TANDBERG DATA

Securing your Information

Product Manual

RDX® QuikStation™

Part Number 1019786 Rev. B October 2011

www.tandbergdata.com

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PART NUMBER 1019786 Revision B

REVISION HISTORY

Revision	Date	Description
A	May 2011	Initial release.
B	October 2011	Version 2.0 updates

Note: The most current information about this product is available at Tandberg Data's web site (www.tandbergdata.com).

Product Warranty Caution

The RDX QuikStation by Tandberg Data Corporation is warranted to be free from defects in materials, parts, and workmanship and will conform to the current product specification upon delivery. For the specific details of your warranty, refer to your sales contract or see the Tandberg Data web site (www.tandbergdata.com).

The warranty for the appliance shall not apply to failures caused by:

- Physical abuse or use not consistent with the operating instructions or product specifications.
- Repair or modification by any one other than Tandberg Data's personnel or agent in a manner differing from the maintenance instructions provided by Tandberg Data.
- Removal of the Tandberg Data identification label(s).
- Physical abuse due to improper packaging of returned unit.

If problems with the RDX QuikStation occur, contact your maintenance organization; do not void the product warranty by allowing untrained or unauthorized personnel to attempt repairs.

Caution

Returning the RDX QuikStation in unauthorized packaging may damage the unit and void the warranty. If you are returning the unit for repair, package it in its original packaging (or in replacement packaging obtained from your vendor.)

Contacting Tandberg Data Corporation

Visit the Support section of the Tandberg Data web site (www.tandbergdata.com) for information on contacting technical support.

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ABOUT THIS MANUAL

This manual describes how to install and operate the RDX QuikStation and is intended for use by anyone deploying the RDX QuikStation into their network environment. Familiarity with system and network configuration is highly recommended.

The following chapters are included in this manual:

Overview

- Chapter 1 provides an overview of the RDX QuikStation's features and components.

Installation setup

- Chapter 2 describes information on how to rackmount, connect, and initially configure the RDX QuikStation.
- Chapter 3 describes how to connect host computers to RDX QuikStation iSCSI targets, including how to set up iSCSI security.

Using the RDX Remote Management Console

- Chapter 4 describes RDX QuikStation system tasks, such as network configuration, and user account management.
- Chapter 5 provides information about the logical device interface in the Remote Management Console.
- Chapter 6 provides information about the physical device interface in the Remote Management Console.
- Chapter 7 describes RDX QuikStation system maintenance tasks, such as performing diagnostic tests, cloning data, and updating firmware.

Supplemental Information

- Appendix A provides error code definitions and some basic troubleshooting information.
- Appendix B provides product specifications.
- Appendix C describes important safety precautions to take when using the RDX QuikStation.

RELATED PUBLICATIONS

For additional information about the RDX QuikStation, refer to the following publications, which are available at www.tandbergdata.com.

- *RDX QuikStation Quick Start Guide, part number 1019372*
- *Field Instruction: Installing the RDX QuikStation in a Rack, part number 1019782*
- *RDX QuikStation Knowledge Base articles available online at www.tandbergdata.com*

CONVENTIONS USED IN THIS MANUAL

This manual uses the following conventions:

Note: Notes provide additional information or suggestions about the topic or procedure being discussed.

Important Read text marked by the "Important" icon for information that will help you complete a procedure or avoid extra steps.

Caution Read text marked by the "CAUTION" icon for information you must know to avoid damaging the RDX QuikStation or losing data.

Warning Read text marked by the "WARNING" icon for information you must know to avoid personal injury.

1

PRODUCT OVERVIEW

The RDX® QuikStation™ is a multi-drive, network-attached, removable disk-based library built on RDX technology, which combines the removability, durability and economy of tape with the random accessibility and performance of disk. Depending on the size of the RDX cartridges that are in use, the RDX QuikStation can offer up to 8-terabytes of online capacity.

This chapter provides an overview of the RDX QuikStation's features and components.

RDX QUIKSTATION FEATURES

This section provides an overview of the RDX QuikStation's features.

CONFIGURATION FLEXIBILITY

You can configure the RDX QuikStation as one of the following device types:

- Eight Tandberg Data RDX drives with eight removable iSCSI disk targets.
- Eight LTO-3 tape drive iSCSI targets.
- A disk autoloader with one RDX drive and eight slots.
- A Tandberg Data StorageLibrary T24 with two LTO-3 tape drives and eight slots.
- A Tandberg Data StorageLoader LTO with one LTO-3 tape drive and eight slots.
- A Tandberg Data StorageLibrary T40+ with four LTO-3 tape drives and eight slots.
- A tape autoloader with one LTO-3 tape drive and eight slots.

For even greater flexibility, you can configure the following hybrid device types:

- A virtual Tandberg Data StorageLibrary T24 with two LTO-3 tape drives and four slots plus four RDX drive targets.
- A virtual Tandberg Data StorageLoader LTO with one LTO-3 tape drive and four slots plus four RDX drive targets.

TANDBERG DATA RDX REMOVABLE DISK TECHNOLOGY

RDX data cartridges combine the removability and durability of tape with the random access and performance of disk. RDX cartridges have up to a 30-year media shelf life, and a shock-proof and static-proof cartridge design that makes them ideal for data archiving.

High Performance and Capacity

When configured as eight removable disks, the RDX QuikStation can simultaneously read and write cartridges from all eight RDX docks, up to 200 megabytes per second[1]. When configured as a virtual Tandberg Data StorageLibrary T24, the RDX QuikStation can simultaneously read and write from both tape drives.

With all eight docks using 1-terabyte cartridges, the RDX QuikStation has an online capacity of 8-terabytes, and unlimited offline storage capacity.

Compatible with Major Backup Software

The RDX QuikStation is compatible with major backup software applications, such as CA ARCserve® and Symantec Backup Exec.™ For a complete list of backup software applications that are compatible with the RDX QuikStation, visit the Tandberg Data web site (www.tandbergdata.com), or contact your backup software vendor.

Integrated Web-based Management

The RDX QuikStation Remote Management Console allows you to use a standard web browser from any location to manage, control, diagnose, and configure security for the RDX QuikStation.

Dual Gigabit Ethernet

The RDX QuikStation has two Gigabit Ethernet ports to provide failover protection and high availability network connectivity. You can configure the ports for either active backup/failover or adaptive load balancing (see page 51).

Compact Design

The RDX QuikStation uses only two units (2U) of rack space, minimizing the impact on data center space requirements.

1. The data transfer rate is up to 200 MB/second when port configuration is configured for adaptive load balancing (see page 51) and multiple hosts are used to stream data.

RDX QUIKSTATION COMPONENTS

This section describes the RDX QuikStation's front panel and back panel components.

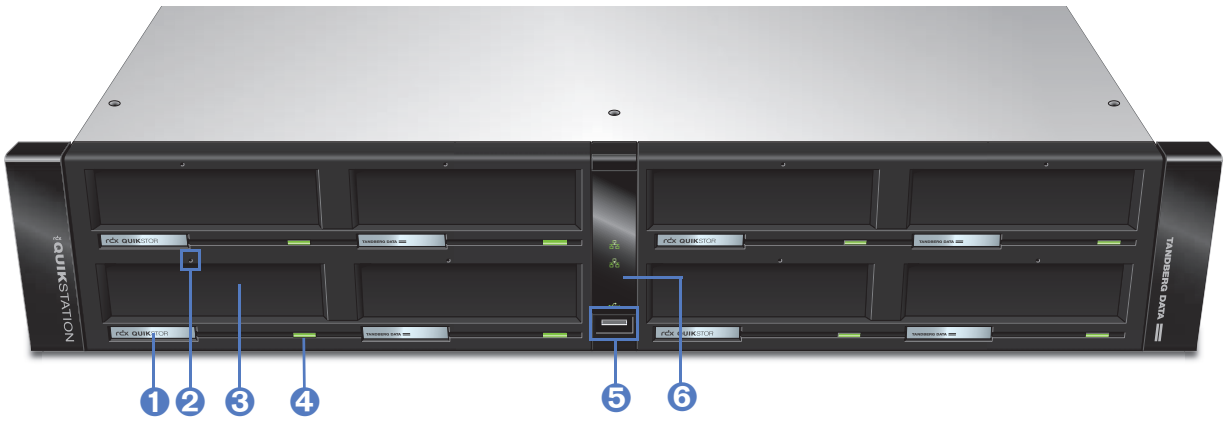


Figure 1-1 *RDX QuikStation front panel components*

1	RDX LCD panel (eight each) — see page 6 for more information.
2	Emergency-eject keyhole (eight each). Note: To use the emergency-eject function, straighten a paper clip (or use a similar straight metal object) and insert it into the keyhole. The paper clip needs to be sturdy enough to engage the eject function.
3	RDX dock (eight each).
4	RDX cartridge-eject button (eight each) — see page 7 for more information.
5	USB 2.0 port — used for configuration and diagnostics.
6	LED panel — displays indicators for network, USB connection, and system health (see page 7 for more information).

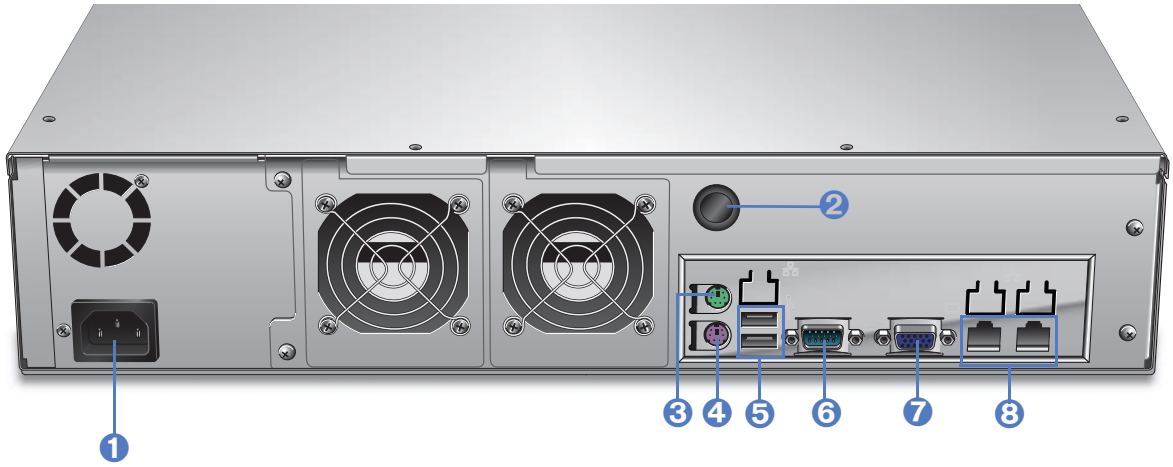


Figure 1-2 *RDX QuikStation back panel components*

1	Power connector
2	Power button **Note:** When the unit is turned on, pressing the power button performs a soft shutdown (recommended). Pressing and holding the power button for 10 seconds performs a hard shutdown.
3	Mouse connector (green)
4	Keyboard connector (purple)
5	USB 2.0 port (two each)
6	Serial connector
7	VGA connector
8	Gigabit Ethernet port (two each)

RDX DOCK LCD PANELS

The eight RDX dock LCDs display information based on the conditions that are described in the following table

Condition	What is displayed in LCD Dock Panels	
Upon initial startup of the unit and before a logical device type has been selected.	The firmware level, system name, IP status (DHCP or static), and a valid IP address (if DHCP is enabled) continuously display until you select a logical device type from the Remote Management Console.	
After a system restart.	The firmware level, system name, IP status (DHCP or static), and IP address display in sequential order for a few seconds. For RDX docks that have a loaded cartridge, the cartridge label number displays in the LCD panel.	
When a USB flash drive is inserted into the front-panel USB port.	"LogDump" displays. When the system log dump is complete, the LCD panels display "PASSED."	
	If one of the following files is loaded on the USB stick:	
	network.conf:	"NetUpdate" displays. When the configuration download is complete, the LCD panels display "PASSED."
	password.reset:	"RstPasswd" displays. When the password reset is complete, the LCD panels flash "DONE."
	vtx.fw:	"CodeUpdate" displays. When the firmware update is complete, the LCD panels display "Remove stick to reboot."
An RDX cartridge is loaded in a dock.	When the dock is configured as eight removable disks, the LCD panel displays the last eight digits of the cartridge serial number. When the dock is configured as a tape library slot, the LCD panel displays an LTO-3 "tape label", which consists of the last six digits of the cartridge serial number followed by "L3."	
An RDX dock is empty.	Nothing is displayed.	

RDX Cartridge-Eject button/Power LED

The following table describes Eject Button/Power LED functionality.

LED Color	Status
Off (no color)	The unit does not have power.
Green	Power is on and the unit is working properly.
Blinking Green	The RDX dock is ejecting a cartridge.
Amber	A fault condition exists with the cartridge.
Blinking Amber	A host computer is accessing the cartridge. A user has either pressed the eject button or has ejected the cartridge via the Remote Management Console.

RDX QuikStation LED Indicator Panel

The following table describes LED indicator functionality on the front panel.

LED Indicator	Color	Status
	Off (no color)	RDX QuikStation is not connected to a network cable.
	Blinking Green	Network connection has good-to-excellent connectivity.
	Blinking Amber	Network connection has limited or no connectivity.
	Blinking Green	System is loading information from or writing data to the USB flash drive.
	Solid Green	USB flash drive is ready to be removed.
	Off (no color)	No USB device is detected.
	Off (no color)	No system faults exist.
	Blinking Amber	A fault exists. The fault could be a fan failure, or it could indicate the device temperature is too high.

2

INSTALLATION AND SETUP

This chapter describes how to install and configure the RDX QuikStation and includes the following sections:

- Preparing for Installation . . . . . page 10
- Installing the RDX QuikStation in a Rack . . . . . page 12
- Connecting Network and Power Cables . . . . . page 17
- Configuring Network Information. . . . . page 18
- Connecting to the Remote Management Console . . . . . page 20
- Configuring the RDX QuikStation . . . . . page 21

PREPARING FOR INSTALLATION

✔ For all host computers that will be backed up by the RDX QuikStation, verify that the host computer OS has iSCSI initiator software installed.

Windows	Linux	Macintosh
iSCSI initiators are included with Windows Server 2008 and later. If necessary, download and install the appropriate iSCSI initiator from the Microsoft web site or from a third-party vendor.	iSCSI initiators are included with most Linux operating systems. If necessary, download and install the appropriate iSCSI initiator from your Linux Distribution web site or from a third-party vendor.	Macintosh systems require the installation of a third-party iSCSI initiator. We recommend that you download and install an iSCSI initiator that has been tested or recommended for use with your chosen backup application.

✔ Verify all items are included in the accessory kit (see page 11).

✔ Keep the packing materials and box in case you need to ship the unit later.

✔ Select an appropriate location —The maximum recommended ambient temperature for the RDX QuikStation is 35° C (95° F). Install the appliance in an environment that is compatible with this temperature limit. Use a ventilated rack to ensure the appliance receives adequate air flow required for safe operation.

✔ Select an appropriate power source — The AC input for the RDX QuikStation is 100-240 VAC, and the rated input current is 2,0 -1,0A. Keep this information in mind when selecting a power source to prevent circuit overload. Plug the appliance's power cord into a high-quality power strip that offers protection from electrical noise and power surges. An uninterruptible power supply (UPS) is recommended.

✔ Ensure that the work area is free from conditions that could cause electrostatic discharge (ESD) — Discharge static electricity from your body by touching a known grounded surface, such as a computer's metal chassis.

✔ Ensure the rack is placed on level ground — Use a level when installing the rack rails to prevent any potentially hazardous conditions caused by uneven mechanical loading.

✔ Obtain the following items to complete the rack installation instructions

- #2 Phillips screwdriver
- Tape measure
- Level

VERIFYING ACCESSORY KIT CONTENTS

Use the following checklist to verify that all accessory items shipped with the RDX QuikStation:

Table 2-1 *RDX QuikStation accessory kit contents*

✔	RDX QuikStation Accessory Item
	North American-region power cord
	European-region power cord
	Two ethernet cables
	Two appliance end-cap covers to place over rackmount bolts
	USB flash drive
	Rackmount rail kit, which includes:
	▸ Two inner rack rails to attach to the RDX QuikStation
	▸ Two outer rack rails to attach to the rack
	▸ Hardware pack for inner rails
	▸ Hardware pack for outer rails
	▸ Rail extension brackets
	▸ Eight washers and two clip nuts used for rackmounting
	RDX QuikStation Quick Start Guide
	RDX QuikStation Rackmount Instructions
	SecureService Pack, which includes:
	▸ Warranty card
	▸ SecureService registration card
	▸ Service and support information
	▸ Data Protection Solutions Guide

INSTALLING THE RDX QUIKSTATION IN A RACK

The RDX QuikStation is designed for installation in a standard (EIA-310) 4-post, 19-inch rack and uses 2 units (2U) of rack space.

The rackmount kit includes the following items:

Table 2-2 *Rackmount kit contents*

Rackmount Item		What the item is used for
	12 #10 pan-head screws	To attach the bracket to the outer rail and to secure the outer rail to the front and back-end of the rack.
	4 #10 keps nuts	These are extra hardware pieces that are not required for assembly.
	4 #10 flat-head screws	These are extra hardware pieces that are not required for assembly.
	8 washers	To use with the #10 pan-head screws when you attach the outer rail to the rack.
	6 bar nuts	To secure the outer rail to the rack and also to secure the bracket to the outer rail.
	2 rail extension brackets	To attach the outer rail to the back-end of the rack.
	2 short brackets	To attach the outer rail to the back-end of the rack if the rack does not require rail extension brackets.
	2 outer rails	To mount to the rack.
	2 inner rails	To attach to the RDX QuikStation appliance. Includes a locking tab to keep the appliance in place when it is fully extended from the rack.
	8 #6 pan-head screws	To secure the inner rail to the RDX QuikStation.
	8 #6 keps nuts	These are extra hardware pieces that are not required for assembly.
	2 #10 clip nuts	To secure the RDX QuikStation into the rack.

ASSEMBLING THE OUTER RAILS

For most standard, 4-post racks, you will need to attach the rail extension bracket (shown below) to the outer rail instead of the short bracket.

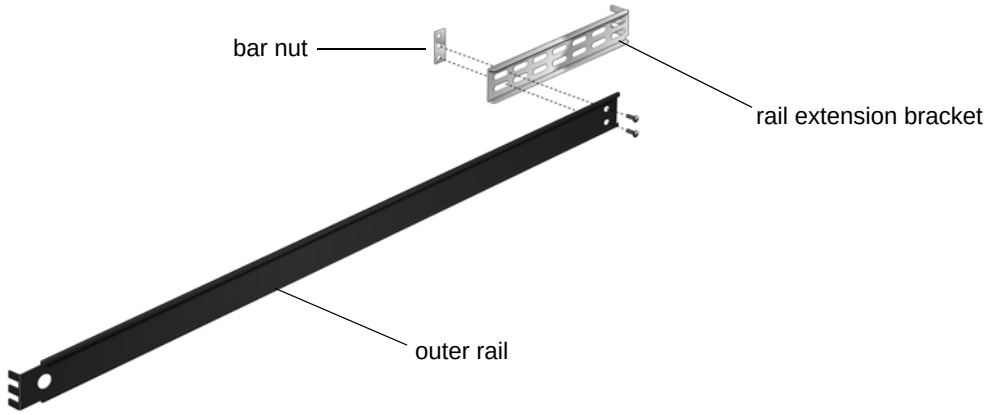


Figure 2-1 *RDX QuikStation outer rack rail assembly*

To assemble the outer rails:

1. Measure the inside distance from the front mounting holes to the back mounting holes on one side of your rack.

2. Fit either the rail extension bracket or the short bracket to the outer rail. Adjust the bracket to a point where the rail is at the same distance that you measured in Step 1.

3. Align the bottom and middle hole of a bar nut to the outside of the bracket, as shown in the above figure. From the inside of the rail, thread two #10 pan-head screws through the rail, bracket and bar nut holes, as shown above. Do not tighten the screws completely.

4. Repeat these steps for the second outer rail on the other side of the rack.

INSTALLING THE OUTER RAILS INTO THE RACK

The front and back of the rails attach to the rack with a bar nut, two washers, and two #10 pan-head screws, as shown in the figure below.

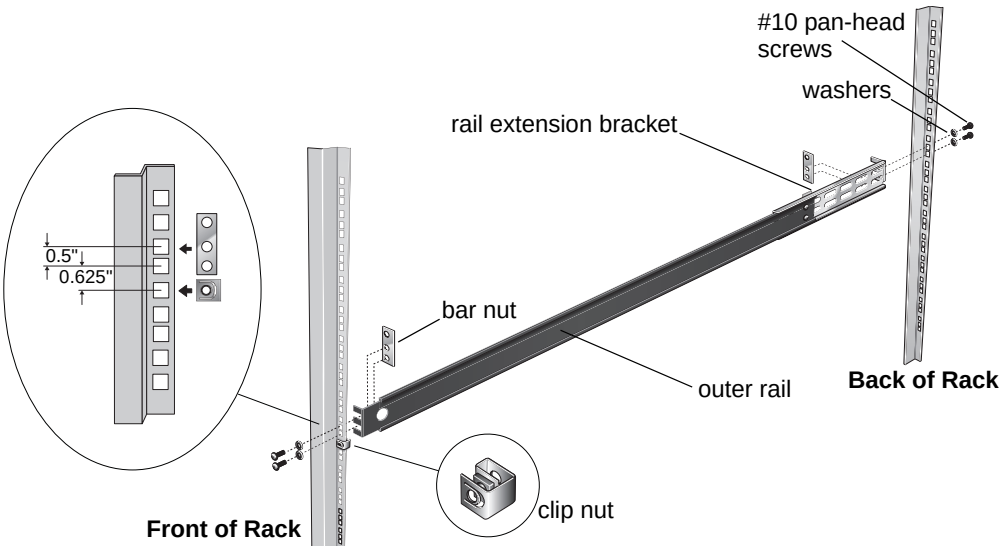


Figure 2-2 *Attaching the outer rail to the rack*

Securing the front of the rail to the rack

1. Place an outer rail against the *inside* flange of the rack post (see figure above). Make sure you orient the rail so that the bracket (either the rail extension or the short bracket) faces the back of the rack.

2. Place a bar nut flush against the end of the rail (see figure above). Position the rail and bar nut so that the bar nut's bottom hole and middle hole align with rack holes that are 0.5" apart (see figure above).

3. Thread the screws through the washers, the rack post, and the bottom and middle holes of the bar nut (see figure above).

4. Install a clip nut in the hole directly below the bar nut (see figure above).

Securing the back of the rail to the rack

1. Line up the rail with the back placement holes in the rack. Make sure the rail is against the inside rack flange and is level to the ground.

2. Thread the screws through the washers, the rack post, and the bottom and middle holes of the bar nut (see figure above).

3. If necessary, adjust the rail so that it fits snugly into the rack. Tighten the two #10 pan-head screws that attach the bracket to the outer rail.

Repeat these steps to attach the other outer rail and clip nut to the rack.

ATTACHING THE INNER RAILS

Figure 2-3 *Attaching the inner rails to the RDX QuikStation*

1. On each side of the appliance, align the inner rail holes with the first three holes on the RDX QuikStation.
2. Use three #6 pan-head screws to attach the inner rail to the appliance, as shown in the above figure.

! **Important** Be sure to use the supplied #6 screws – a longer screw could cause damage to the unit.

INSTALLING THE RDX QUIKSTATION INTO THE RACK

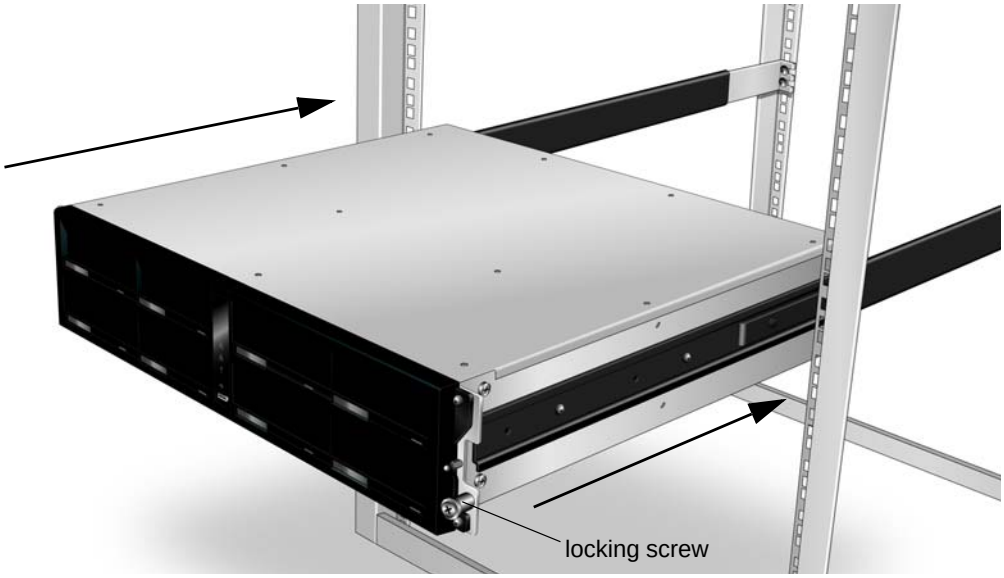


Figure 2-4 *Installing the RDX QuikStation into the rack*

To install the RDX QuikStation into the rack:

1. Line up the rear of the inner rails with the front of the outer rails.
2. Slide the inner rails into the outer rails, keeping the pressure even on both sides. You may have to depress the locking tabs when inserting.
3. Push the RDX QuikStation completely into the rack.
4. Use the locking screws located on each side of the RDX QuikStation to secure it into the rack. Push and turn the locking screws clockwise to lock. The locking screws engage the clip nut, which you installed in Step 2d of "Installing the Outer Rails into the Rack" on page 14.
5. Place the appliance end-cap covers that were included in your accessory kit over the locking screws.

