters Laboratories, Inc. (UL) is a nonprofit product safety test and certification institute.</td>
</tr>
<tr>
<td>RoHS</td>
<td>RoHS (Restriction of the Use of Certain Hazardous Substances), a directive for environmental protection released by the EU in 2003. Management on the environmental impact from the electrical and electronic products during at the production and disposal stages. RoHS restricts the maximum amount of the hazardous substances of the products at the production stage.</td>
</tr>
<tr>
<td>WEEE</td>
<td>The EU Directive on Waste of Electric and Electronic Equipment. Electrical and electronic products sold in the EU market must comply with this directive and have the mark of cross out of the wheeled bin.</td>
</tr>
</tbody>
</table>

The following describes the certifications that apply to the NetBackup 5220.

### Table B-6  
Certifications for the NetBackup 5220

<table>
<thead>
<tr>
<th>Country</th>
<th>Standard</th>
</tr>
</thead>
</table>
| USA/Canada   | NRTL Certification  
FCC/ICES-003 Class A Attestation |
| International| Ecology Declaration  |
| CENELEC Europe | CE Declaration of Conformity  |
| Japan        | VCCI Certification  |
| Australia    | C-Tick Declaration of Conformity (Australia)  |
| New Zealand  | MED Declaration of Conformity (New Zealand)  |
| Taiwan       | BSMI Certification  |
| Russia       | GOST R Certification  
GOST R 50628-95 Immunity |
| Belarus      | Belarus Certification  |
| Argentina    | IRAM Certification  |
| Korea        | KCC Certification  |
Table B-6  Certifications for the NetBackup 5220 (continued)

<table>
<thead>
<tr>
<th>Country</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>CNCA CCC Certification</td>
</tr>
<tr>
<td></td>
<td>China RoHS Environmental Friendly Use Period</td>
</tr>
</tbody>
</table>


See “Safety and EMC standards compliance for NetBackup appliances” on page 89.

See “Industry standards compliance for NetBackup appliances” on page 90.

See “FCC information for NetBackup appliance users” on page 93.

See “About the NetBackup Appliance” on page 11.

**FCC information for NetBackup appliance users**

The following describes the FCC statements that apply to NetBackup appliances.

Table B-7  FCC statements for NetBackup appliances

<table>
<thead>
<tr>
<th>Model</th>
<th>FCC statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetBackup 5200</td>
<td>This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user must correct the interference at their own expense. Modifications not expressly approved by the manufacturer can void the user's authority to operate the equipment under FCC rules.</td>
</tr>
</tbody>
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<th>FCC statement</th>
</tr>
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<td>NetBackup 5220</td>
<td>This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. For questions related to the EMC performance of this product, contact: Intel Corporation 5200 N.E. Elam Young Parkway Hillsboro, OR 97124-6497 (1-800-628-8686) This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:  ■ Reorient or relocate the receiving antenna.  ■ Increase the separation between the equipment and the receiver.  ■ Connect the equipment to an outlet on a circuit other than the one to which the receiver is connected.  ■ Consult the dealer or an experienced radio/TV technician for help. Any changes or modifications not expressly approved by the grantee of this device could void the user’s authority to operate the equipment. The customer is responsible for ensuring compliance of the modified product. Only peripherals (computer input/output devices, terminals, printers, etc.) that comply with FCC Class A or B limits may be attached to this computer product. Operation with noncompliant peripherals is likely to result in interference to radio and TV reception. All cables used to connect to peripherals must be shielded and grounded. Operation with cables, connected to peripherals that are not shielded and grounded may result in interference to radio and TV reception.</td>
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