! **Important** Do not place anything on top of the rackmounted unit when it is extended from the rack.

CONNECTING NETWORK AND POWER CABLES

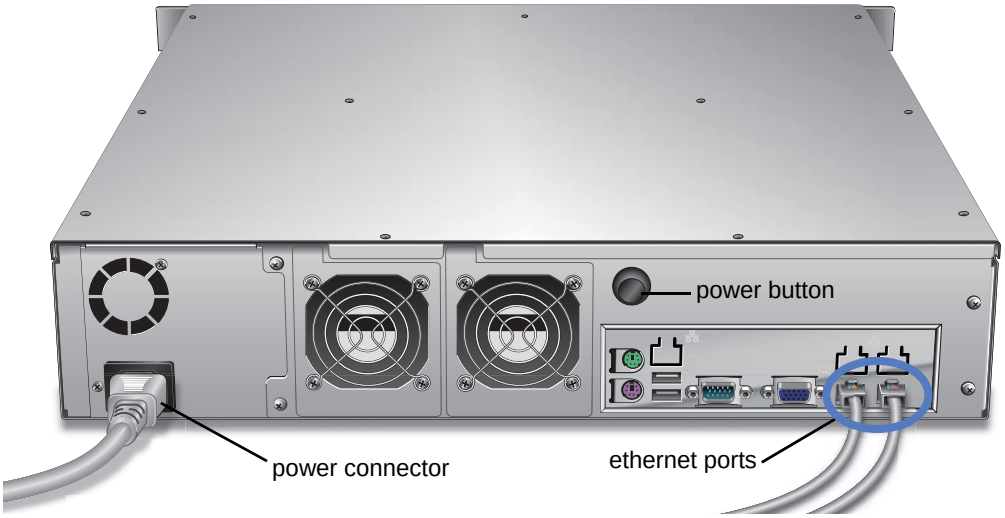


Figure 2-5 *Connecting ethernet and power cables to the RDX QuikStation*

1. Connect one or two RDX QuikStation ethernet network ports to ethernet network ports on a switch, hub, or router.

   Note: Two network ports are recommended for failover protection. (See page 51 for more information about port configuration options.)

2. Connect the power cord that is appropriate for your region to the RDX QuikStation.

3. Turn the power on by pressing the black power button that is located on the back of the RDX QuikStation.

   Note: Once the unit is powered on, all eight LCD panels will alternately display the firmware level, system name, DHCP status, and IP address. This information continues to display until you log on to the Remote Management Console and configure the logical device type for the QuikStation.

4. Verify that a valid IP address is displayed on the LCD panels. If not, you must manually configure the IP address for the RDX QuikStation. (See "Configuring Network Information" on page 18.)

CONFIGURING NETWORK INFORMATION

Note: If you are able to obtain a valid IP address from your RDX QuikStation LCD panels upon startup, skip this section and go to Connecting to the Remote Management Console on page 20.

To manually configure your RDX QuikStation network information:

1. Locate the USB flash drive that is included in your RDX QuikStation accessory box and insert the flash drive into an open USB slot on any computer with a text editor.

2. From the computer, navigate to the USB Flash Drive. Open the **network.conf** file in a text editor. (For Windows users, open the file in Notepad.)

   Note: If you cannot find the USB flash drive that shipped with the RDX QuikStation, you can download the **network.conf** file from the **Support>Drivers and Downloads** section of the Tandberg Data web site (www.tandbergdata.com).

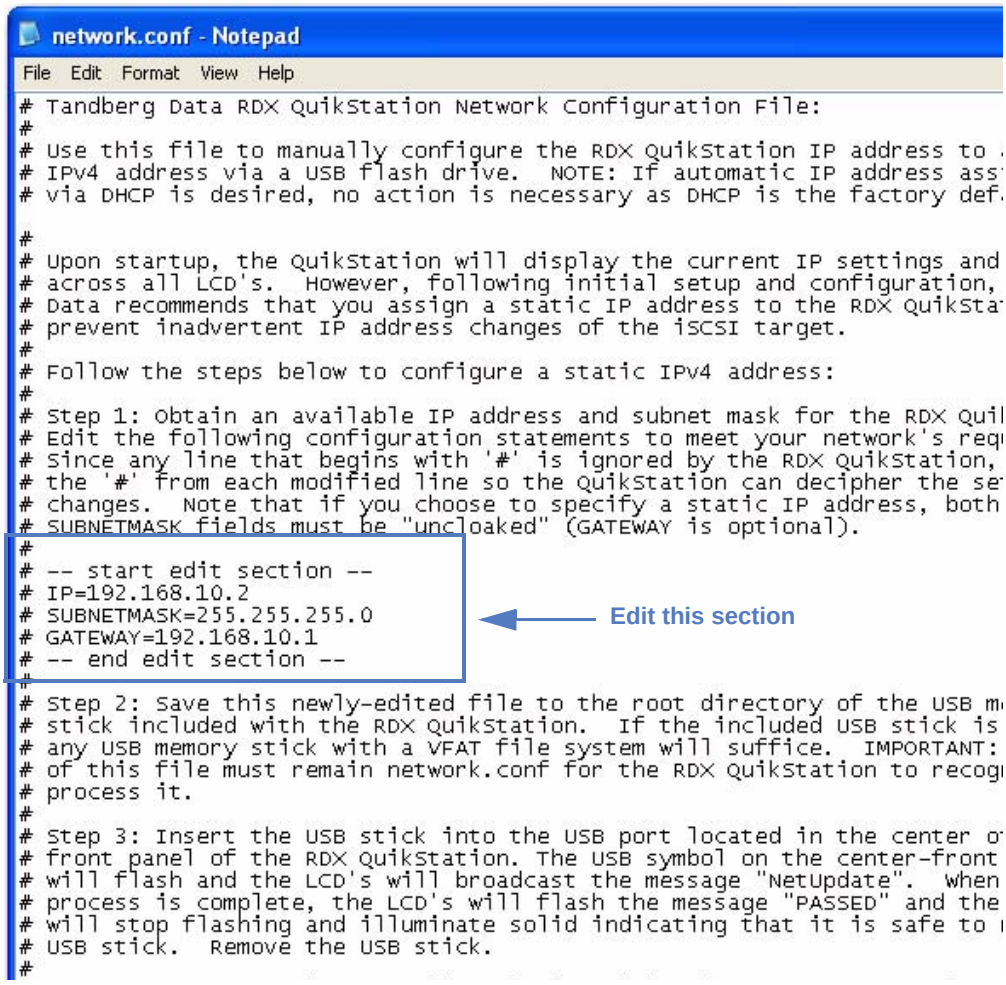


Figure 2-6 *The RDX QuikStation* ***network.conf*** *file*

3. In the **network.conf** file, edit the IP and subnet mask addresses to meet your network's requirements.

   Note: You can edit the gateway address, but it is not required.

4. Remove the "#" character from each modified line so that the RDX QuikStation can decipher the setting changes, as shown in the example below.

```
# Step 1: Obtain an available IP address and subnet mask for the RDX QuikS
# Edit the following configuration statements to meet your network's requi
# Since any line that begins with '#' is ignored by the RDX QuikStation, r
# the '#' from each modified line so the QuikStation can decipher the sett
# changes.  Note that if you choose to specify a static IP address, both I
# SUBNETMASK fields must be "uncloaked" (GATEWAY is optional).
#
# -- start edit section --
 IP=10.1.20.85
 SUBNETMASK=255.255.255.0
 GATEWAY=10.1.20.254
# -- end edit section --
#
# Step 2: Save this newly-edited file to the root directory of the USB mem
# stick included with the RDX QuikStation.  If the included USB stick is u
# any USB memory stick with a VFAT file system will suffice.  IMPORTANT: T
# of this file must remain network.conf for the RDX QuikStation to recogni
# process it.
#
# Step 3: Insert the USB stick into the USB port located in the center of
# front panel of the RDX QuikStation. The USB symbol on the center-front L
# will flash and the LCD's will broadcast the message "NetUpdate".  When t
# process is complete, the LCD's will flash the message "PASSED" and the U
```

Figure 2-7 *Example of an edited* ***network.conf*** *file*

5. Save the file to the root directory of the USB flash drive as "**network.conf.**" If the flash drive that was included with your RDX QuikStation is unavailable, you can save the file to any USB flash drive with a VFAT file system.

Important The file name must remain as "**network.conf**." Otherwise, the RDX QuikStation will not recognize the file.

6. Insert the USB flash drive into the USB port located on the center-front panel of the RDX QuikStation.

   After you insert the flash drive, "Net Update" will display on all eight front LCD panels. When the configuration download is complete, the LCD panels display "PASSED."

7. When the USB symbol on the center-front LED panel stops blinking and transitions to a solid green color, remove the USB flash drive.

8. Proceed to the next section to connect to the Remote Management Console.

CONNECTING TO THE REMOTE MANAGEMENT CONSOLE

You can connect to the RDX QuikStation Remote Management Console with a web browser from any computer that is on the same network as the RDX QuikStation. The computer can run on Windows, Linux, and Macintosh operating systems. You can also enable secure hypertext (https) when connecting to the Remote Management Console.

Note: Your web browser must have JavaScript enabled.

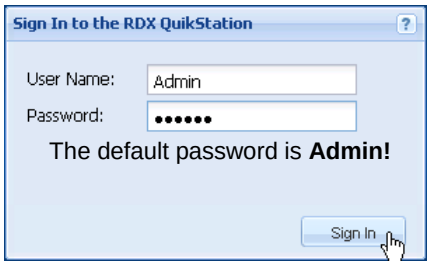
To connect to the RDX QuikStation Remote Management Console:

1. From a network host, type the RDX QuikStation IP address in a web browser: http://<*RDX QuikStation IP address*>

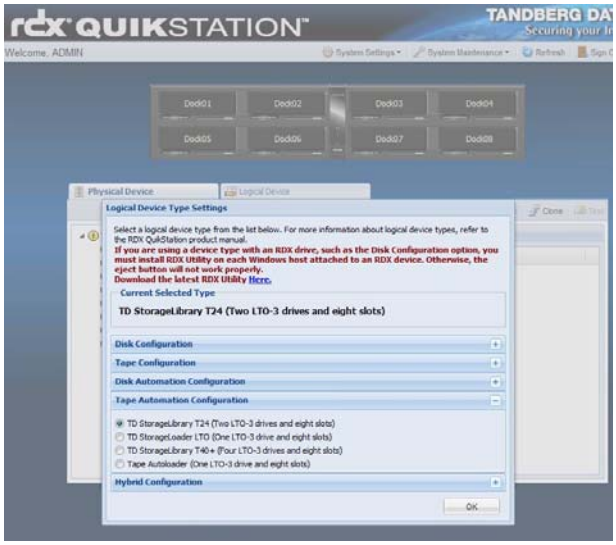
Note: If your network runs DHCP, you can obtain the IP address from the RDX QuikStation's LCD panels.

2. Sign in to the Console. The default user name is **Admin**, and the default password is **Admin!**.

   Note: The default password is case sensitive.



The Remote Management Console opens.



3. Go to the next section to configure your RDX QuikStation logical device type and other settings.

CONFIGURING THE RDX QUIKSTATION

LOGICAL DEVICE TYPE

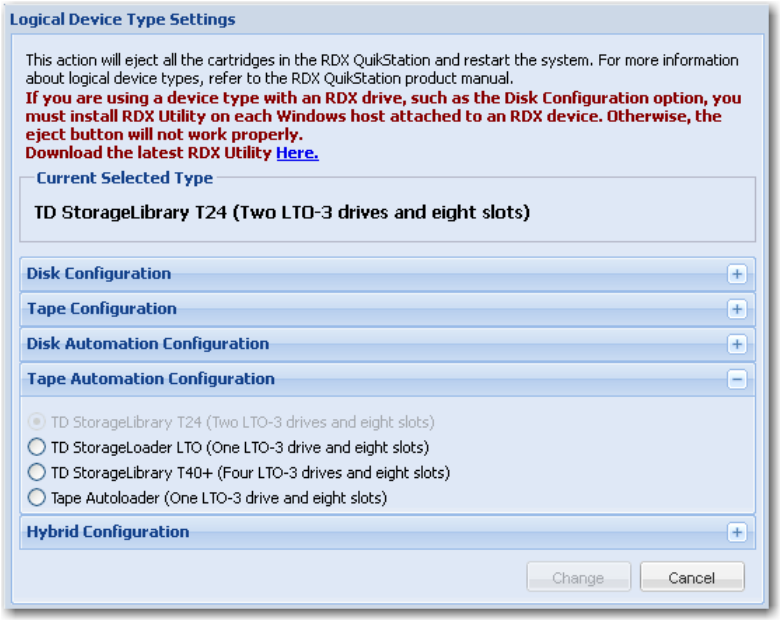
You can configure your RDX QuikStation in a variety of ways. Logical device configurations are available for disk, tape, disk automation and tape automation. For even greater flexibility, you can choose a hybrid configuration of virtual tape library and disk.

For more information about best use for each logical device type, see Chapter 5.

To configure the logical device type:

1. Select the device type from the dialog window that opens when you first log on to the Remote Management Console.

Note: If you select the RDX Drive configuration, you must first install the RDX Utility, which is available from a link in the Logical Device Type Settings dialog window. The RDX drive is the recommended device type for disk configurations. The removable disk device type is available for legacy users.



2. Click OK.

SYSTEM SETTINGS

Refer to the table below to configure the following RDX QuikStation system settings. For more information, see Chapter 4 on page 47.

Table 2-3 *Recommended system settings*

Setting	Purpose	Where to find
Date/Time	Set the date and time to your time zone to receive accurate system and troubleshooting information. See "Setting Date and Time" on page 49 for more information.	From the main menu bar in the Remote Management Console, go to System Settings> Date/Time.
Network Information	Tandberg Data recommends that you assign a static IP address to prevent inadvertent IP address changes of the iSCSI target. You can also configure optional DNS server addressing information. See "Configuring Network Information" on page 50 for more information.	From the main menu bar in the Remote Management Console, go to System Settings> Network. The RDX QuikStation will automatically reboot after you have made your network changes.
Email Notification	A valid email address is needed for logging, error reporting, and password recovery. See "Setting Email Notifications" on page 53 for more information.	From the main menu bar in the Remote Management Console, go to System Settings> Notification.
User Management	As a best practice, change the built-in administrator account password. See "Editing a password" on page 63 for more information.	From the main menu bar in the Remote Management Console, go to System Settings>User.

3

iSCSI CONFIGURATION

The data that you want to back up and restore is transferred from your host computers to the RDX QuikStation via the iSCSI (Internet Small Computer System Interface) protocol. In iSCSI terminology, a host computer is referred to as an "initiator" and the storage device it connects to as the iSCSI "target."

This chapter includes the following sections:

- iSCSI configuration overview . . . . . page 24
- Connecting to iSCSI targets without authentication . . . . . page 25
- Setting iSCSI security . . . . . page 33

iSCSI CONFIGURATION OVERVIEW

Before you can begin to back up and restore data with the RDX QuikStation, the host computers (initiators) must establish an iSCSI connection to the RDX QuikStation's storage targets.

To establish an iSCSI connection, you need to have iSCSI initiator software installed on the host. Verify that the host computer OS has iSCSI initiator software installed (see page 10).

Depending on how you configured the logical device type for the RDX QuikStation in Chapter 2 (see page 21), you will have two to eight iSCSI targets to connect.

Note: For more information about viewing iSCSI targets, see "iSCSI Device Overview" on page 72.

You can configure iSCSI initiators with or without iSCSI security. The RDX QuikStation supports one-way Challenge Handshake Authentication Protocol (CHAP). CHAP is a protocol that is used to authenticate iSCSI connections and is based upon the initiator and target sharing a *secret* (a security key that is similar to a password).

With one-way CHAP authentication, the iSCSI target (storage device) authenticates the initiator (host). The secret is set just for the target. All initiators that want to access that target need to use the same secret to connect to the target. For more information, see "Setting iSCSI Security" on page 33.

The following table describes iSCSI Management rules for the RDX QuikStation.

Table 3-1 *Remote Management Console iSCSI Management Rules*

<table>
<tr><th>Logical Device type</th><th>iSCSI Management Security</th><th>iSCSI Management Connection</th></tr>
<tr><td>Eight RDX drives[a]</td><td rowspan="2">You can add up to 10 initiator users (CHAP authentication) or hosts (host authentication) to each iSCSI target.</td><td rowspan="7">One active host connection is allowed for each iSCSI target.</td></tr>
<tr><td>Eight tape drives</td></tr>
<tr><td>Disk autoloader</td><td rowspan="5">You can add up to 10 initiator users (CHAP authentication) or hosts (host authentication) to the library or autoloader target. You cannot set security on the drive target; the drive inherits security from the library or autoloader.</td></tr>
<tr><td>StorageLibrary T24 with two LTO-3 tape drives</td></tr>
<tr><td>StorageLoader with one LTO-3 tape drive</td></tr>
<tr><td>StorageLibrary T40+ with four LTO-3 tape drives</td></tr>
<tr><td>Tape autoloader with one LTO-3 tape drive</td></tr>
<tr><td>Hybrid Configurations</td><td colspan="2">For hybrid configurations, refer to iSCSI management rules for the given logical device types.</td></tr>
</table>

[a] The RDX drive is the recommended device type for disk configurations. The removable disk device type is available for legacy users.

CONNECTING TO iSCSI TARGETS WITHOUT AUTHENTICATION

This section describes how to connect Windows, Linux, and Macintosh hosts to RDX QuikStation iSCSI targets without authentication. If you plan on using one-way CHAP authentication, follow the instructions in "Setting iSCSI Security" on page 33.

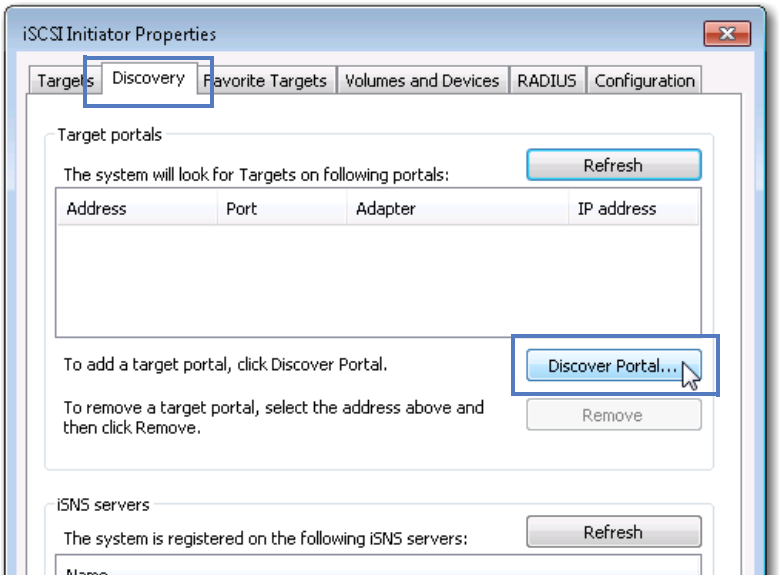
- Connecting iSCSI Targets for Windows (page 25)
- Connecting iSCSI Targets for Linux (page 28)
- Connecting iSCSI Targets for Macintosh (page 30)

CONNECTING iSCSI TARGETS FOR WINDOWS

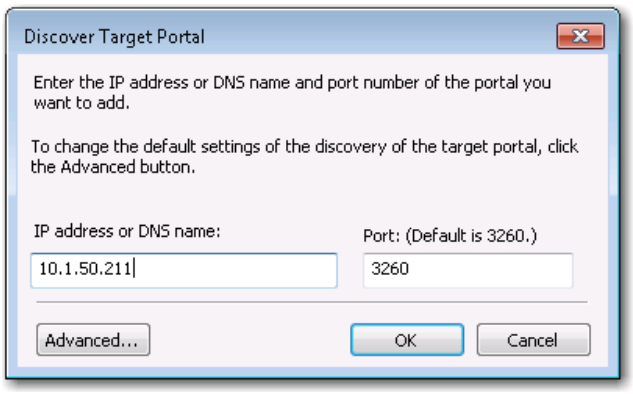
The following instructions describe how to connect your network host computers in Windows Server 2008 R2. Your iSCSI initiator interface may differ slightly depending on your Windows operating system.

To establish an iSCSI connection:

1. Open Microsoft iSCSI Initiator and click the Discovery tab.
2. Click Discover Portal... (Your version of iSCSI initiator may use Add depending on your Windows OS.)



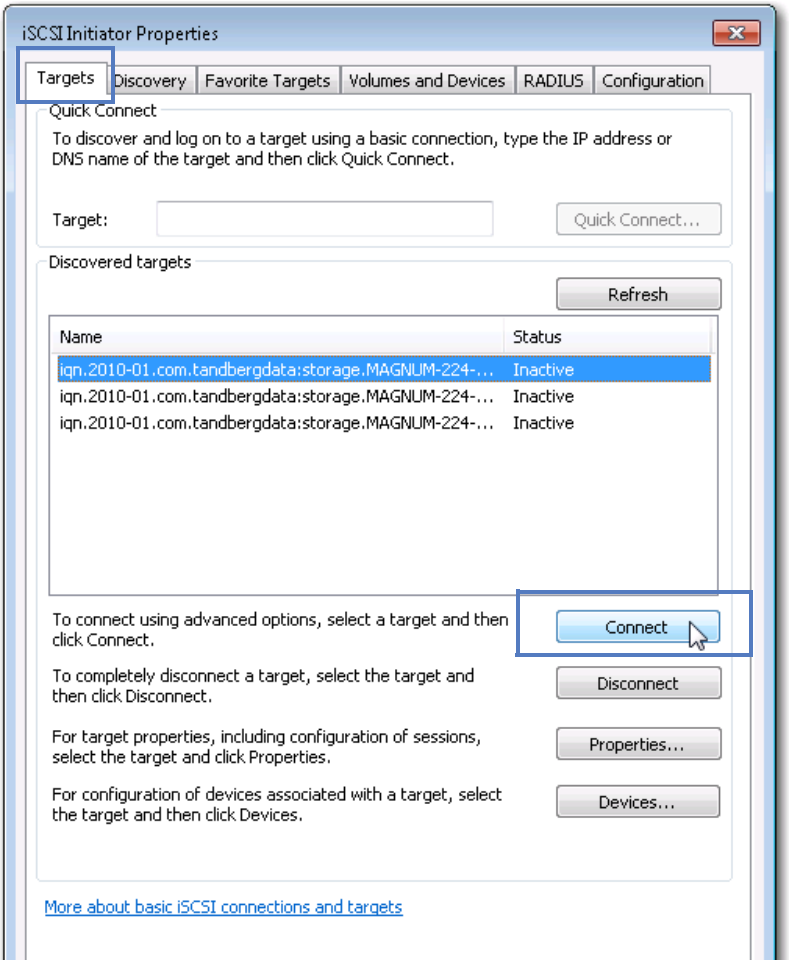
The Discover Target Portal dialog window opens.



3. In the Discover Target Portal dialog window, type the IP address for the RDX QuikStation. Click OK.

4. Click the Targets tab.

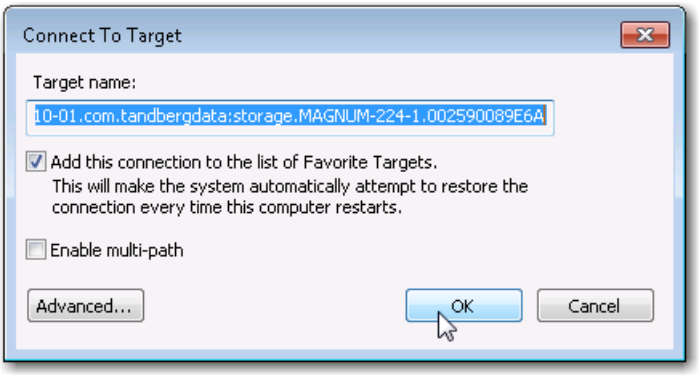
   Depending on how you configured the logical device type for the QuikStation, you will see two to eight iSCSI targets. The screenshot below depicts a TandbergData StorageLibrary T24 configuration. The three iSCSi targets connect the library and two LTO-3 tape drives to the host.



5. For each iSCSI target, complete the following steps:

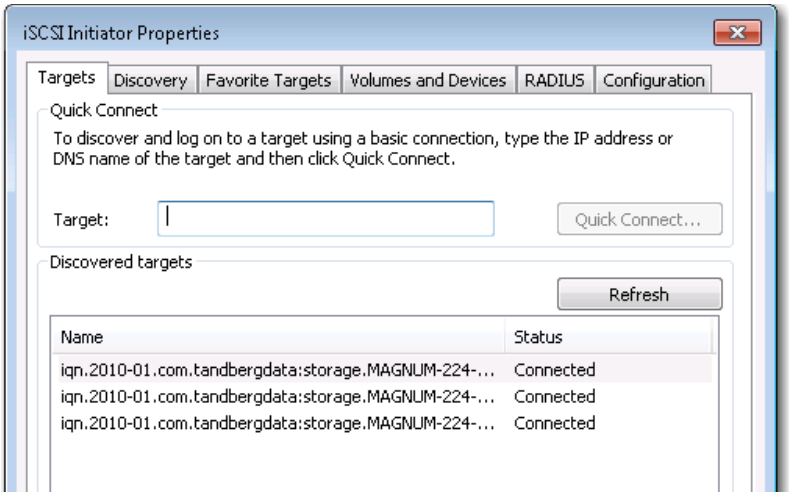
   a. Select an iSCSI qualified name (IQN). Click Connect. (Your version of iSCSI initiator may use Log On... depending on your Windows OS.)

      The Connect to Target dialog window opens.



   b. Select the "Add this connection to the list of Favorite Targets" checkbox. Click OK.

      The RDX QuikStation's iSCSI target should display as "connected" in the Discovered Targets dialog window, as shown below.



! **Important** Before you shutdown or restart the RDX QuikStation for any reason, Tandberg Data recommends that you disconnect all iSCSI initiators.

CONNECTING iSCSI TARGETS FOR LINUX

The following instructions describe how to connect iSCSI targets using Linux Open-iSCSI Initiator. Open-iSCSI Initiator is available for Redhat Enterprise Linux, CentOS, Fedora Linux, Debian, and Ubuntu operating systems. For more information about using Open-iSCSI with your specific Linux operating system, refer to your Linux distribution web site.

1. Install Open-iSCSI initiator.

   To install the iSCSI initiator, enter the following command:

   ```
   # yum install iscsi-initiator-utils
   ```

   For Ubuntu and Debian operating systems, enter the following command:

   ```
   $ sudo apt-get install open-iscsi
   ```

2. Discover iSCSI Targets.

   To discover the RDX QuikStation iSCSI targets, enter the following command, replacing the variable *RDX QuikStation IP address* with the actual IP address for your RDX QuikStation:

   `# iscsiadm -m discovery -t sendtargets -p` *RDX QuikStation ip address*

   Depending on how you configured the logical device type for the QuikStation, you will see two to eight iSCSI targets.

3. Connect iSCSI targets.

   To connect all discovered iSCSI targets, enter the following command:

   ```
   # iscsiadm -m node -L all
   ```

   To connect to an individual target, enter the following command, replacing *target* `IQN` *name* with the iSCSI qualified name (IQN) of the target and replacing *target portal* with the RDX QuikStation IP Address:

   `# iscsiadm -m node -T` *target IQN name* `-p` *target portal* `--login`

   Once all iSCSI targets are connected, the initiator (Linux host) can use the iSCSI disks as a normal disk. It appears under /dev/sdx devices and you can format, mount iSCSI disks like a normal disk.

Other “iscsiadm” commands you may need

1. Disconnect from an iSCSI target.

   To disconnect from an iSCSI target, enter the following command, replacing *target* **`IQN`** *name* with the iSCSI qualified name (IQN) of the target and replacing *target portal* with the RDX QuikStation IP Address:

   `# iscsiadm -m node -T` *target IQN name* `-p` *target portal* `--logout`

2. Delete an iSCSI target.

   To delete a target, enter the following command, replacing *target* **`IQN`** *name* with the iSCSI qualified name (IQN) of the target:

   `# iscsiadm -m node -T` *target IQN name* `-o delete`

Important Before you shutdown or restart the RDX QuikStation for any reason, Tandberg Data recommends that you disconnect all iSCSI initiators.

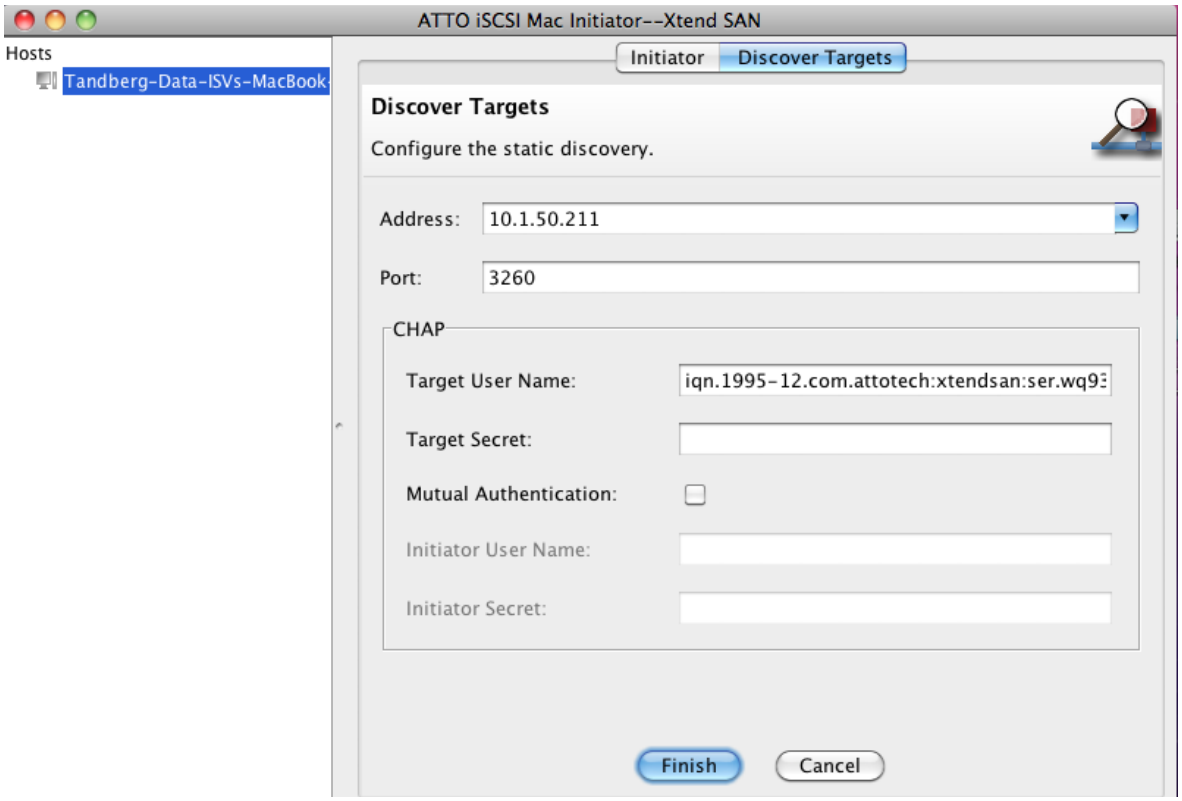
CONNECTING iSCSI TARGETS FOR MACINTOSH

The following instructions describe how to connect your Macintosh host computers using Atto Technology's Xtend SAN iSCSI initiator. Xtend SAN is compatible with Mac OS X 10.4.x and later. While we do not require you to use Xtend SAN as your third-party Mac iSCSI initiator, we recommend that you use an iSCSI initiator that has been tested or recommended for use with your chosen backup application.

To establish an iSCSI connection:

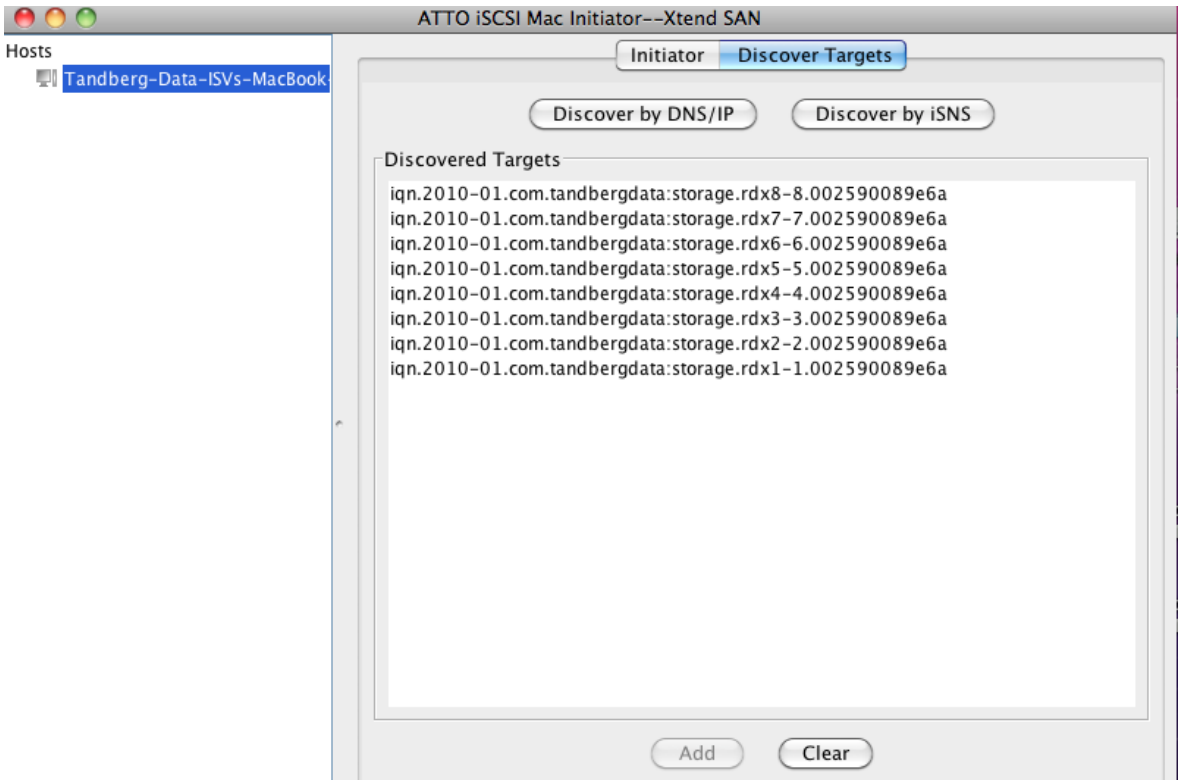
1. Open Xtend SAN iSCSI Initiator. Click the Discover Targets tab, then click Discover by DNS/IP.

   The following dialog window opens.



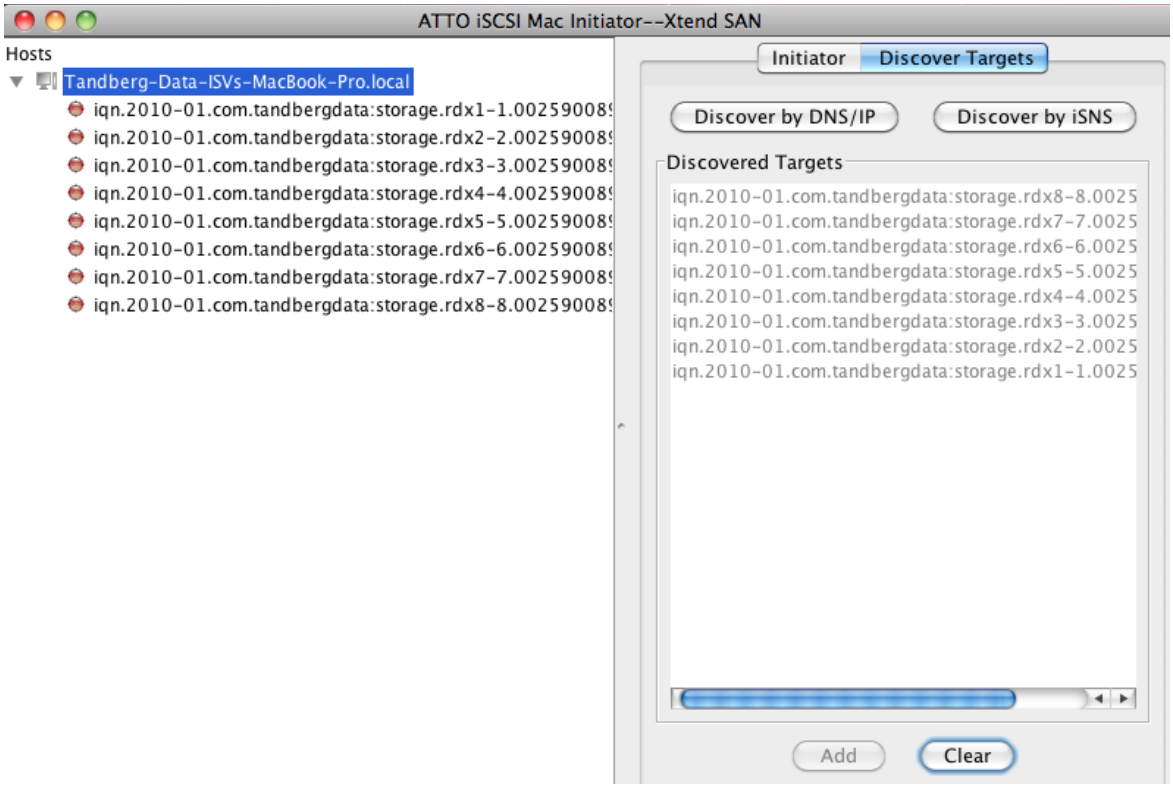
2. In the Address field, type the IP address for the RDX QuikStation. If you are using a port number other than the default, type the number in the Port field. Otherwise leave the default 3260 port number. Click Finish.

   The dialog window displays the discovered iSCSI targets. Depending on how you configured the logical device type for the QuikStation, you will see two to eight iSCSI targets. The screenshot below depicts a configuration of eight removable disks.



3. Highlight all the discovered targets and click Add.

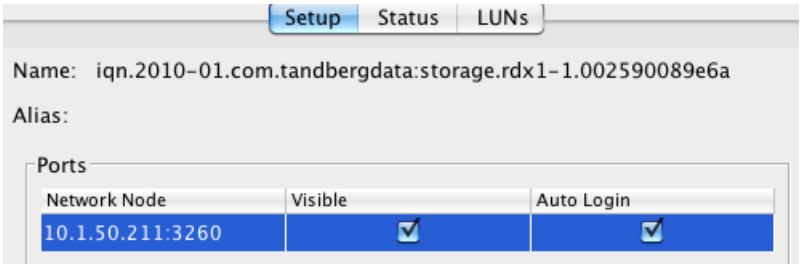
   The targets are displayed in the left pane with a red icon, signifying that they are not yet connected.



4. For each iSCSI target, complete the following steps to connect the target:

   a. Select an iSCSI qualified name (IQN) from the left pane.

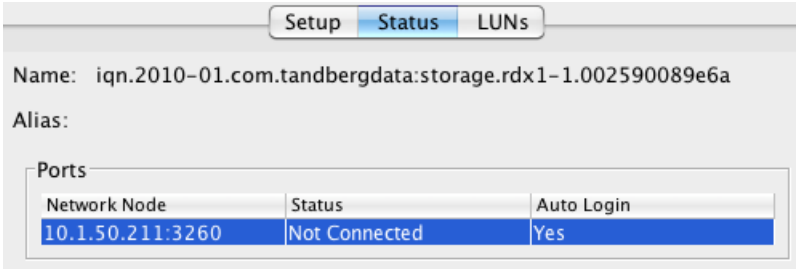
      The target's port information opens in the center pane.



   b. Select the "Visible" checkbox and the "Auto Login" checkbox.

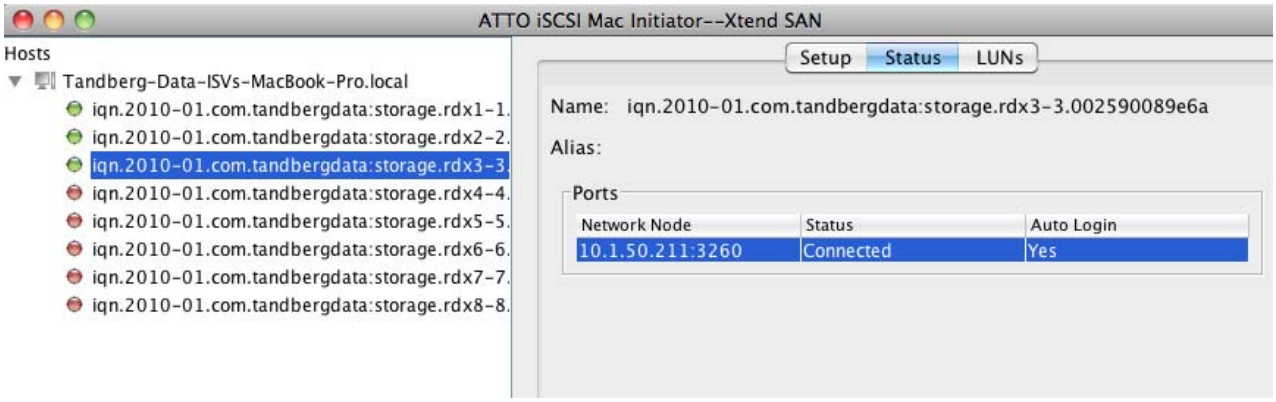
   c. Click the Status tab.

      The target's connection status is displayed.



   d. Select the Network Node and click Login.

   e. The iSCSI targets will display with a green icon when they are connected to the RDX QuikStation, as shown below.



! Important Before you shutdown or restart the RDX QuikStation for any reason, Tandberg Data recommends that you disconnect all iSCSI initiators.

SETTING iSCSI SECURITY

The RDX QuikStation allows you to set iSCSI security in one of the following ways

Security Type	Description
CHAP Authentication	CHAP is a protocol that is used to authenticate iSCSI connections and is based upon the initiator and target sharing a *secret* (a security key that is similar to a password). You can add up to 10 initiator users (hosts) per iSCSI target[a]. However, for removable disk configurations, only one initiator can be actively connected to the disk target. For virtual library configurations, only one initiator can be actively connected to a logical tape drive.
Host Authentication	Only the hosts that you specify for an iSCSI target will be allowed to connect to the target. Without host authentication, any network host can connect to the iSCSI target. You can add up to 10 hosts per iSCSI target*. However, for all logical device configurations, only one initiator can be actively connected to the disk target.

[a] For library and autoloader configurations, you set iSCSI security for the library/autoloader only, not for the individual tape or RDX drives; the drives inherit the security setting from the library/autoloader.

! Important As a best practice, set iSCSI security in the RDX QuikStation Remote Management Console first. Then, using the host's iSCSI initiator software, connect the host to your iSCSI targets on the RDX QuikStation.

If you do not set security in the Remote Management Console first, any previously connected hosts will remain connected to the RDX QuikStation regardless of the security you set.

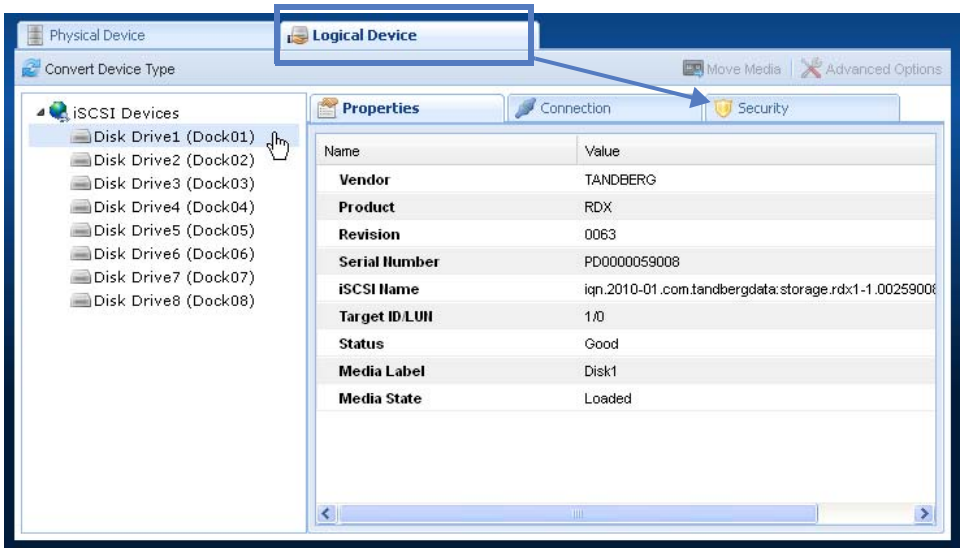
This section covers the following topics:

- Setting iSCSI Security in the Remote Management Console (page 34)
- Connecting iSCSI targets with CHAP for Windows (page 37)
- Connecting iSCSI targets with CHAP for Linux (page 40)
- Connecting iSCSI targets with CHAP for Macintosh (page 42)

SETTING iSCSI SECURITY IN THE REMOTE MANAGEMENT CONSOLE

To set iSCSI security:

1. Sign in to the RDX QuikStation Remote Management Console (see page 20).
2. Click the Logical Device tab, then select the iSCSI target from the tree view in the left pane.



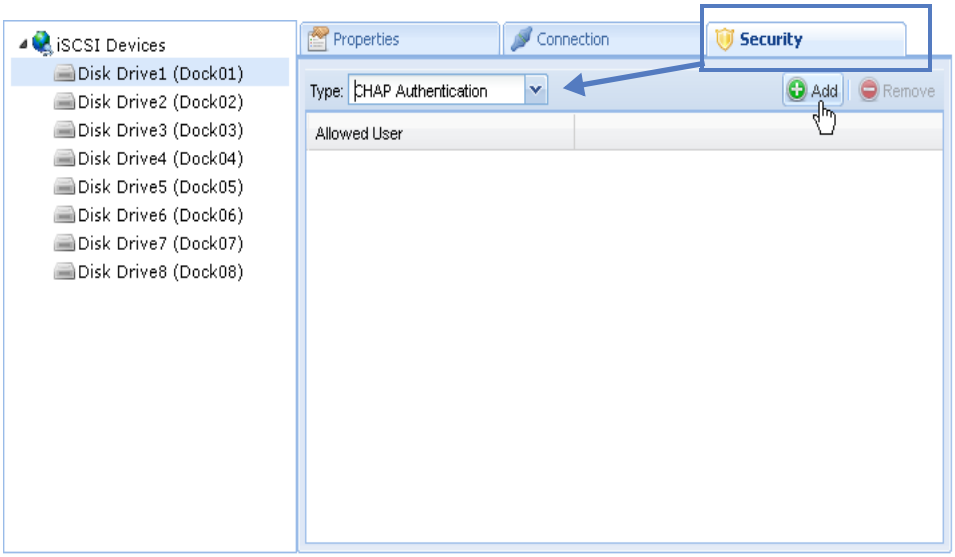
3. Click the Security tab.
   - To set CHAP authentication, see page 35.
   - To set host authentication, see page 36.

Enabling CHAP Authentication

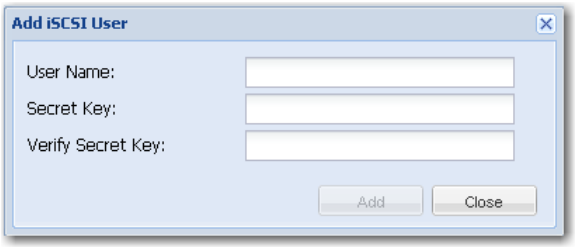
To add CHAP users (hosts) to an iSCSI target:

1. From the Security tab dialog window, make sure the CHAP Authentication option is shown in the pulldown window.

2. Click +Add.



The Add iSCSI User dialog box opens.



3. In the User Name field, enter the host initiator name. By default, this is the host IQN name, which you can find from your iSCSI host initiator software application.

   Note: You can create a unique user name in this field. If you do so, you must also change the default host initiator name in your host iSCSI initiator software to match this name.

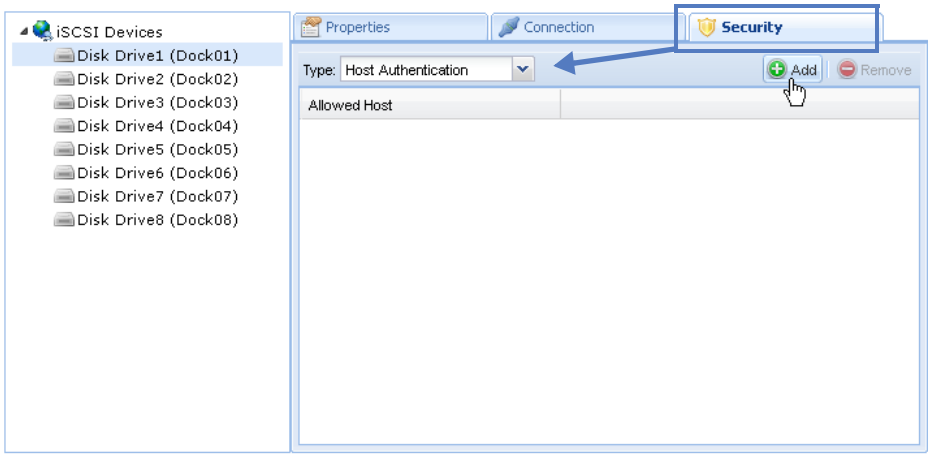
4. Type the CHAP secret. The secret must be 12 to 16 characters long. You can use any combination of letters, numbers, and the following special characters: -,!@#$% ^ &*_.

5. Type the CHAP secret again to verify. Click Add.

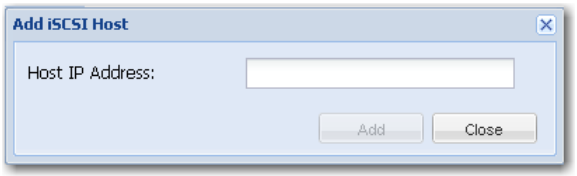
Enabling Host Authentication

To add hosts that will be allowed to connect to an iSCSI target:

1. From the Security tab dialog window, select Host Authentication from the pulldown window.
2. Click +Add.



The Add iSCSI Host dialog box opens.



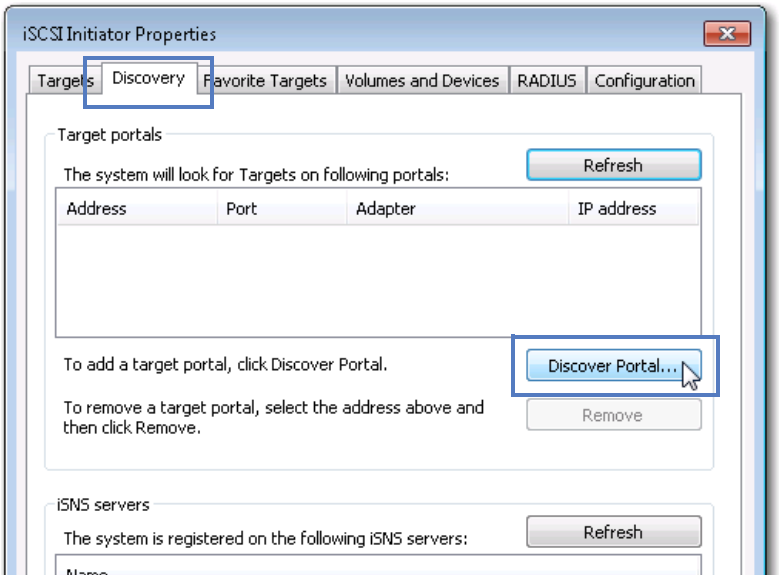
3. Type the IP address for the network host.
4. Click Add.

CONNECTING iSCSI TARGETS WITH CHAP FOR WINDOWS

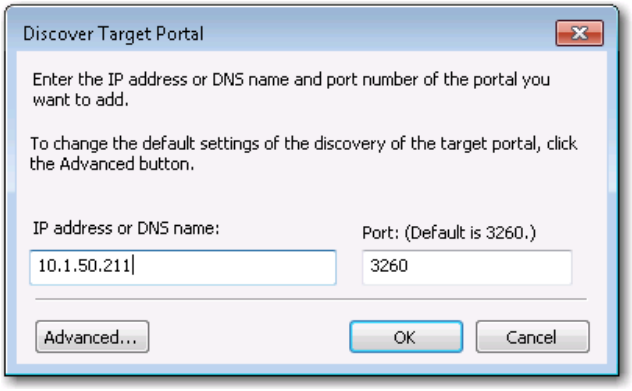
The following instructions describe how to connect your network host computers in Windows Server 2008 R2. Your iSCSI initiator interface may differ slightly depending on your Windows operating system.

To establish an iSCSI connection with CHAP enabled:

1. Open Microsoft iSCSI Initiator and click the Discovery tab.
2. Click Discover Portal... (Your version of iSCSI initiator may use Add depending on your Windows OS.)

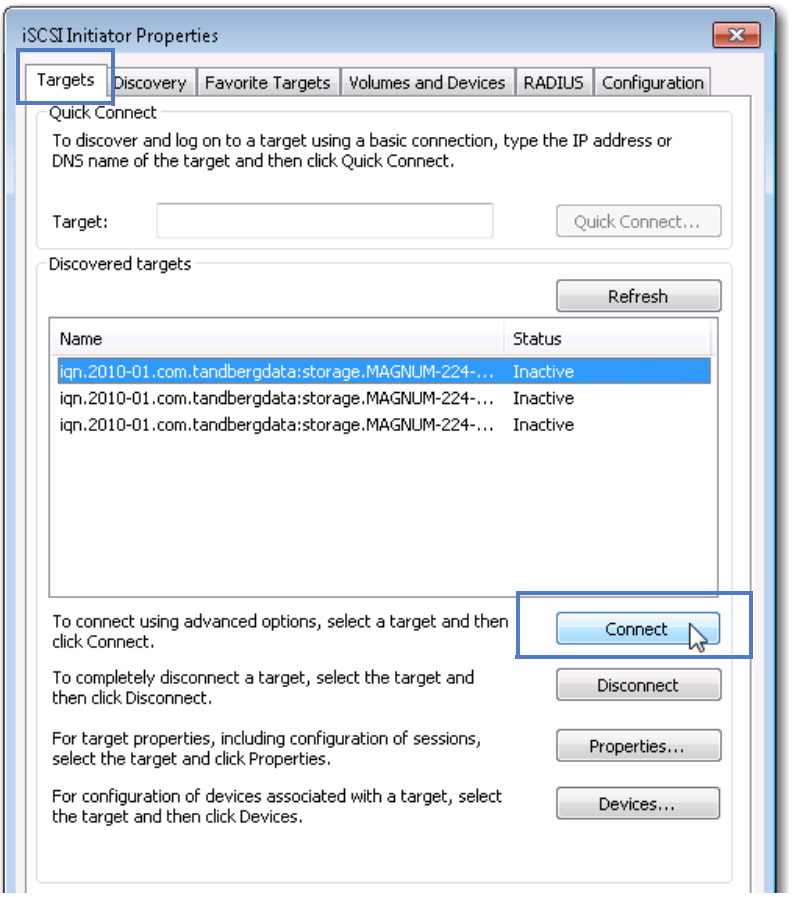


The Discover Target Portal dialog window opens.



3. In the Discover Target Portal dialog window, type the IP address for the RDX QuikStation. Click OK.
4. Click the Targets tab.

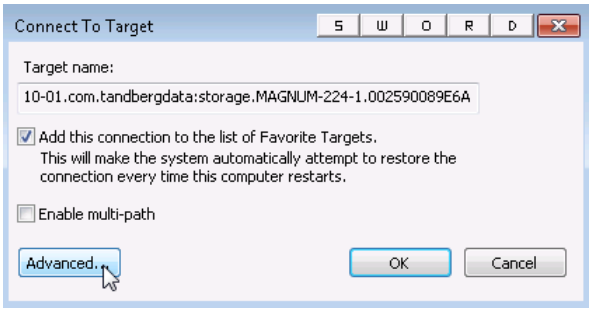
Depending on how you configured the logical device type for the QuikStation, you will see two to eight iSCSI targets. The screenshot below depicts a TandbergData StorageLibrary T24 configuration. The three iSCSi targets connect the library and two LTO-3 tape drives to the host.



5. For each iSCSI target, complete the following steps:

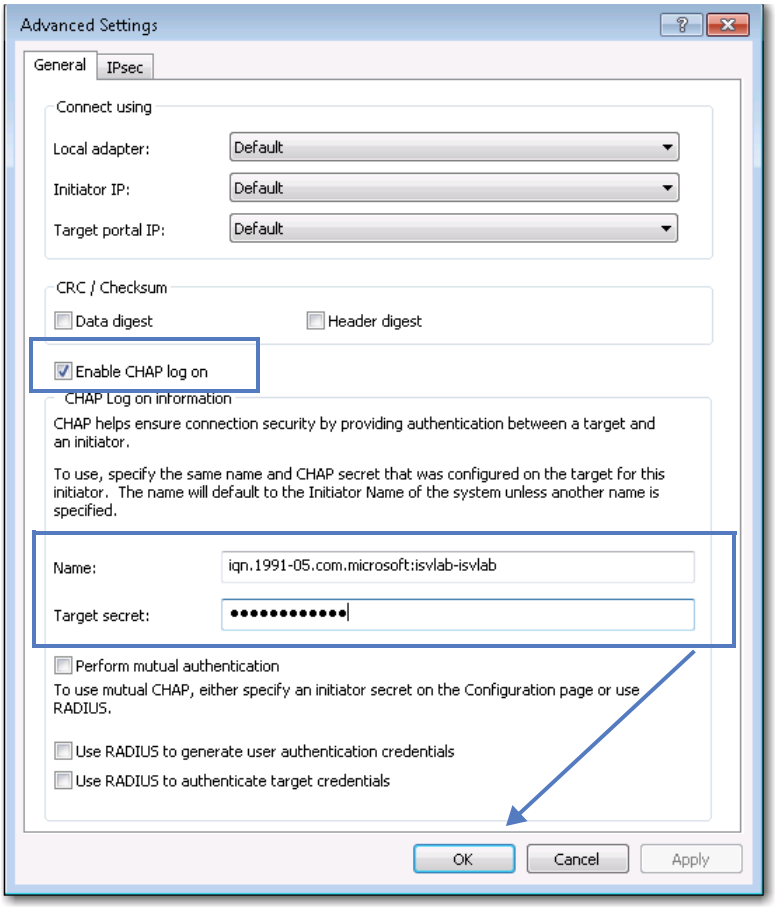
   a. Select an iSCSI qualified name (IQN). Click Connect. (Your version of iSCSI initiator may use Log On... depending on your Windows OS.)

      The Connect to Target dialog window opens.



   b. Select the "Add this connection to the list of Favorite Targets" checkbox. Click Advanced....

The Advanced Settings dialog window opens.



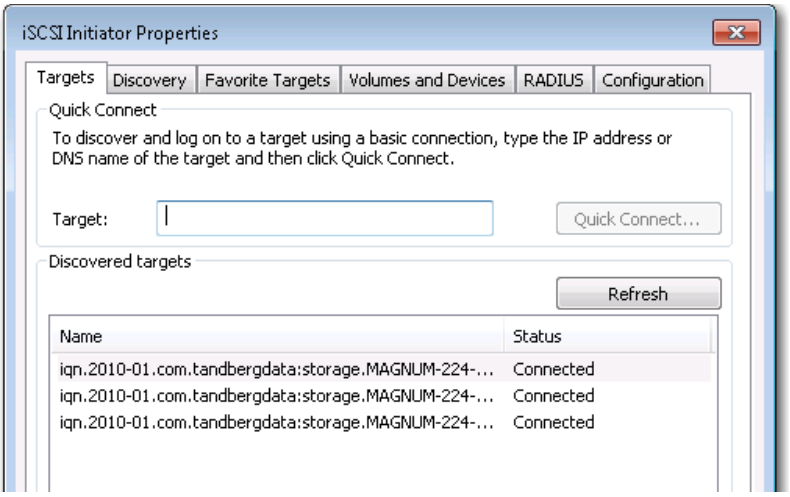
c. Select the "Enable CHAP log on" checkbox.

d. Type the target secret. This secret must match the CHAP secret that was set in the RDX QuikStation Remote Management Console for this particular iSCSI target.

Note: The host initiator name, which is displayed above the target secret in the Advanced Settings dialog, must match the initiator user name that is specified in the Remote Management Console.

e. Click OK, then click OK again in the Connect to Target dialog window.

The RDX QuikStation's iSCSI target should display as "connected" in the Discovered Targets dialog window, as shown below.



Important Before you shutdown or restart the RDX QuikStation for any reason, Tandberg Data recommends that you disconnect all iSCSI initiators.

CONNECTING iSCSI TARGETS WITH CHAP FOR LINUX

The following instructions describe how to connect iSCSI targets with CHAP authentication using Linux Open-iSCSI Initiator. Open-iSCSI Initiator is available for Redhat Enterprise Linux, CentOS, Fedora Linux, Debian, and Ubuntu operating systems. For more information about using Open-iSCSI with your specific Linux operating system, refer to your Linux distribution web site.

1. Install Open-iSCSI initiator.

   To install the iSCSI initiator, enter the following command:

   ```
   # yum install iscsi-initiator-utils
   ```

   For Ubuntu and Debian operating systems, enter the following command:

   ```
   $ sudo apt-get install open-iscsi
   ```

2. Configure CHAP authentication.

   a. Open the **iscsid.conf** file using a vi text editor with the following command:

   ```
   # vi /etc/iscsi/iscsid.conf
   ```

   b. Set the authmethod to CHAP by replacing *None* with *CHAP* so that the following line reads:

   ```
   "node.session.auth.authmethod = CHAP"
   ```

c. Set the host initiator user name and CHAP password by uncommenting the following lines and replacing the variables with the actual host initiator name and password needed to connect to the iSCSI target.

```
#node.session.auth.username = (host initiator name)

#node.session.auth.password = (CHAP password)

#discovery.sendtargets.auth.username = (host
initiator name)

#discovery.sendtargets.auth.password = (CHAP
password)
```

d. Restart the iSCSI service by entering the following command:

```
# /etc/init.d/iscsi start
```

3. Discover iSCSI Targets.

To discover the RDX QuikStation iSCSI targets, enter the following command, replacing the variable *RDX QuikStation IP address* with the actual IP address for your RDX QuikStation:

`# iscsiadm -m discovery -t sendtargets -p` *RDX QuikStation ip address*

Depending on how you configured the logical device type for the RDX QuikStation, you will see two to eight iSCSI targets.

4. Connect iSCSI targets.

To connect all discovered iSCSI targets, enter the following command:

```
# iscsiadm -m node -L all
```

To connect to an individual target, enter the following command, replacing *target* `IQN` *name* with the iSCSI qualified name (IQN) of the target and replacing *target portal* with the RDX QuikStation IP Address:

`# iscsiadm -m node -T` *target IQN name* `-p` *target portal* `--login`

Once all iSCSI targets are connected, the initiator (Linux host) can use the iSCSI disks as a normal disk. It appears under /dev/sdx devices and you can format, mount iSCSI disks like a normal disk.

! Important Before you shutdown or restart the RDX QuikStation for any reason, Tandberg Data recommends that you disconnect all iSCSI initiators.

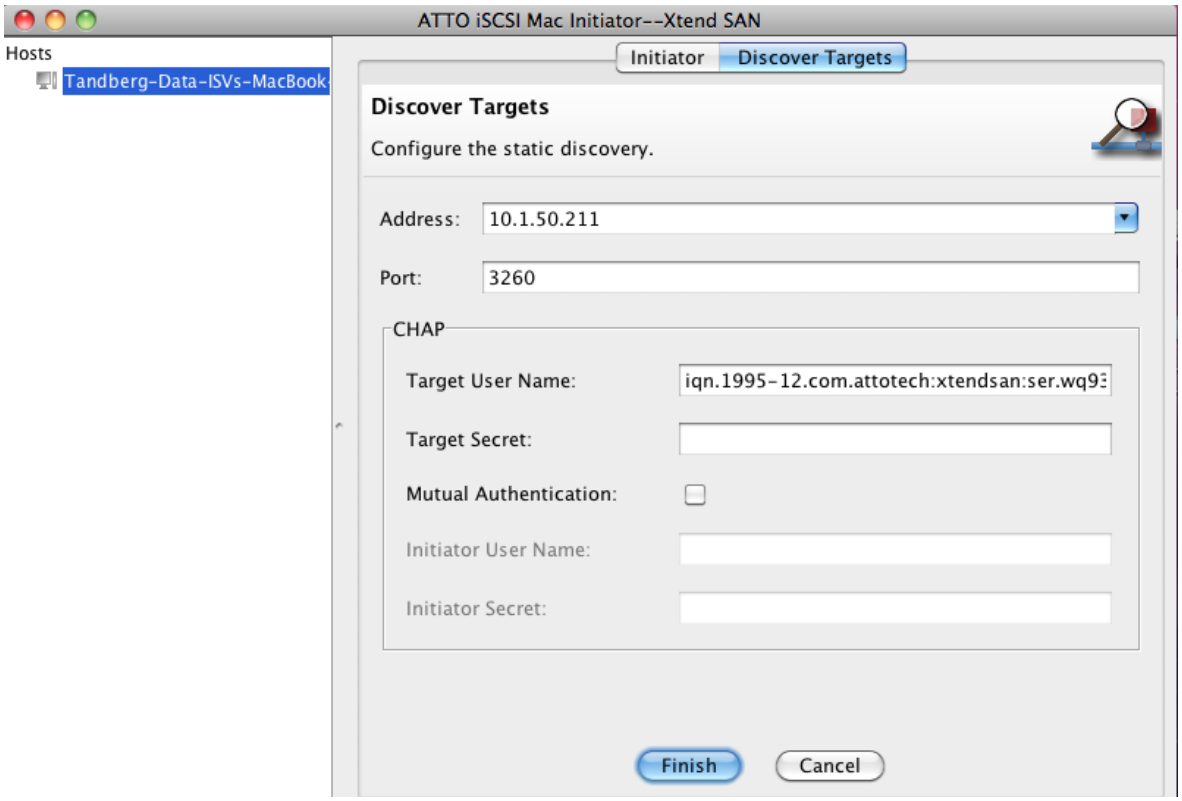
CONNECTING iSCSI TARGETS WITH CHAP FOR MACINTOSH

The following instructions describe how to connect your Macintosh host computers with CHAP authentication using Atto Technology's Xtend SAN iSCSI initiator. Xtend SAN is compatible with Mac OS X 10.4.x and later. While we do not require you to use Xtend SAN as your third-party Mac iSCSI initiator, we recommend that you use an iSCSI initiator that has been tested or recommended for use with your chosen backup application.

To establish a secure iSCSI connection:

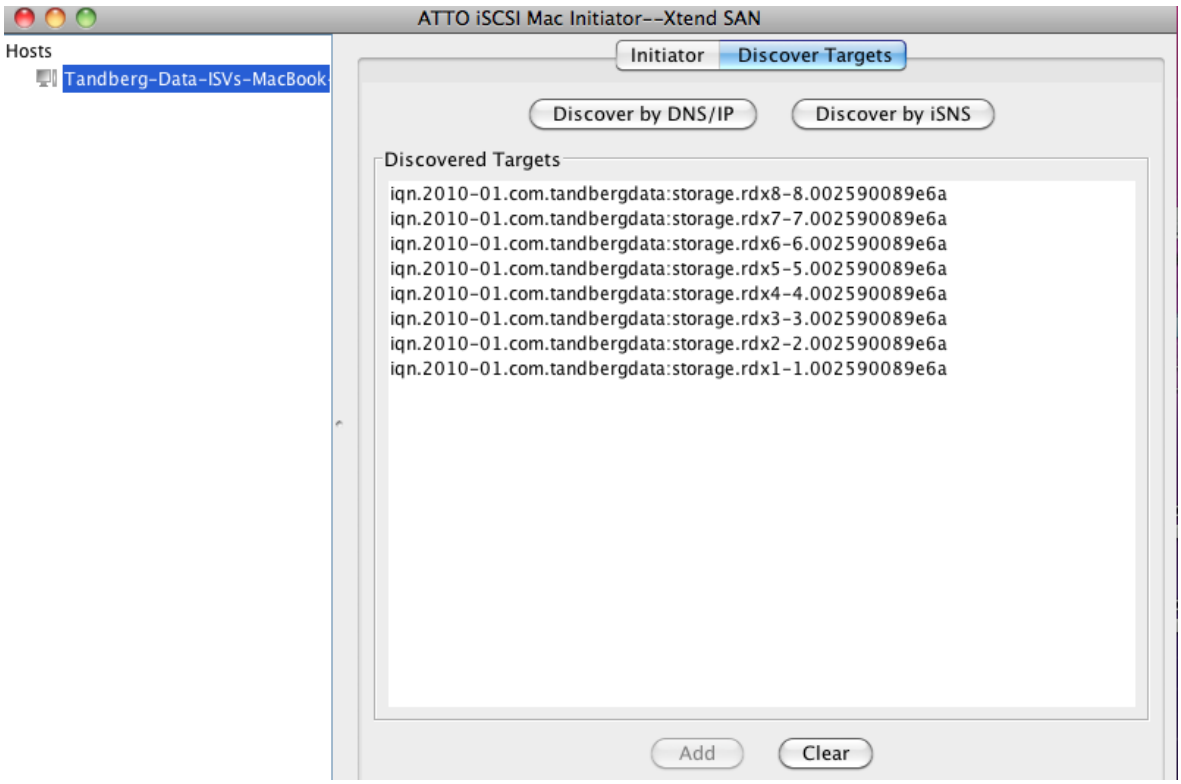
1. Open Xtend SAN iSCSI Initiator. Click the Discover Targets tab, then click Discover by DNS/IP.

   The following dialog window opens.



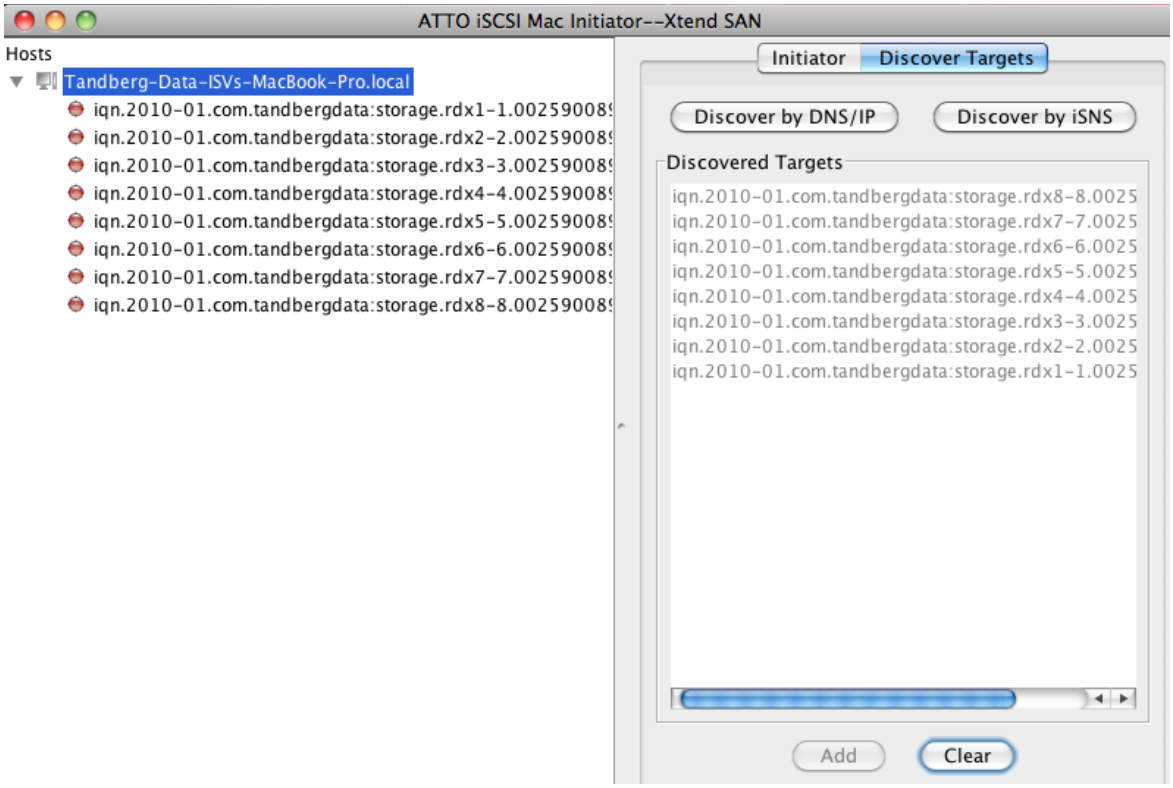
2. In the Address field, type the IP address for the RDX QuikStation. If you are using a port number other than the default, type the number in the Port field. Otherwise leave the default 3260 port number. Click Finish.

   The dialog window displays the discovered iSCSI targets. Depending on how you configured the logical device type for the QuikStation, you will see two to eight iSCSI targets. The screenshot below depicts a configuration of eight removable disks.



3. Highlight all the discovered targets and click Add.

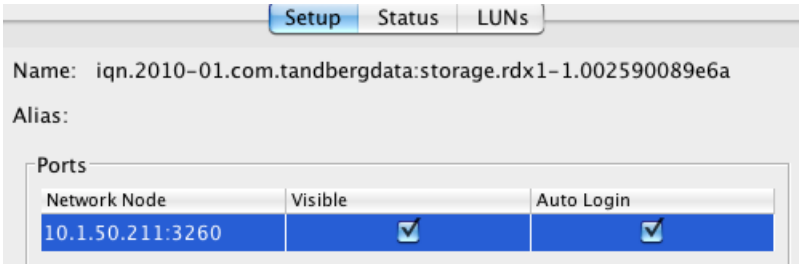
   The targets are displayed in the left pane with a red icon, signifying that they are not yet connected.



4. For each iSCSI target, complete the following steps to connect the target:

   a. Select an iSCSI qualified name (IQN) from the left pane.

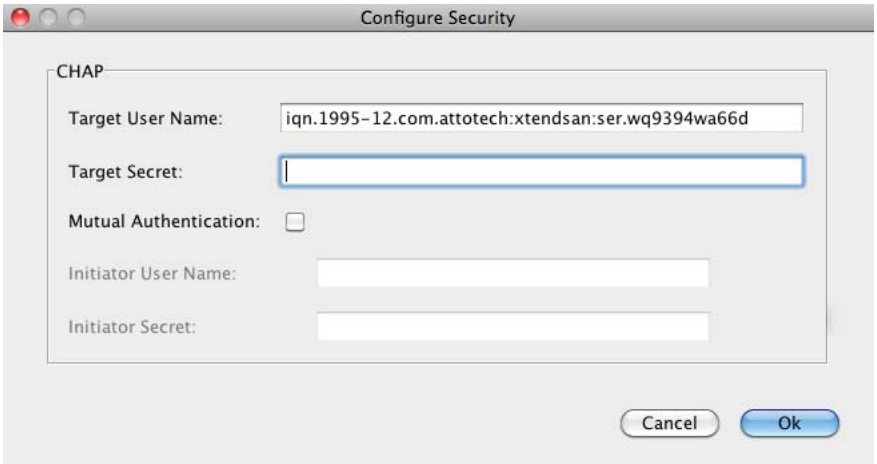
      The target's port information opens in the center pane.



   b. Select the "Visible" checkbox and the "Auto Login" checkbox.

   c. Click Security.

      The Configure Security dialog window opens.



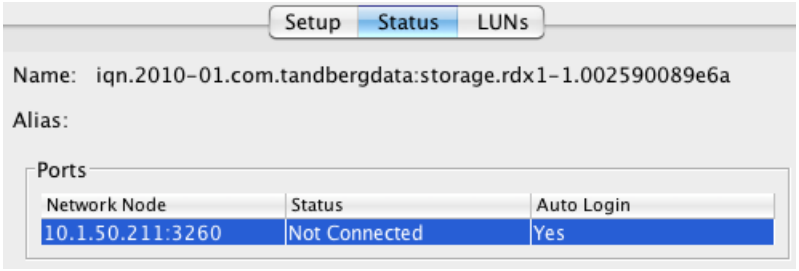
   d. Type the target secret. This secret must match the CHAP secret that was set in the RDX QuikStation Remote Management Console for this particular iSCSI target.

   Note: The target user name (the host's IQN name), must match the user name that is specified in the iSCSI Management settings of the Remote Management Console.

   e. Click Ok.

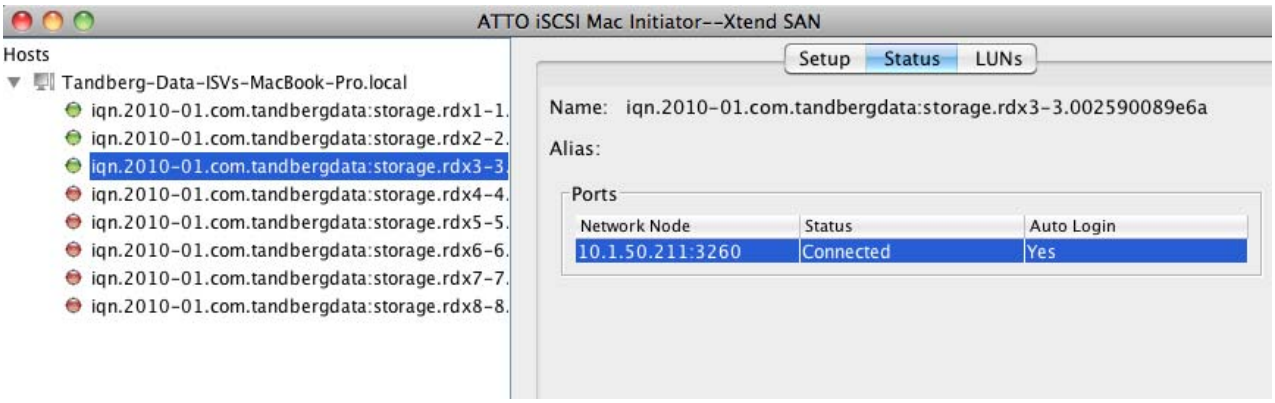
   f. Click the Status tab.

      The target's connection status is displayed.



g. Select the Network Node and click Login.

The iSCSI targets will display with a green icon when they are connected to the RDX QuikStation, as shown below.



! **Important** Before you shutdown or restart the RDX QuikStation for any reason, Tandberg Data recommends that you disconnect all iSCSI initiators.

4

SYSTEM CONFIGURATION

This chapter describes the RDX QuikStation system settings that a user with administrator privileges can view and modify.

The chapter includes the following sections:

- System settings overview . . . . . page 48
- Setting date and time . . . . . page 49
- Configuring network information . . . . . page 50
- Setting email notifications . . . . . page 53
- Setting RDX QuikStation options . . . . . page 54
- Managing user groups . . . . . page 60
- Recovering the built-in administrator password . . . . . page 64

SYSTEM SETTINGS OVERVIEW

As a user with administrator permissions, the following functions are available for you to view and modify from the Remote Management Console's System Settings menu.

Table 4-1 *RDX QuikStation System Settings*

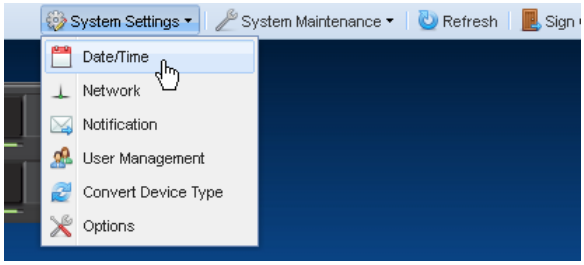
System Setting Menu Name	Description
Date and Time	Allows you to set the date and time for the RDX QuikStation (see page 49).
Network Information	Allows you to modify the RDX QuikStation name, assign a static IP address, configure DNS server addressing information, and set a port bonding mode (see page 50).
Notification	Allows you to specify email addresses where messages for error reporting and password recovery are sent, enable SNMP authentication, and customize email sender and subject line text (see page 53).
User Management	Allows an administrator to add, remove, and edit users that are allowed access to the RDX QuikStation Remote Management Console (see page 60).
Convert Device Type	Allows you to change the logical device type for the RDX QuikStation. For more information about logical device types, see Chapter 5. **Note:** If you change from a virtual library configuration to a removable disk configuration, you will need to reformat the RDX cartridges (see page 86). **Important:** If you convert the logical device type, make sure there are no active host connections to the iSCSI targets before doing so.
Options	The Options dialog window is divided into four tabs: System, Removable Disk, Automation, and Diagnostics. See "Setting RDX QuikStation Options" on page 54 for more information.

SETTING DATE AND TIME

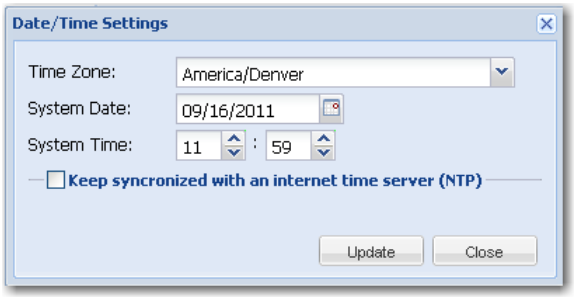
Note: You must have administrator privileges to set the date and time.

To set the date the time and time for your RDX QuikStation:

1. From the Remote Management Console main menu, select System Settings > Date/Time.



The Date/Time Settings dialog window opens.



2. Choose one of the following options:

   - Modify the time zone, system date, and system time fields. Click Update.
   - Select the "Keep synchronized with an internet time server (NTP)" checkbox. Type the NTP server IPv4 address or fully qualified domain name in the Time Server field. Select your time zone. Click Update.

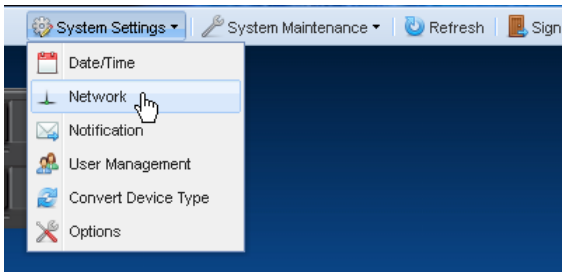
   Note: At least one city from every time zone region is listed. If you do not see your city listed in the pull-down menu, look for another city that is in the same time zone as your city. For example, "America/Los Angeles" represents the Pacific time zone.

CONFIGURING NETWORK INFORMATION

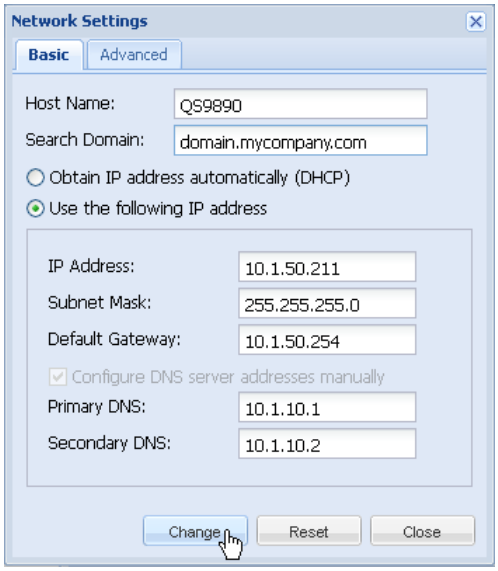
Note: You must have administrator privileges to configure network information.

To configure network information for the RDX QuikStation:

1. From the Remote Management Console main menu, select System Settings > Network.



The Network Settings dialog window opens.



2. Modify the host name if desired. The default RDX QuikStation host name uses "QS" and the last four digits of the unit's serial number.

3. Add or modify the search domain (DNS lookup domain). This field is optional.

4. Choose to either obtain network addressing automatically via DHCP or set static addressing information. Tandberg Data recommends you set a static IP address to prevent inadvertent address changes.

   Note: If you are setting static network information, the default gateway is an optional field.

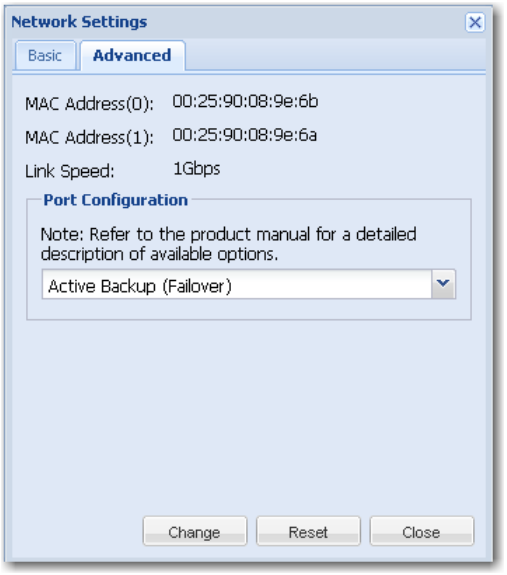
5. Enter a primary and secondary DNS server address. These fields are optional.

6. Select an ethernet port configuration. By default, the port setting is set for Active Backup, or Failover. In most cases, this default setting will suffice for your network environment. See Configuring Advanced Network Settings in the section below for more information.

7. Click Change.

CONFIGURING ADVANCED NETWORK SETTINGS

The Advanced tab section of the Network Settings dialog window displays MAC address and link speed information and also provides port configuration options (see Table 4-2 on page 52).



To change the port configuration:

1. Select the port configuration from the pulldown menu.
2. Click Change.

Port Configuration Options

The RDX QuikStation has two Gigabit Ethernet ports to provide failover protection and high availability network connectivity. In network environments, it is a common practice to configure two or more external ports as a single, logical, bonded port using an industry standard feature called Link Aggregation, also known as port bonding or port trunking.

The behavior of the logically-bonded ports depends upon the mode. For the RDX QuikStation, you can configure port bonding for either active backup/failover or adaptive load balancing.

The following table describes the two port bonding modes that are available in the RDX QuikStation.

Table 4-2 *Port bonding options*

Port bonding mode	Description
Active-backup (failover)	The Active-backup or failover mode is the default configuration for the RDX QuikStation. This mode uses one port (adapter) and will only switch to the other port if the active port fails.
Adaptive load balancing (balance-alb)	Adaptive Load Balancing provides load balancing of transmit and receive traffic. It also provides automatic failover if one cable fails. This option works with any switch and is best used in a multi-disk environment that has multiple iSCSI host connections. You might consider using this option if you have configured your RDX QuikStation as eight RDX drives, and you are using most or all of the eight iSCSI disk targets.

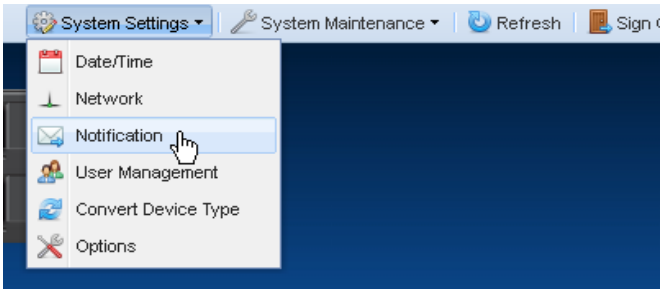
SETTING EMAIL NOTIFICATIONS

Note: You must have administrator privileges to set email notifications.

The Notifications Settings dialog window consists of three tabs: basic, authentication, and customization. The authentication tab allows you to add a user name and password for SMTP authentication, if your email server requires it. The Customization tab allows you to define the "From" email address and the subject text for email messages that are sent by the RDX QuikStation.

SETTING BASIC EMAIL NOTIFICATION

1. From the Remote Management Console main menu, select System Settings > Notification.



2. Type one or two valid email addresses in the email recipient fields. The RDX QuikStation will send any system error messages, such as a fan failure or an RDX dock failure, to the addresses that you specify. The RDX QuikStation will also send any password recovery requests to these addresses.

3. Enter a fully-qualified email server domain name. For example, *mailhost.mycompany.com*. You can also enter a valid IPv4 address. For example, *192.168.1.101*.

4. If your email server uses SSL/TSL, select the checkbox to enable it.

5. Click Change.

SETTING SMTP AUTHENTICATION

1. Click the Authentication tab from the Notification Settings dialog window.

2. Type the SMTP user name and password for your email server.

3. Select the authentication method from the pulldown menu – either "plain" or "CRAM-MD5."

4. Click Change.

CUSTOMIZING EMAIL SUBJECT AND "FROM" ADDRESS

1. Click the Customization tab from the Notification Settings dialog window.
2. Type your desired "From" email address using standard email format, such as "myQuikStation@mycompany.com." The "From" email text does not need to be a valid email address.
3. If desired, type a custom subject text. This text will be used in all emails that are generated by your RDX QuikStation.
4. Click Change.

SETTING RDX QUIKSTATION OPTIONS

The Options dialog window is divided into four tabs: System, Removable Disk, Automation, and Diagnostics.

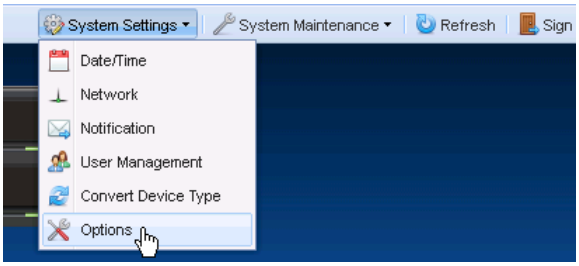
Refer to the table below for information about each tab.

Table 4-3 *RDX QuikStation option settings*

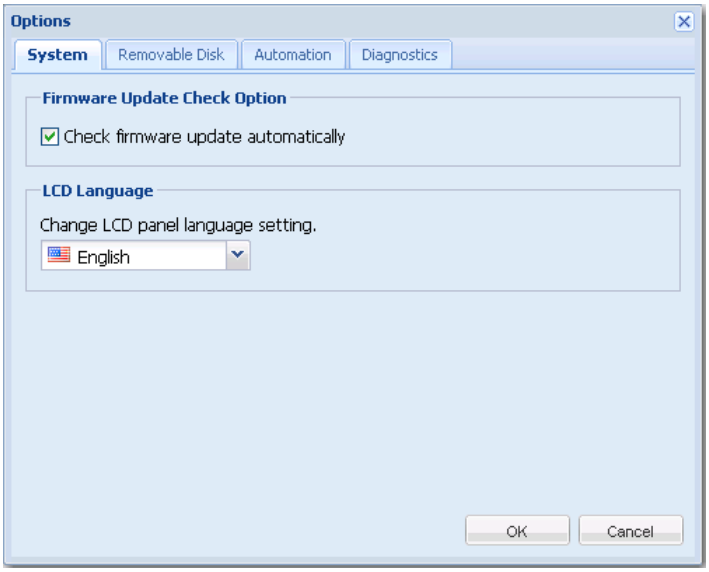
Tab	Option	Description
System	Automatic Firmware Updates	Allows you to turn off the option to automatically check for firmware updates when you log into the Remote Management Console.
	LCD Language	Allows you customize the language that is displayed in the RDX QuikStation's LCD panels. The language options are English, French, German, or Spanish.
Removable Disk	Unsafe Eject	Allows you to enable the "Unsafe Eject" mode for RDX cartridges that have an established host connection (see page 56).
Automation	Auto-insert (import/export functionality)	Allows you to control how the RDX QuikStation handles tape library import/export slot functionality (see page 57).
Diagnostics	Log Level	Allows you to change the log level from Normal to Detail or Extend. Tandberg Data recommends you only change the log level if you are instructed to do so by Tandberg Data Technical Support. **Note:** If you change the log level, the system will default to "normal" once the Management Console browser session is closed.
	Remote Access	Allows you to control remote access to the RDX QuikStation via SSH (Secure Shell). The default setting disables SSH remote access.

To access the Options dialog window:

- From the Remote Management Console main menu, select System Settings > Options.



The Options dialog window opens with the System tab selected.



SETTING REMOVABLE DISK OPTIONS

Note: The removable disk option only applies to disk configurations.

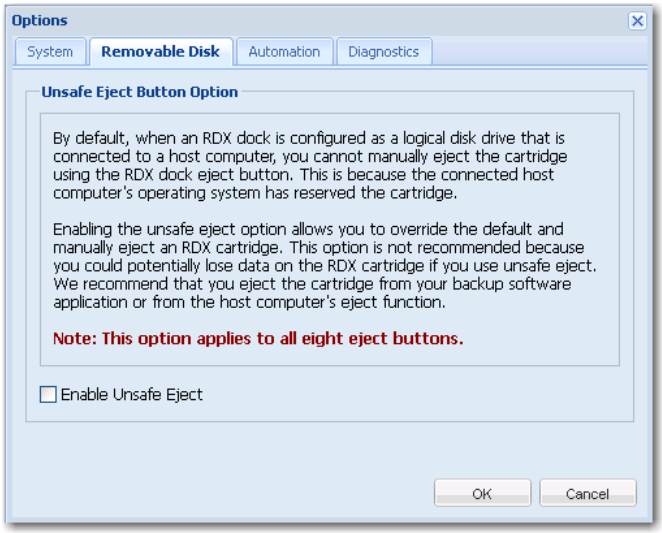
You can enable the "Unsafe Eject" mode for RDX cartridges that have an established host connection.

By default, when an RDX dock is configured as a logical disk drive that is connected to a host computer, you cannot manually eject the cartridge using the RDX dock eject button or from using the eject function in the Remote Management Console. This is because the connected host computer's operating system has reserved the cartridge.

Enabling the unsafe eject option allows you to override the default and manually eject an RDX cartridge. This option is not recommended because you could potentially lose data on the RDX cartridge if you use unsafe eject. We recommend that you eject the cartridge from your backup software application or from the host computer's eject function.

To enable Unsafe Eject:

1. Click the Removable Disk tab from the Options dialog window.



2. Select the "Enable Unsafe Eject" checkbox.

3. Click OK.

SETTING THE AUTO-INSERT OPTION

The auto-insert option controls how the RDX QuikStation handles tape library import/export slot functionality.

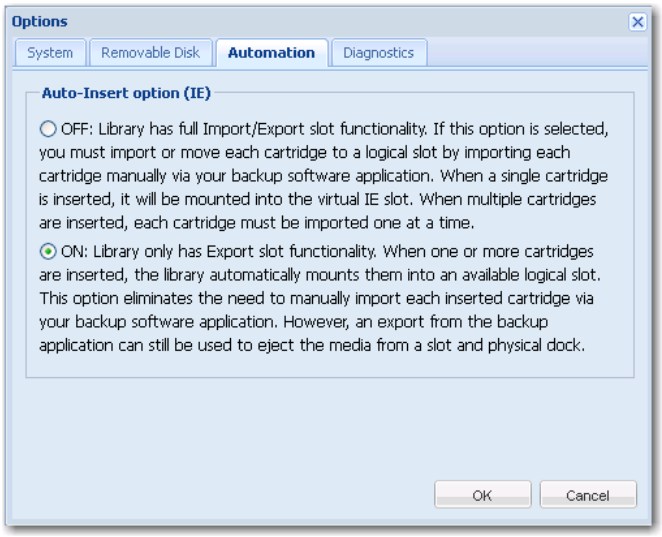
The following table describes RDX QuikStation behavior when this option is turned off and when it's turned on.

Table 4-4 *Auto-insert (I/E port behavior) option settings*

Auto-insert option setting	Behavior
OFF	When a single RDX cartridge is inserted into any dock, it will be mounted into the virtual IE port, awaiting an import command from your backup software. When multiple cartridges are inserted, the first cartridge that is detected by the library will be mounted to the virtual IE port. The remaining inserted cartridges will not display in the Remote Management Console until you import them one at a time via your backup software application (see Figure 4-1 and Figure 4-2). **Note:** Refer to your backup software documentation for tape library import/export commands and recommended use.
ON (Default)	When one or more RDX cartridges are inserted, the RDX QuikStation automatically moves them into an available logical slot (see Figure 4-3 and Figure 4-4). The auto-insert option eliminates the need to use your backup software to import each inserted cartridge. If the slot corresponding to the physical dock is available, that slot will be used by the RDX QuikStation. However, you can still perform an export from the backup application to eject the media from a slot and physical dock.

To change the auto-insert option:

1. Click the Automation tab from the Options dialog window.



2. Select your desired setting. Click OK.

Note: The default is the "On" setting. See Table 4-4.

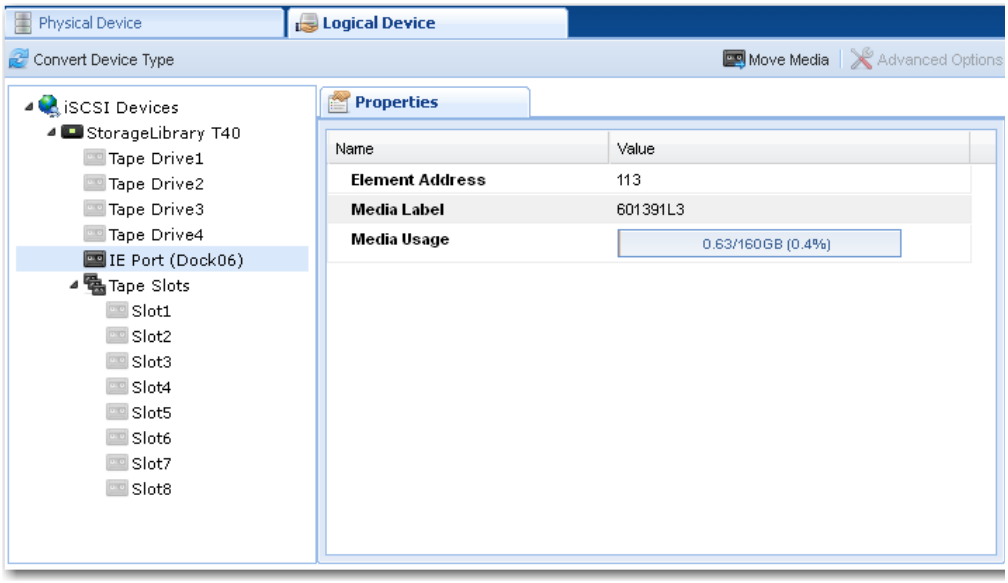


Figure 4-1 *A logical view of a tape library with the auto-insert option turned OFF. Note that only the IE Port displays as populated until you import the other cartridges one at a time with your backup software.*

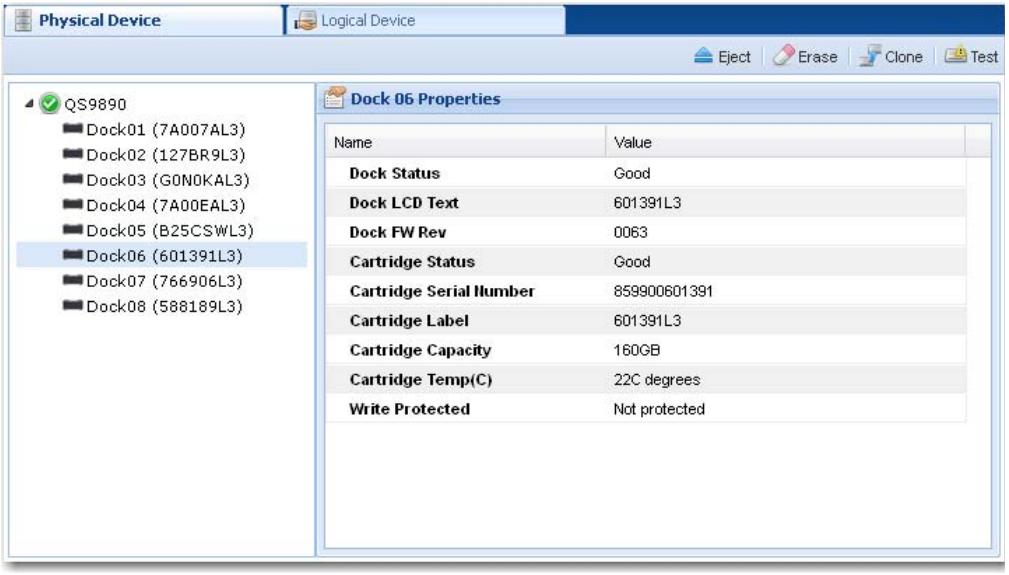


Figure 4-2 *A physical view of a tape library with the auto-insert option turned OFF. Note that four cartridges are displayed in their physical slots, where in Figure 4-1, only one cartridge is displayed in the IE port.*

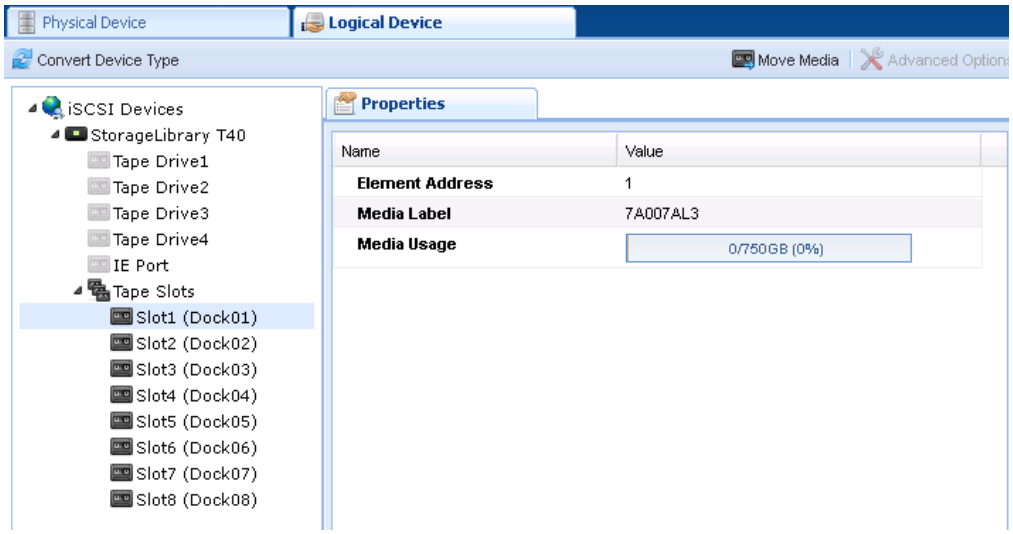


Figure 4-3 *A logical view of a tape library with the auto-insert option turned ON. Note that cartridges automatically mount to logical slots that correspond with their physical dock locations.*

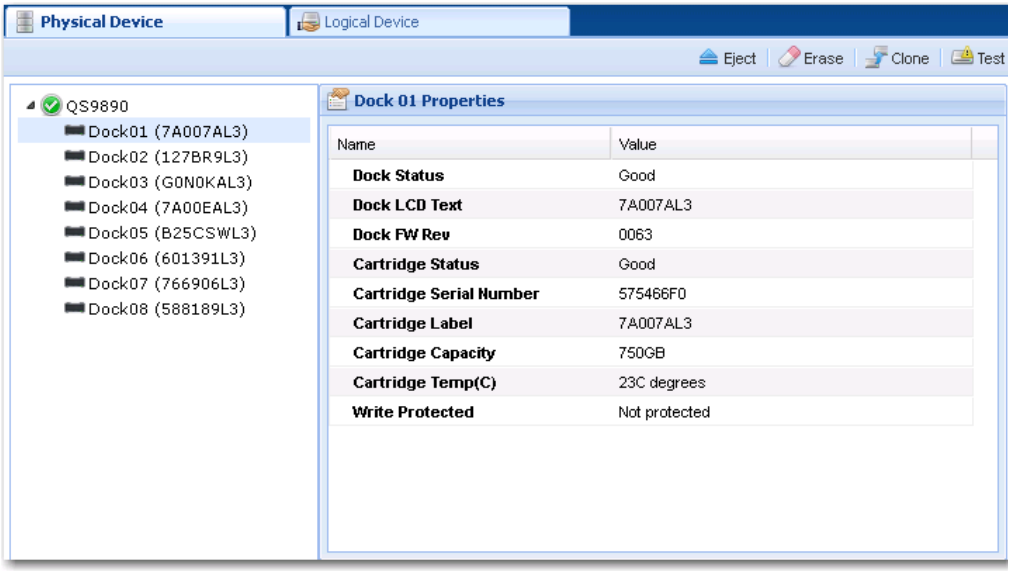


Figure 4-4 *A physical view of a tape library with the auto-insert option turned ON. Note that the cartridges' physical locations correspond with their logical tape slot locations (shown in Figure 4-3).*

MANAGING USER GROUPS

Note: You must have administrator privileges to manage user groups.

The RDX QuikStation allows you to set up three types of groups: administrator, manager, and user.

This section contains the following topics:

- Group permissions overview (page 61)
- Adding users to a group (page 61)
- Removing users from a group (page 62)
- Editing user information (page 63)

Group Permissions Overview

The following table describes the functionality each group can access in the Remote Management Console.

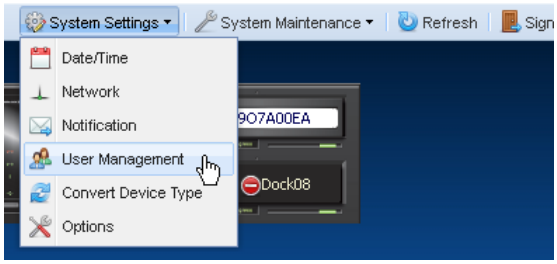
Table 4-5 *RDX QuikStation Group Permissions*

User	Manager	Administrator
Users have permission to do the following: ▸ change their log-in password. ▸ view physical and logical device information. ▸ refresh/update device information manually.	Managers have permission to do the following: ▸ view group information. ▸ view iSCSI Management security and connection status. ▸ set options for automatic web page refresh and diagnostic log level. ▸ change their log-in password. ▸ view physical and logical device information. ▸ refresh/update device information manually.	Administrators have access to all functionality. This includes permission to: ▸ set system and network configuration. ▸ set iSCSI security. ▸ add, remove, and edit groups. ▸ format/erase RDX cartridges. ▸ clone data on RDX cartridges. ▸ convert logical device type. ▸ update firmware. ▸ perform system diagnostic tests. ▸ access all other system maintenance tasks.

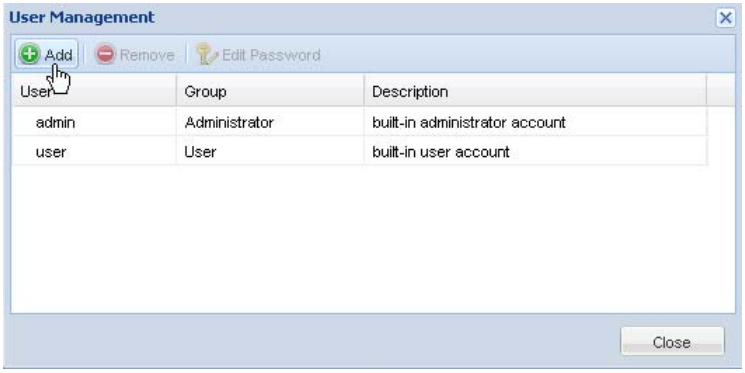
Adding Users to a Group

To add users to a group:

1. From the Remote Management Console main menu, select System Settings > User.



The User Management dialog window opens.



2. Click +Add.

3. Type a user name and password in the applicable fields. The following conditions apply:

   - User names are not case sensitive and can only contain letters, numbers, and the "_" character. There is no limit on the number of characters.

   - Passwords are case sensitive and must be 6 to 30 characters long. Passwords can contain any combination of letters, numbers, and the following special characters: -,!@#$% ^ &*_.

4. Select the group you want to assign the user to from the pulldown menu. For a description of the permissions available to each group, see page 61.

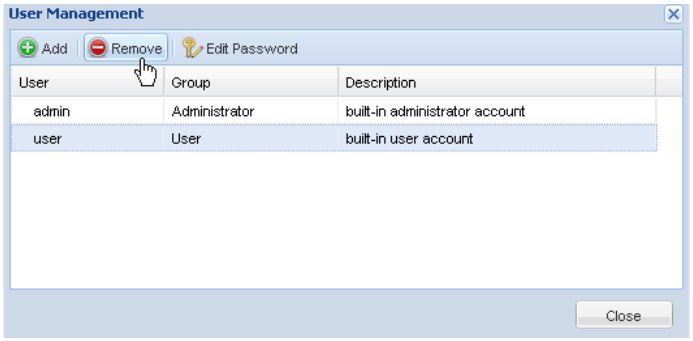
5. Type a description to identify the user, if desired.

6. Click Add.

REMOVING USERS FROM A GROUP

To remove users from a group:

1. From the User Management dialog window (go to System Settings > User), select the user that you want to remove. Click - Remove.



2. Type your RDX QuikStation administrator password. Click OK.

3. Click Yes to confirm.

EDITING USER INFORMATION

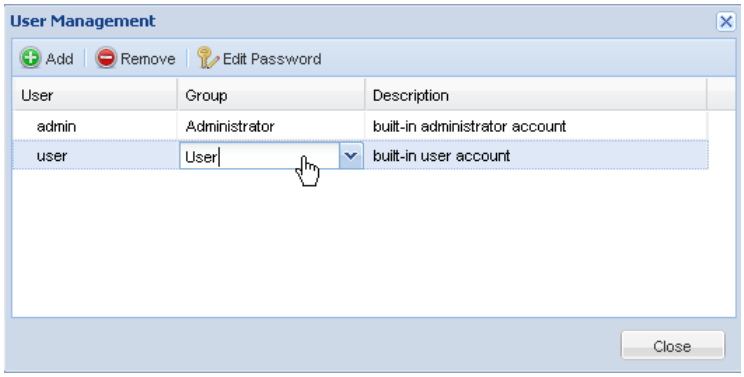
You can edit a user name, the group assignment, description, and password.

Note: For the built-in administrator account, you can only edit the password.

Editing the user name, group, or description

1. From the User Management dialog window (go to System Settings > User), double-click in the field you want to edit.

   The field becomes editable, as shown below.



2. Make your desired changes. Click Enter.

Note: User names can only contain letters, numbers, and the "_" character. There is no limit on the number of characters.

Editing a password

1. From the User Management dialog window (go to System Settings > User), select the user.

2. Click Edit Paswword.

3. Type a new password. Type the password again to verify. Click OK.

Notes: For users assigned to administrator and manager groups, you must first enter your RDX QuikStation administrator password before editing the password.

Passwords are case sensitive and must be 6 to 30 characters long. Passwords can contain any combination of letters, numbers, and the following special characters: -,!@#$%^&*_.

RECOVERING THE BUILT-IN ADMINISTRATOR PASSWORD

If you have forgotten the built-in administrator password, you can reset the password via email or via USB.

Note: The built-in administrator user name is **Admin** (cannot be modified) and the default password is **Admin!** (case sensitive).

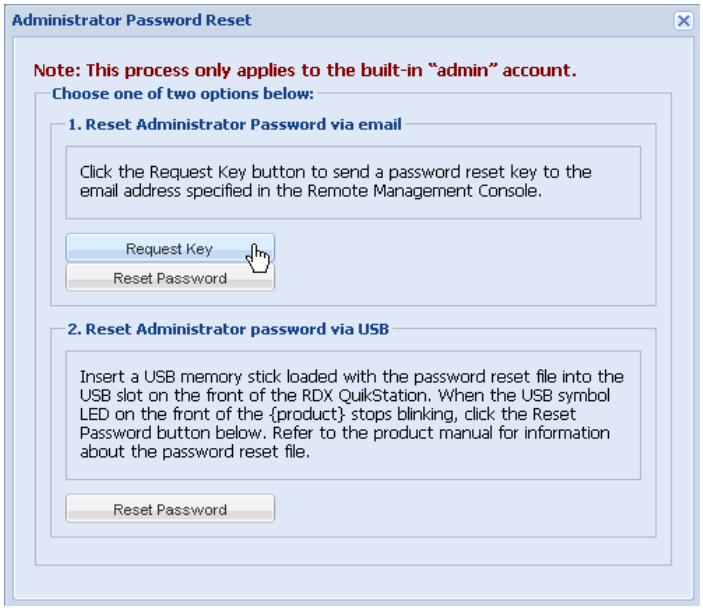
If you have forgotten the user name and password for any other account, contact the RDX QuikStation administrator, or sign in as the built-in administrator account to edit the password (see page 63).

RESETTING THE PASSWORD VIA EMAIL

1. From the RDX QuikStation Sign-in dialog window, click the ? in the upper-right corner.

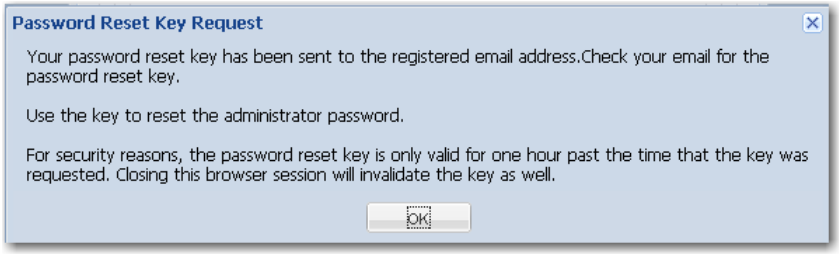
2. Select the Administrator radio button. Click Continue.

   The Administrator Password Reset dialog window opens.



3. Select Request Key.

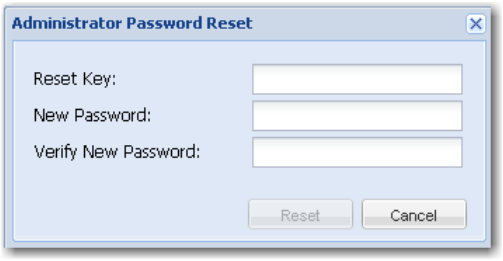
The RDX QuikStation sends an email message to the address that was specified in the Remote Management Console (see page 53). The request key will remain valid for one hour.



4. Click OK and leave the Administrator Password Reset dialog window open.

   Note: If you close the browser session, the request key that was sent via email becomes invalid.

5. Copy the request key from the email message and paste it into the Reset Key field.



6. Type a new password. Type the password again to verify. Click Reset.

   Note: Passwords are case sensitive and must be 6 to 30 characters long. Passwords can contain any combination of letters, numbers, and the following special characters: -,!@#$%^&*_.

RESETTING THE PASSWORD VIA USB

If an email notification address is not specified in the Remote Management Console, you can reset the built-in administrator password via USB by creating a **password.reset** file.

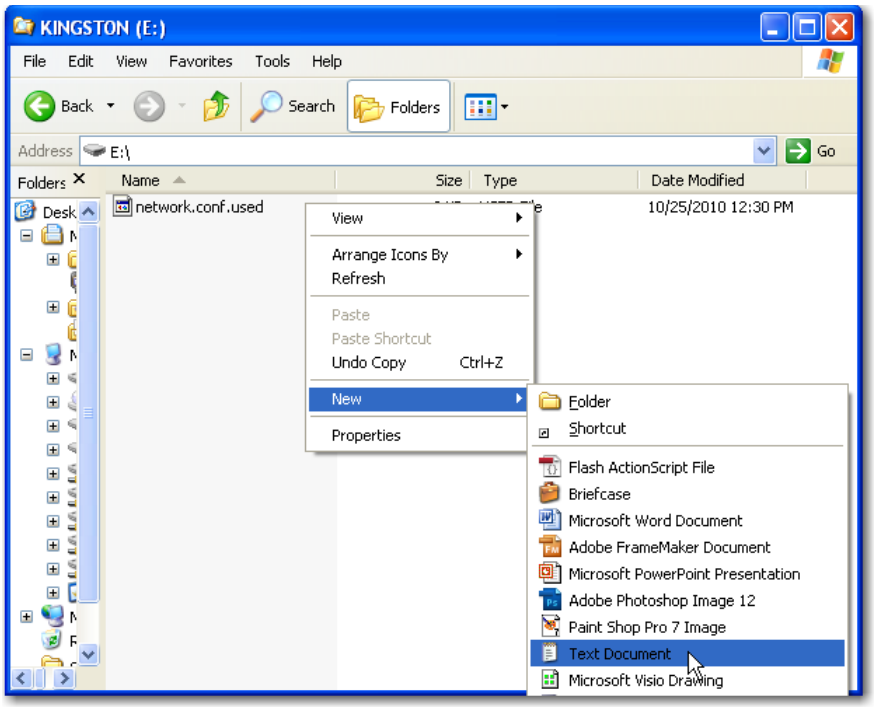
! **Important** The Tandberg Data-supplied USB flash drive includes the file **network.conf**. Make sure that this file name is changed to another name, for example **network.conf.used**, before you insert the flash drive into the RDX QuikStation.

Renaming the file prevents any inadvertent network configuration changes to your RDX QuikStation.

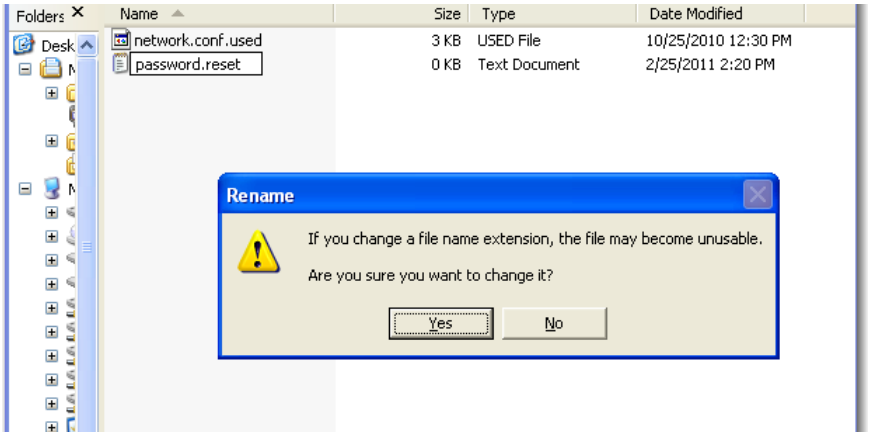
To create the **password.reset** file and reset the password via USB:

1. Insert the USB flash drive that was included in your RDX QuikStation accessory kit box into your computer. If you cannot find the flash drive, you can use any USB flash drive that is formatted with a VFAT file system.

2. Navigate to the flash drive and create a blank text file on the drive. (In Windows, right-click in the directory window, and select New>Text Document, as shown below.)



3. Rename the text file to **password.reset**. (In Windows, click Yes to confirm the file name change.)



4. Remove the USB flash drive from your computer and insert it into the RDX QuikStation's USB slot located on the center-front panel.

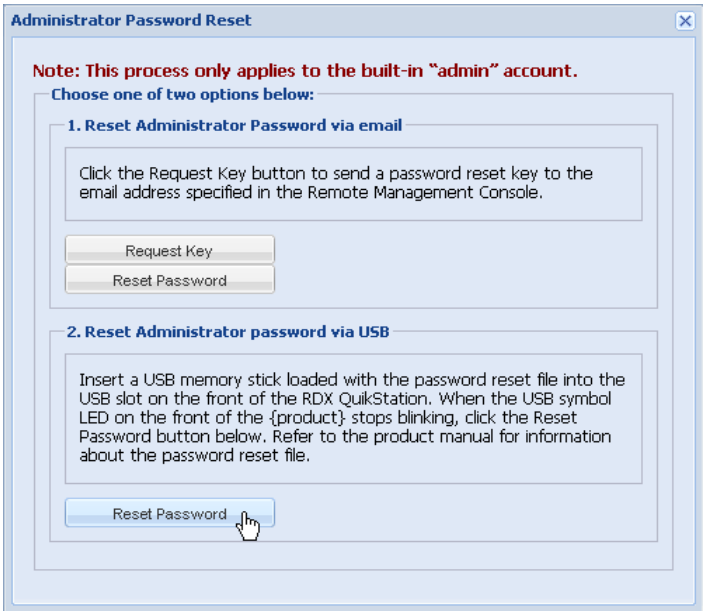
   The USB symbol on the center-front panel flashes and the LCD dock panels display "RstPasswd."

5. Remove the USB flash drive from the RDX QuikStation when the USB symbol stops blinking and the LCD dock panels flash "Done."

6. Connect to the RDX QuikStation Remote Management Console (see page 20). From the Sign-in dialog window, click the ? in the upper-right corner.

7. Select the Administrator radio button. Click Continue.

   The Administrator Password Reset dialog window opens.



8. Click Reset Password from the "Reset Administrator Password via USB" section of the dialog window.

9. Type a new password. Type the password again to verify. Click Reset. Click OK.

Note: Passwords are case sensitive and must be 6 to 30 characters long. Passwords can contain any combination of letters, numbers, and the following special characters: -,!@#$%^&*_.

5

LOGICAL DEVICE MANAGEMENT

This chapter describes the Remote Management Console's Logical Device interface.

The chapter includes the following sections:

- Logical device type overview . . . . . page 70
- Choosing a logical device type . . . . . page 71
- iSCSI devices overview . . . . . page 72
- Managing disks and tape drive configurations . . . . . page 74
- Managing tape library and autoloader configurations . . . . . page 76

LOGICAL DEVICE TYPE OVERVIEW

The following table compares the logical device types that the RDX QuikStation can emulate.

Table 5-1 *Comparison of logical device types*

Logical Device Type	Allowed active iSCSI connections per target	Number of iSCSI targets	Reported inquiry string	Available I/E slot	Available virtual tape drives	iSCSI security
RDX drives[a]	One active host connection is allowed for each iSCSI target.	Eight	RDX	n/a	n/a	You can set two types of iSCSI security: CHAP authentication and host authentication. Up to 10 initiator users or hosts are allowed for the drive target.
Tape drives		Eight	Ultrium 3-SCSI	n/a	Eight	
Disk autoloader		Two	RDX DiskLibrary	yes (see page 57)	n/a	You can set two types of iSCSI security: CHAP authentication and host authentication. Up to 10 initiator users or hosts are allowed for the library target. You cannot set security on the drive target; the drive inherits security from the library or autoloader.
T24 library		Three	Magnum 224		Two	
T40+library		Five	StorageLoader		Four	
StorageLoader		Two	StorageLoader		One	
Tape autoloader		Two	StorageLoader		One	
Hybrid –T24 Library and RDX drives		Seven	Magnum 224 and RDX	yes for the tape library	Two	
Hybrid – StorageLoader LTO and RDX drives		Six	StorageLoader and RDX	n/a for the RDX drives	One	

[a] The RDX drive is the recommended device type for disk configurations. The removable disk device type is available for legacy users.

Note: If you select the RDX Drive configuration, you must also install the RDX Utility, which is available from a link in the Logical Device Type Settings dialog window.

CHOOSING A LOGICAL DEVICE TYPE

There are many choices to look at when deciding which logical device type is best for your data storage needs. Some questions to consider are:

- Does your back-up application support removable disk or does it support tape only?
- Is your size of your backup job greater or less than the size of the physical RDX cartridge? For example, if you have 1 TB RDX cartridges, will your backup data fit on this one cartridge, or will you need to span the data across two or more cartridges?
- Do you require multiple, simultaneous backup jobs? For example, you may need to schedule multiple, simultaneous backup jobs to meet your backup window requirement. Simultaneous backups also allow you to break up your job to fit within the size of a single RDX cartridge.
- What backup application are you using? Does your backup application support spanning across multiple removable disk targets? (Applications that do support spanning for removable disk include Retrospect, ArcServe, and CommVault.)
- Does your backup application include a tape library unlimited drive option, which requires an extra license fee? With tape backups, if you require multiple, simultaneous backup jobs, you typically need to purchase a tape library option. If your backup application does not include a tape library option, you can choose the RDX drive logical device configuration, which does not require an extra license fee to perform multiple, simultaneous backups.

Table 5-2 *Choosing a logical device type*

Backup application support removable disk?	Backup job greater than size of RDX cartridge?	Need multiple, simultaneous backups?	Backup application support spanning for removable disk?	Unlimited tape drive option? (requires extra license fee)	Choose this logical device type:
Yes	No	Either Yes or No	No	No	Eight RDX Drives
Yes	Yes[a]		Yes	No	
No	No	Either Yes or No	No	No	Eight LTO-3 Tape Drives
No	Yes	No	No	Yes	StorageLoader LTO
No	Yes	Yes	No	Yes	T24 StorageLibrary with two LT0-3 tape drives
No	Yes	Yes	No	Yes	T40+ StorageLibary with four LTO-3 tape drives

[a] If yes, your backup application must support spanning for removable disk targets.

iSCSI DEVICE OVERVIEW

You can view general information about a logical device's iSCSI targets from the iSCSI Devices view in the Remote Management Console.

To navigate to the iSCSI Devices view:

- From the Logical Device interface, select iSCSI Devices from the tree view in the left pane.

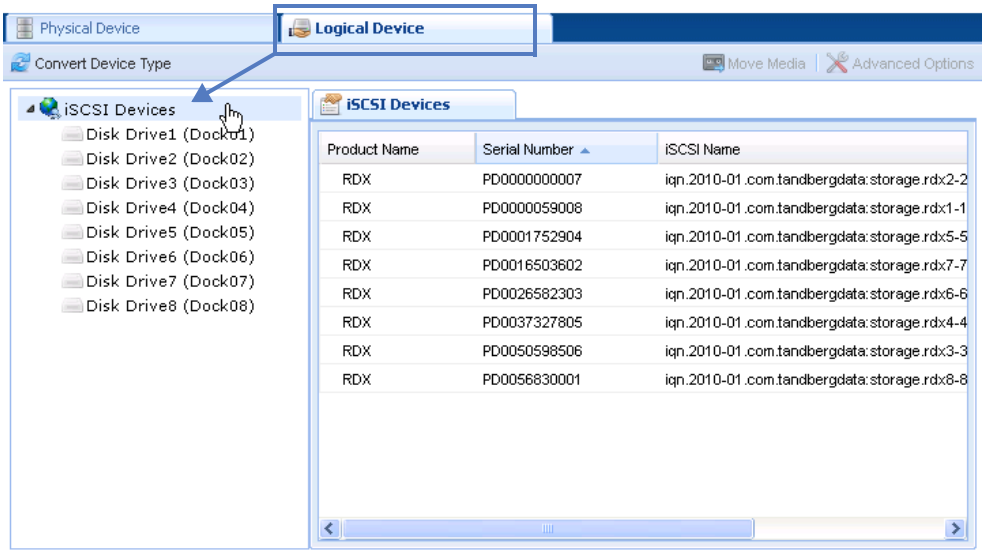


Figure 5-1 *iSCSI Devices view*

By default, the iSCSI Devices window displays the product name, serial number and iSCSI name for the logical device's iSCSI targets. Figure 5-1 shows the iSCSI targets for an Eight-RDX drive configuration.

CUSTOMIZING THE iSCSI DEVICES VIEW

You can sort the columns in ascending or descending order and select which columns are visible.

To customize the iSCSI Devices view:

- Select the ▼ arrow, which appears when you move your mouse over the product or serial number column head.

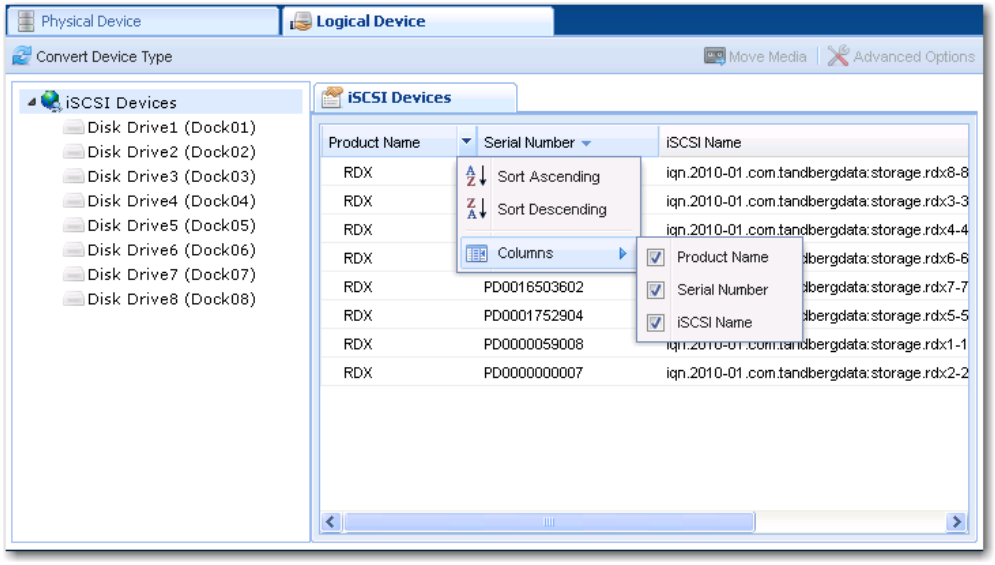


Figure 5-2 *Customizing the iSCSI Devices view*

MANAGING DISK AND TAPE DRIVE CONFIGURATIONS

If you have your RDX QuikStation configured as either eight RDX drives or as eight virtual LTO-3 tape drives, you can do the following tasks from the Logical Device interface:

- View logical device properties (page 74)
- View active iSCSI connections (page 75)
- Set iSCSI security for each target (page 34)
- Convert the logical device type (page 48)

Note: From the System Settings menu, you can set a removable disk option to allow unsafe eject of RDX cartridges. See page 56 for more information.

VIEWING LOGICAL PROPERTIES FOR RDX OR VIRTUAL TAPE DRIVES

The following properties are displayed for RDX and virtual LTO-3 tape drive targets.

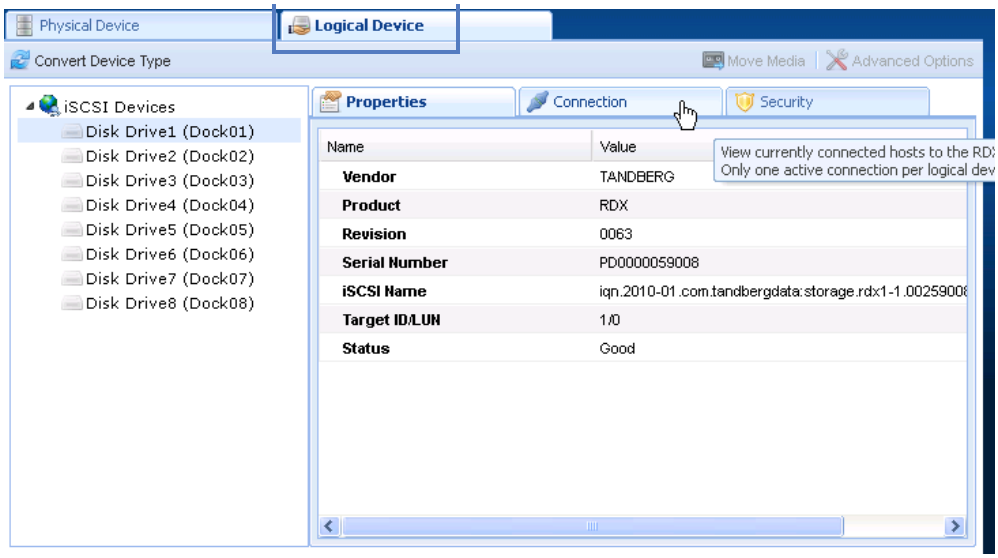
Table 5-3 *Logical properties for RDX and LTO-3 tape drive targets*

Property Name	Description
Vendor	The vendor name for the device. For RDX drives, the Vendor field always displays “TANDBERG.” For virtual tape drives, the Vendor field displays “HP”.
Product	The product name for the device. The Product field displays “RDX” for RDX drives and “Ultrium-3 SCSI” for tape drive configurations.
Revision	The firmware revision level for the logical device.
Serial number	The serial number for the logical device.
iSCSI name	The iSCSI name that identifies the RDX or tape drive target. The iSCSI name is used to connect the initiators (host computers) to the targets.
Target ID/LUN	The iSCSI target/logical unit number that identifies the RDX drive or tape drive.
Status	Displays the operating status for the device. The status displays either “good”, “offline”, or an error state.
Media label (visible if the dock has an RDX cartridge inserted)	The default media label is derived from the last eight digits of the RDX cartridge serial number, or the last six digits and “L3” for a tape.
Media state	The media state displays either “loaded” or “unloaded” depending on how the drive is set in your backup application.
Media usage	**Note:** Media usage for RDX drives is unavailable. This property is only reported for tape drive configurations. Displays the percentage of capacity that has been used for the RDX cartridge (or virtual tape cartridge).

VIEWING ACTIVE iSCSI CONNECTIONS FOR RDX OR TAPE DRIVES

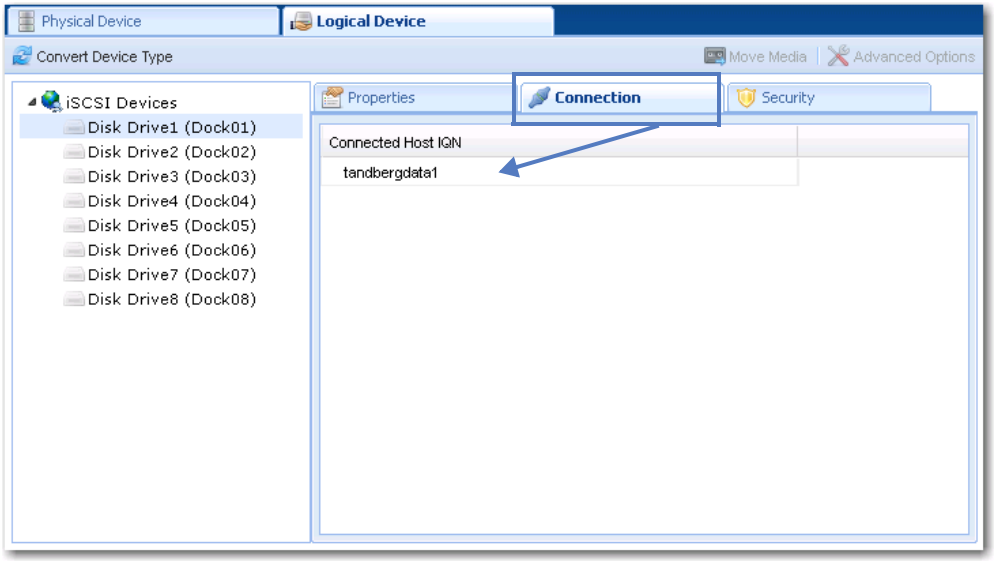
1. From the Logical Device interface, select an RDX or tape drive target from the tree view in the left pane.

   Note:2. The Connection tab only displays when you have selected an iSCSI device target from the left pane.



3. Click the Connection tab.

   If there is a host connected to the target, the host's initiator node name will be displayed in the Connection dialog window, as shown in the following example.



Note: You can also set iSCSI security for each iSCSI target. See "Setting iSCSI Security in the Remote Management Console" on page 34 for more information.

MANAGING TAPE LIBRARY AND AUTOLOADER CONFIGURATIONS

If you have your RDX QuikStation configured as a virtual tape library or as a tape or disk autoloader, you can do the following tasks from the Logical Device interface:

- View logical properties (see page 76)
- View active iSCSI connections (page 77)
- Set iSCSI security for each target (page 34)
- Convert the logical device type (page 48)
- Logically move media to another slot (page 78)
- Set the Unique Inquiry String (page 80)
- Set the autoloader option to continuously rotate cartridges (only applicable to disk and tape autoloaders)

Note: From the System Settings menu, you can set an option to allow auto-insert (import/export functionality) of media cartridges. See page 57 for more information.

VIEWING LOGICAL PROPERTIES FOR TAPE LIBRARIES/AUTOLOADERS

The following properties are displayed for virtual tape libraries and autoloaders.

Table 5-4 *Logical properties for virtual tape libraries and autoloaders*

Property Name	Description
For the library/autoloader and its tape drive(s)	
Element address	The element address associated with the virtual location of the library/autoloader and drives.
Vendor	The vendor name for the virtual library/autoloader and drives. For example, the vendor name for a StorageLoader tape library is “Tandberg Data,” and the vendor name for the tape drive is “HP.”
Product	The product name for the virtual library/autoloader and drives. For example, the StorageLoader tape library product name is “StorageLoader”. For the LTO-3 virtual tape drives, the product name is “Ultrium 3-SCSI.”
Revision	The firmware revision level for the logical device.
Serial number	The serial number for the logical device.
iSCSI name	The iSCSI name that identifies the library/autoloader device and its drive targets. The iSCSI name is used to connect the initiators (host computers) to the targets.

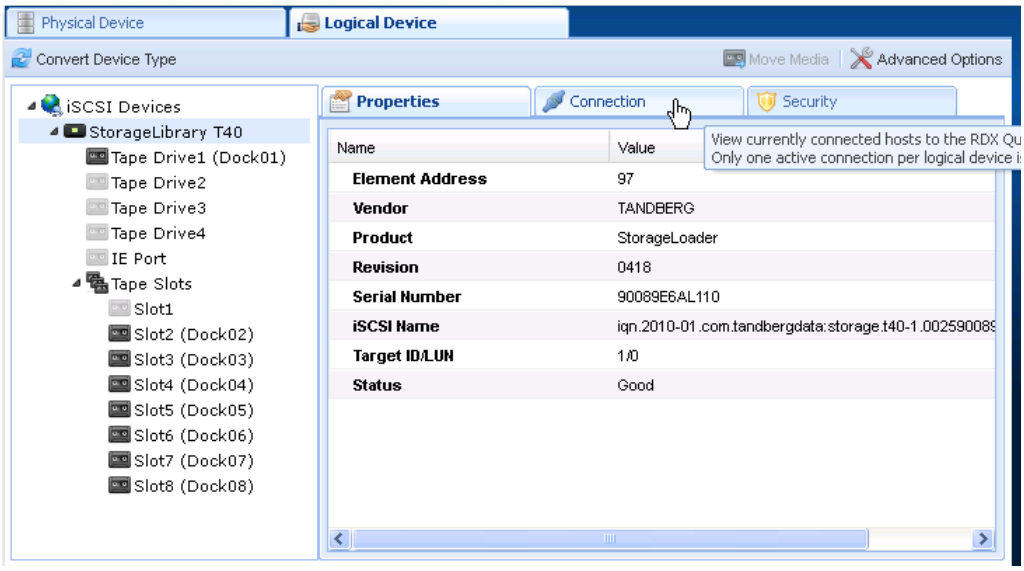
Table 5-4 *Logical properties for virtual tape libraries and autoloaders*

Property Name	Description
Target ID/LUN	The iSCSI target/logical unit number that identifies the library/autoloader and drives.
Status	Displays the operating status for the device. The status displays either “good”, “offline”, or an error state.
For I/E port and tape slots	
Element Address	The element address associated with the virtual location of the tape library/autoloader slots. The element address correlates to the RDX dock number.
Media label (visible if the dock has an RDX cartridge inserted)	The default media label is derived from the last six digits of the RDX cartridge serial number and “L3”, which refers to an LTO-3 tape cartridge.
Media state	The media state displays either “loaded” or “unloaded” depending on how the drive is set in your backup application.
Media usage (visible if the dock has an RDX cartridge inserted)	**Note:** Media usage for RDX drives is unavailable. This property is only reported for tape library, tape autoloader, and disk autoloader configurations. Displays the percentage of capacity that has been used for the RDX cartridge (or virtual tape cartridge).

VIEWING ACTIVE ISCSI CONNECTIONS FOR TAPE LIBRARIES/AUTOLOADERS

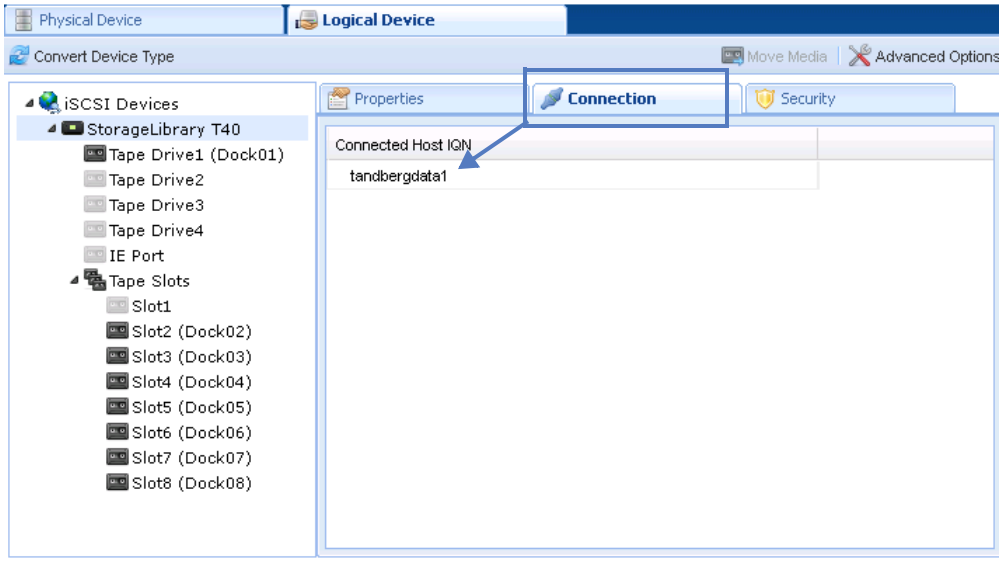
1. From the Logical Device interface, select the library/autoloader or drive target from the tree view in the left pane.

   Note: The Connection tab only displays when you have selected an iSCSI device target from the left pane.



2. Click the Connection tab.

   If there is a host connected to the target, the host's initiator node name will be displayed in the Connection dialog window, as shown in the following example.



Note: You can also set iSCSI security from the iSCSI Management dialog window. See "Setting iSCSI Security in the Remote Management Console" on page 34 for more information.

MOVING A MEDIA CARTRIDGE

With RDX QuikStation virtual library and tape autoloader configurations, you can logically move media to an open slot, to the IE port, or to the tape drives.

Note: If you move media to the IE port, the cartridge will be ejected from the dock, and the media will be logically removed from the library.

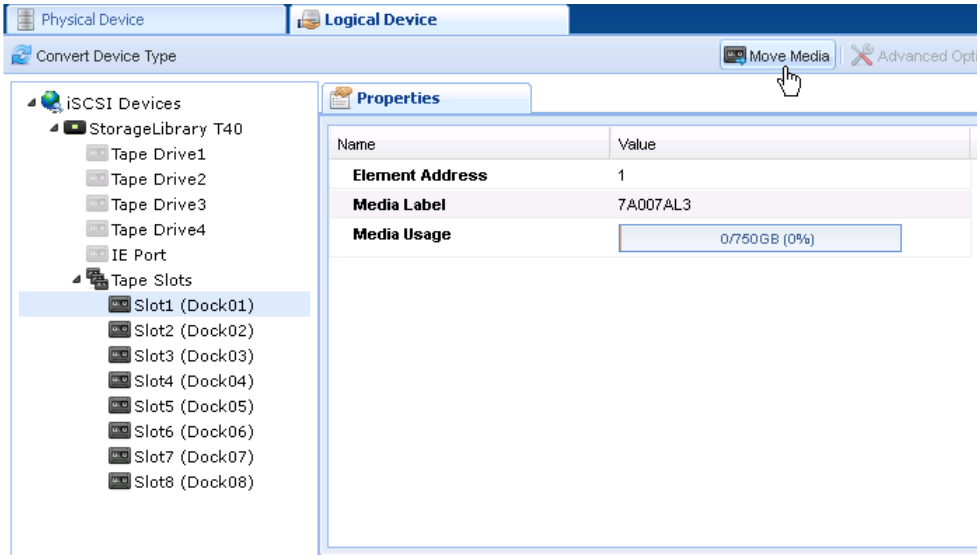
In most cases, you should use your backup software application to logically move media within the virtual library or autoloader. This functionality is built into the RDX QuikStation mainly for testing and diagnostic purposes.

! Important Make sure that you do not have any backup jobs in progress before you logically move a cartridge.

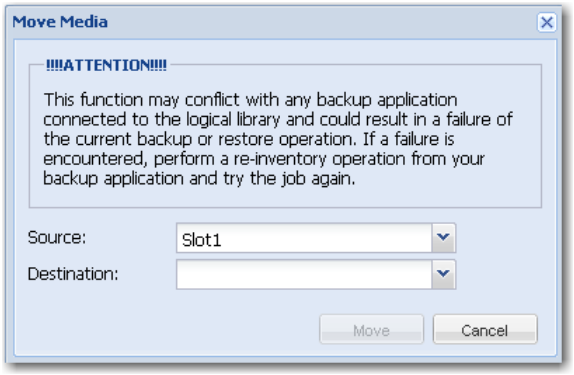
To logically move media:

1. From the Logical Device interface, select the tape slot, tape drive, or IE Port from the tree view in the left pane.

2. Select Move Media.



The Move Media dialog window opens.



3. Select the Source slot and the Destination slot from the pull-down menus. The Source pull-down menu only displays the slots that contain an inserted cartridge, and the Destination pull-down menu only displays empty slots.

4. Click Move.

SETTING THE UNIQUE INQUIRY OPTION

The Unique Inquiry option is available from the Advanced Options dialog.

You can set the RDX QuikStation to report the tape library/autoloader's unique inquiry string, or an RDX QuikStation inquiry string

Table 5-5 *Inquiry String settings*

Inquiry String setting	Behavior
Original device inquiry string (Default)	The virtual tape library reports the device's original inquiry string. This is the inquiry string that a physical version of the tape library reports. For example, the device inquiry string for a Tandberg Data StorageLibrary T24 is *Magnum 224* (derived from the library's former name).
RDX QuikStation inquiry string	The virtual tape library reports "RDX QuikStation" as the device inquiry string. This option is mainly used for diagnostic purposes.

SETTING THE AUTOLOADER OPTION

Note: The autoloader option does not apply to tape library emulation modes. It is only available for disk autoloader or tape autoloader configurations.

The following table describes RDX QuikStation behavior when this option is turned off and when it's turned on.

In cases where you do not want the cartridge to physically eject from the dock, you can set the option to have cartridges continuously rotate through the slots. This option eliminates the need to re-insert the cartridges into the RDX docks.

Table 5-6 *Autoloader option settings*

Continuously rotate cartridges in the slots	Behavior
Off (Default)	Physically ejects the cartridge from the RDX dock when the virtual drive completes a backup job. Once the cartridge is ejected, the virtual autoloader loads media from the next subsequent slot into the drive. It will load cartridges from the slots sequentially and will stop when it reaches the last slot, even if new cartridges have been inserted.
On (checkbox is selected)	Does not physically eject the cartridge from the RDX dock when the virtual drive completes a backup job. Instead, the cartridges continuously rotate sequentially through the slots.

NOTES

6

PHYSICAL DEVICE MANAGEMENT

This chapter describes the Remote Management Console's Physical Device interface.

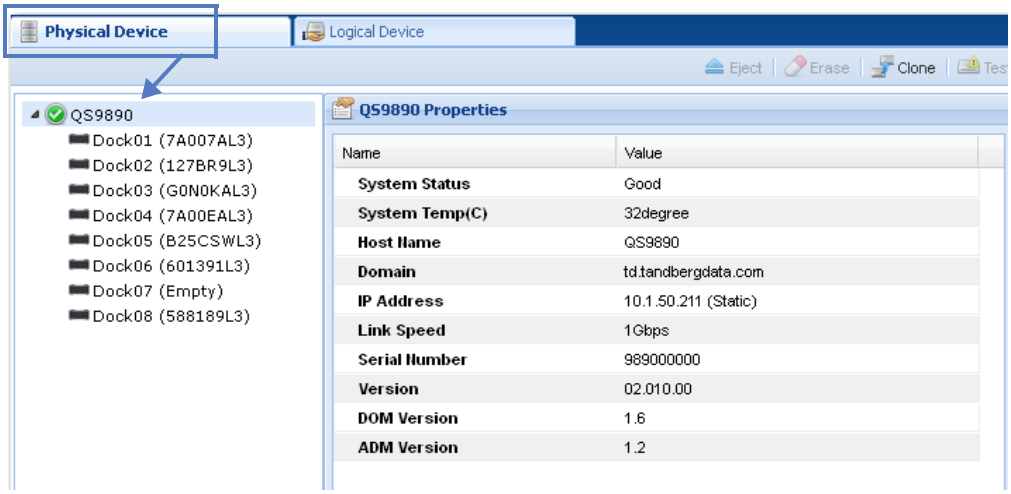
The physical device view is useful for determining the physical location of your RDX cartridges, since logical tape library views can differ. You can also use the physical device view to force-eject RDX cartridges, erase cartridges, and clone data from one RDX cartridge to another.

The chapter includes the following sections:

- Viewing physical device properties . . . . . page 84
- Ejecting RDX cartridges . . . . . page 86
- Erasing RDX cartridges . . . . . page 86
- Cloning data . . . . . page 87

Note: For information on performing a dock diagnostic test, see Chapter 7 on page 95.

VIEWING PHYSICAL DEVICE PROPERTIES



The following physical device properties are displayed when you select the RDX QuikStation's host name in the left pane of the Physical Device interface.

Table 6-1 *RDX QuikStation physical device properties*

Property Name	Description
System status	The operating system status for the RDX QuikStation. The status can either display "good", "offline", or an error state.
System temp (Celsius)	The system temperature for the RDX QuikStation. For information on the RDX QuikStation's operating temperature range, see page 106.
Host name	The name that identifies the RDX QuikStation. The default host name is "QS" plus the last four digits of the RDX QuikStation serial number. You can change the host name from the Network Configuration dialog window. See page 50 for more information.
Domain	The search domain name for the network where the RDX QuikStation resides. This property field is populated from the Network Configuration dialog window. If a search domain is not configured, this field will be blank. See page 50 for more information.
Link speed	The network connection link speed.
Serial number	The RDX QuikStation product serial number.
Version	The firmware version that is currently running on the RDX QuikStation.

Table 6-1 *RDX QuikStation physical device properties (continued)*

Property Name	Description
DOM version	The Disk On Module (DOM) version that is currently in use.
ADM version	The Admiral board (ADM) firmware version that is currently in use. The Admiral board enables communication to the center-front LED panel, dock LCD panels, fans, and system sensors.

The following RDX dock properties are displayed when you select an RDX dock in the left pane of the Physical Device interface.

Table 6-2 *RDX dock properties*

Property Name	Description
Dock status	Displays the operating status for the RDX dock. The status displays either "good", "offline", or an error state. For information on running a dock diagnostic test, see page 95.
Dock LCD text	The cartridge label text that is displayed on the LCD dock panel. This field is populated only if an RDX cartridge is inserted in the dock.
Dock FW rev	The RDX dock firmware version.
With a cartridge inserted in the dock:	
Cartridge status	Displays the operating status for the RDX cartridge. The status displays either "good" or an error state.
Cartridge serial number	The product serial number for the RDX cartridge.
Cartridge label	By default, the text is derived from the RDX cartridge serial number.
Cartridge capacity	The RDX cartridge's total capacity (used and unused).
Cartridge temp (Celsius)	The current temperature of the inserted RDX cartridge.
Write-protected	Displays information on whether the RDX cartridge is write-protected or not.

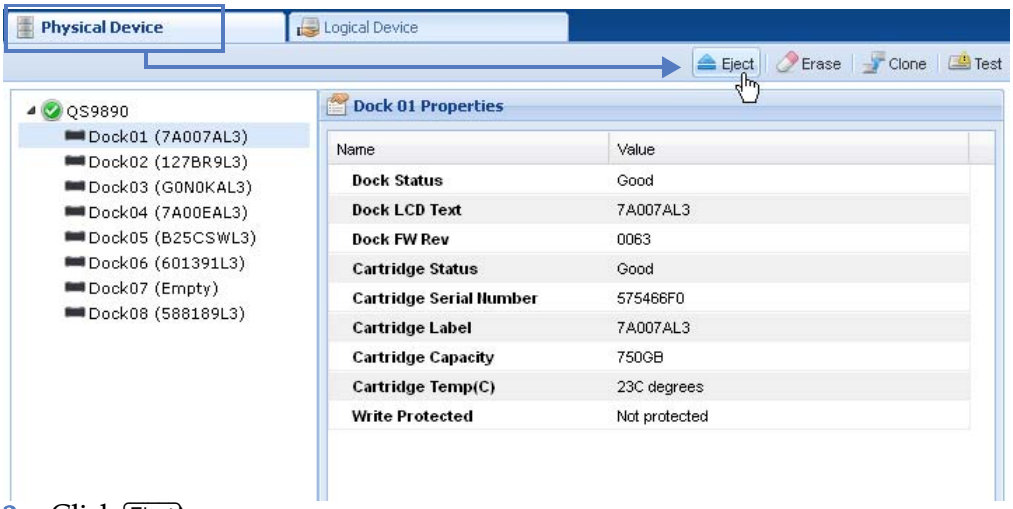
EJECTING RDX CARTRIDGES

You can eject an RDX cartridge from the Remote Management Console. However, with removable disk configurations, you cannot eject a cartridge that is connected to a host computer unless you first enable the Unsafe Eject option (see page 76).

Important Make sure that you do not have any backup jobs in progress before you eject an RDX cartridge from the Remote Management Console.

To eject an RDX cartridge:

1. From the Physical Device interface, select the dock where the cartridge is located.



2. Click Eject.

   The RDX QuikStation ejects the cartridge. The dock displays “Empty” in the tree view.

ERASING RDX CARTRIDGES

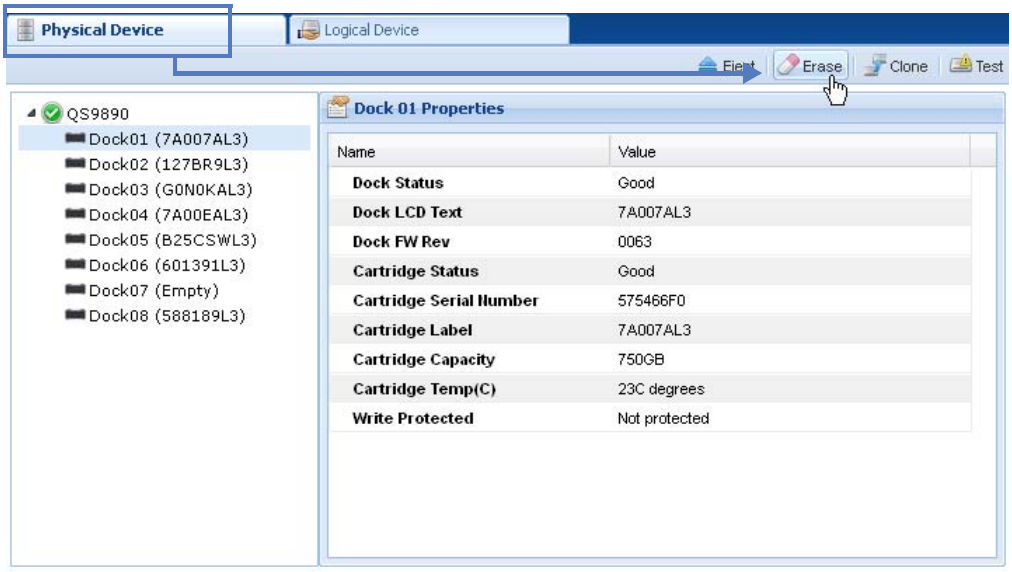
You can erase data and reformat an RDX cartridge as a single NTFS partition from the Remote Management Console.

If you configure your RDX QuikStation as a virtual tape library, the RDX cartridges are automatically formatted to use with the library. This format partitions 8 MB as an NTFS file system. The rest of the cartridge’s capacity is formatted to emulate a tape cartridge.

If you configure your RDX QuikStation as eight removable disks, the RDX cartridges should be formatted as a single NTFS file partition. You can reformat a cartridge from the Remote Management Console. If the disk is connected to a host computer, you can also reformat the cartridge from the host.

To erase an RDX cartridge:

1. From the Physical Device interface, select the dock where the cartridge is located.



2. Click Erase.

3. Click Yes to confirm.

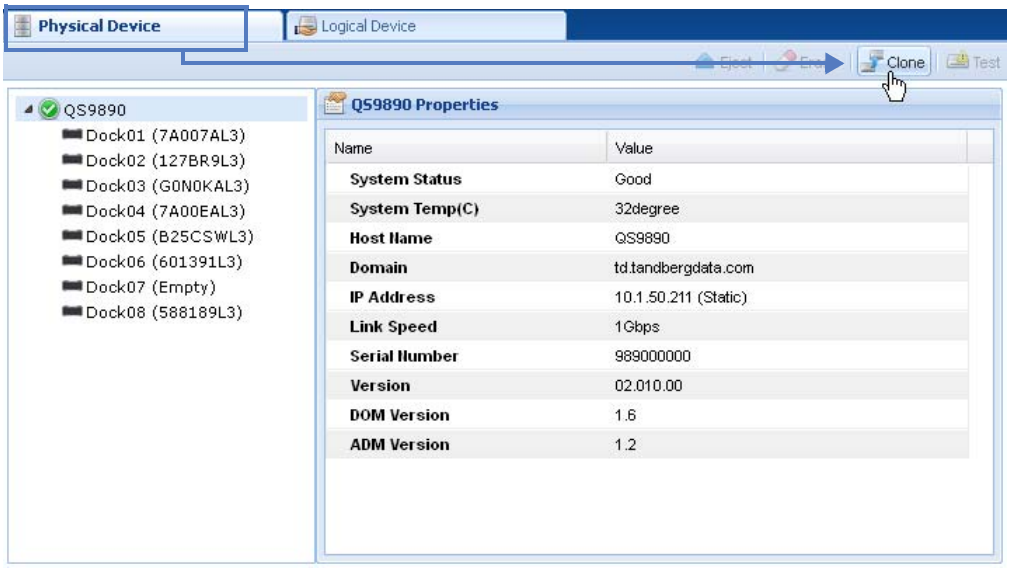
CLONING DATA

You can copy data from one RDX cartridge to another by using the cloning feature in the Remote Management Console.

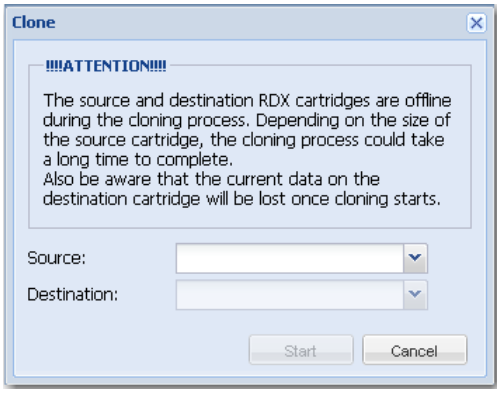
Note: The cloning function copies the source cartridge to a destination cartridge, sector by sector, so that the destination cartridge will be an exact image of the source cartridge. Therefore, cloning will be rejected if the destination cartridge is smaller than the source cartridge.

To clone data:

1. Insert both the source RDX cartridge and the destination RDX cartridge into an available dock on the RDX QuikStation.
2. From the Physical Device interface, click Clone.



The Clone dialog window opens.

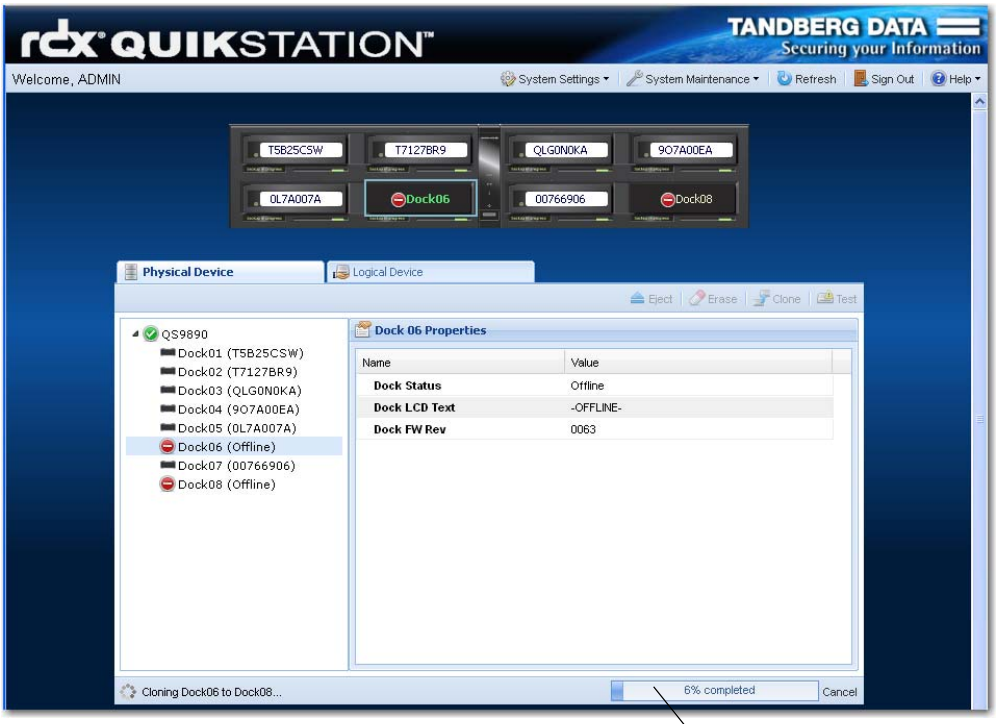


3. Select the Source RDX cartridge from the pulldown menu.
4. Select the Destination RDX cartridge from the pulldown menu.

Note: The source and destination cartridges will be offline during the cloning process.

5. Click Start.

   The RDX QuikStation begins the cloning process. You can monitor the progress of the cloning job in the bottom-right corner of the Physical Device interface.



cloning job status bar

NOTES

7

System Maintenance

This chapter describes the RDX QuikStation system maintenance tasks that a user with administrator privileges can perform.

The chapter includes the following sections:

- System maintenance overview . . . . . page 92
- Performing an LCD diagnostic test. . . . . page 93
- Performing a dock diagnostic test. . . . . page 95
- Generating system logs. . . . . page 96
- Restarting and shutting down the RDX QuikStation . . . . . page 97
- Exporting system configuration files . . . . . page 98
- Importing system configuration files . . . . . page 98
- Manually updating firmware . . . . . page 99
- Using a USB flash drive for system tasks. . . . . page 101

SYSTEM MAINTENANCE OVERVIEW

As a user with administrator permissions, the following functions are available for you to perform from the Management Console's System Maintenance menu.

Table 7-1 *RDX QuikStation System Maintenance Menu*

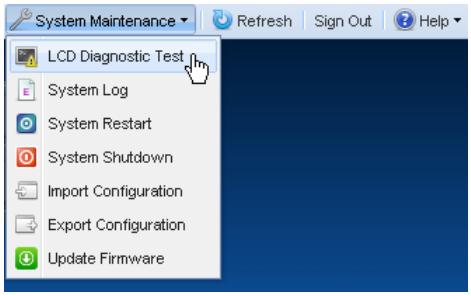
System Maintenance Menu Name	Description
LCD Diagnostic Test	Allows you to verify that all eight LCD docks and the LED center panel are working properly. You must be physically in front of the RDX QuikStation to monitor the test sequence. See page 93 for more information.
System Log	Allows you to download system log files to a host computer. These files are encrypted and are meant for Tandberg Data technical support only.
System Restart	Allows you to restart the RDX QuikStation. **Important:** Before you restart the system for any reason, make sure there are no active host connections to the iSCSI targets.
System Shutdown	Allows you to perform a soft shutdown of the RDX QuikStation. A soft shutdown is the preferred way of turning off the power to the unit. If you need to do a hard shutdown, press and hold the power button on the back of the RDX QuikStation for 10 seconds. **Important:** Before you shutdown the system for any reason, make sure there are no active host connections to the iSCSI targets.
Import Configuration	Allows you to import RDX QuikStation system configuration files, such as network information, email notification setting, time zone, user names and passwords, logical device type settings, and iSCSI security settings to another RDX QuikStation.
Export Configuration	Allows you to export RDX QuikStation system configuration settings, such as network information, email notification, time zone, user names and passwords, logical device type settings, and iSCSI security settings. Tandberg Data recommends that you export your system configuration files as a backup in case you ever need to replace your current unit.
Update Firmware	Allows you to automatically check for updates and manually upload a firmware file. **Important:** Before you update firmware, make sure there are no active host connections to the iSCSI targets.

PERFORMING AN LCD DIAGNOSTIC TEST

An LCD diagnostic test verifies that the LCD/LED pixels and backlighting are working correctly. You must be standing in front of the RDX QuikStation to verify the test sequence.

To run an LCD diagnostic test:

1. From the Remote Management Console main menu, select System Maintenance > LCD Diagnostic Test.



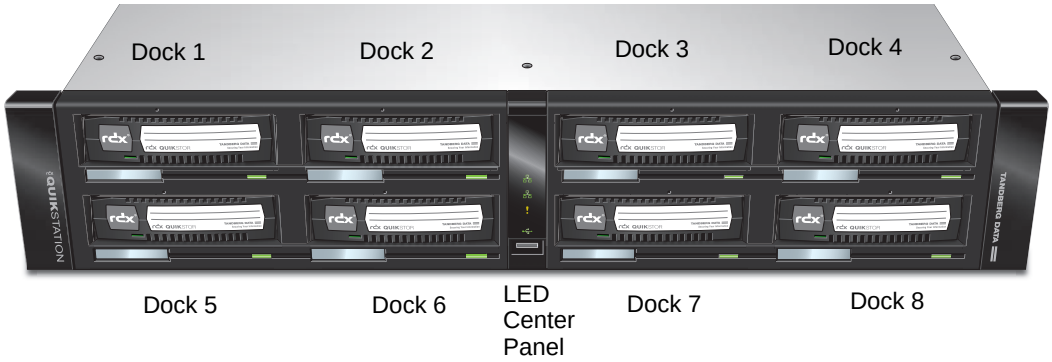
2. Click Yes.

   The test will begin in five seconds.

3. Stand in front of the RDX QuikStation to verify that the following test sequence (see page 94) occurs.

LCD DIAGNOSTIC TEST SEQUENCE

The test begins with dock 1 then moves sequentially through each dock, ending with dock 8.



The LCD diagnostic test sequence is as follows:

1. At dock 1, the LCD panel pixels all turn off, then all turn on.
2. The dock's power LED/eject button alternately flashes amber and green. If a cartridge is loaded in the dock, the cartridge's activity LED also alternately flashes amber and green.
3. The dock's LCD panel backlight flashes, then turns off.
4. The test moves to the next dock, completing the same sequence described in steps 1 through 3 for each subsequent dock.
5. When the LCD test for each dock has completed, the error indicator and the USB indicator flash on the LED center panel.
6. All eight dock LCD panels flash "DONE" when the test is complete.

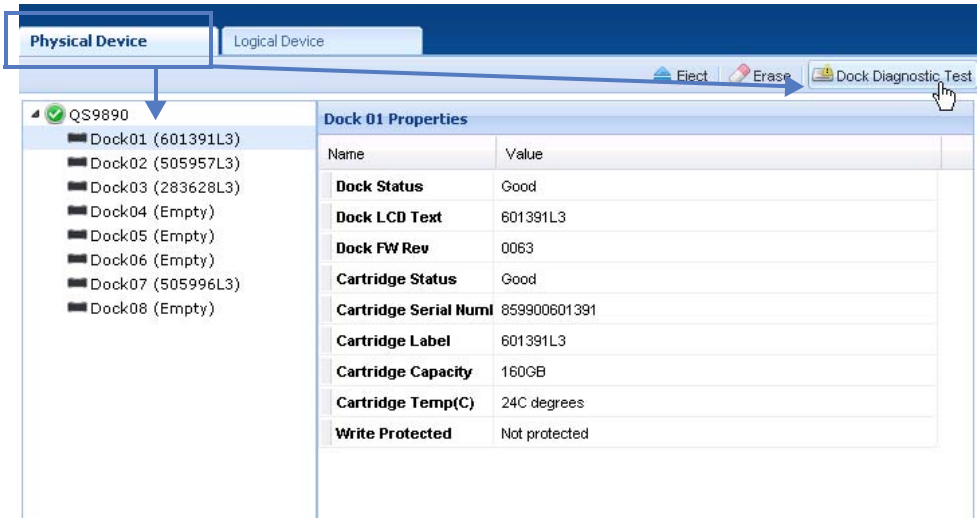
PERFORMING A DOCK DIAGNOSTIC TEST

You do not have to be physically in front of the RDX QuikStation to conduct a dock diagnostic test. However, you do need an RDX cartridge in the dock to verify that the dock is working properly.

To perform a dock diagnostic test:

1. Select the Physical Device tab in the Remote Management Console.

2. Select the dock that you want to test, then click Dock Diagnostic Test in the upper-right corner of the Physical Device interface.



The test begins. If the dock is working properly, the following dialog window is displayed.

3. Click OK.

Note: If the test encounters a problem, the system displays an error message. For more information, see Appendix A for a list of error codes, or contact Tandberg Data technical support.

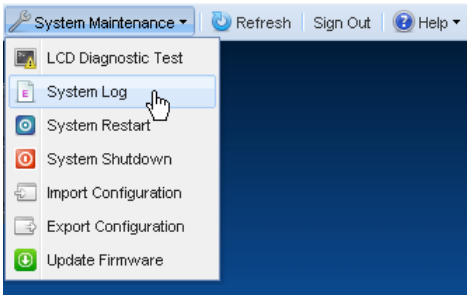
GENERATING SYSTEM LOGS

There are three levels of system logs that you can generate from the RDX QuikStation: Normal, Detail, and Extend (see page 54).

System logs are encrypted and only intended for use by Tandberg Data technical support. You do not need to generate a system log unless you are instructed to do so by Tandberg Data technical support.

To generate a system log:

1. From the Remote Management Console main menu, select System Maintenance > System log.



2. Save the file to your local host.

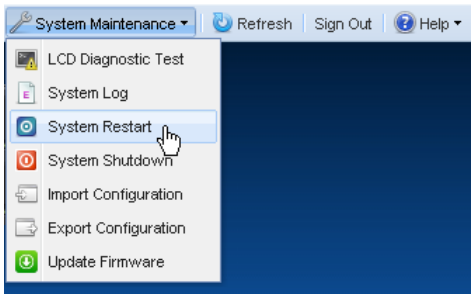
Note: You can also generate a log dump by inserting a USB flash drive (fomatted with a VFAT file system) into the RDX QuikStation. The RDX QuikStation automatically generates a log dump when a USB flash drive is detected. Make sure that the flash drive does not include any RDX QuikStation system configuration files (see page 101). Otherwise, the RDX QuikStation will read those files instead of generating a system log.

RESTARTING AND SHUTTING DOWN THE RDX QUIKSTATION

Important Before you restart or shutdown the system for any reason, make sure there are no active hosts that are currently communicating with the iSCSI targets.

To restart the RDX QuikStation:

1. From the Remote Management Console main menu, select System Maintenance > System Restart.

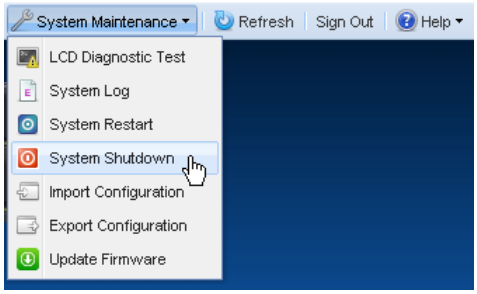


2. Click Yes to confirm.

   The system reboots. This process takes three minutes. When the reboot is complete, the Remote Management Console interface is active again. You do not have to sign in again to access the Console.

To shutdown the RDX QuikStation:

1. From the Remote Management Console main menu, select System Maintenance > System Shutdown.



2. Click Yes to confirm.

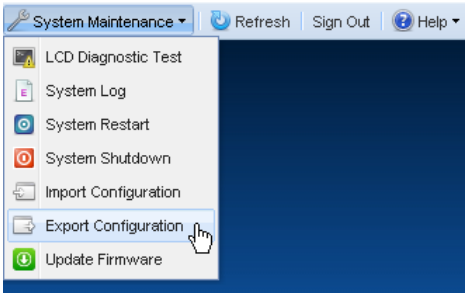
Note: If you cannot access the Remote Management Console and need to shutdown, press and hold the power button on the back of the RDX QuikStation for 10 seconds.

EXPORTING SYSTEM CONFIGURATION FILES

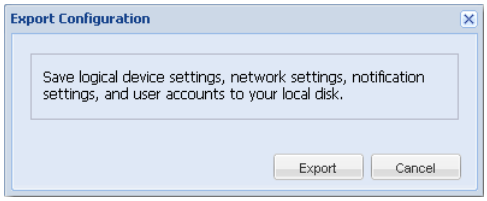
As a best practice, Tandberg Data recommends that you export your system configuration files as a backup in case you ever need to replace your current unit. The system exports all configuration settings, including network information, email notification settings, time zone setting, user names and passwords, logical device type settings, and iSCSI security settings.

To export RDX QuikStation system configuration files:

1. From the Remote Management Console main menu, select System Maintenance > Export Configuration.



The Export Configuration dialog window opens.



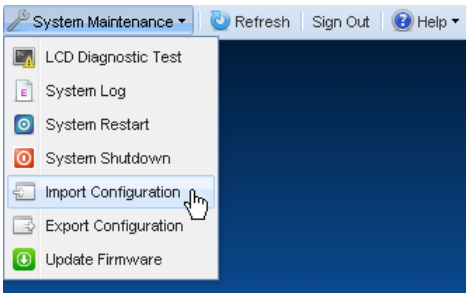
2. Click Export to generate the configuration file.

3. Click Ok to download the file to your local host.

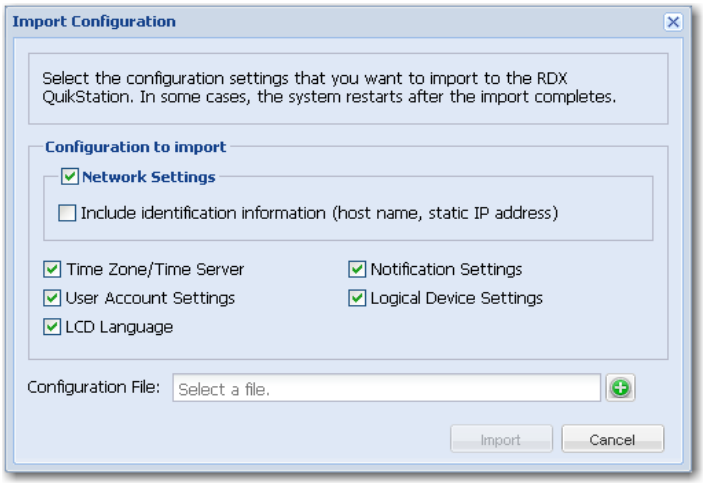
IMPORTING RDX QUIKSTATION SYSTEM CONFIGURATION FILES

To import system configuration files:

1. From the Remote Management Console main menu, select System Maintenance > Import Configuration.



The Import Configuration dialog window opens.



2. Select the network settings you want to import. By default, all configuration settings are selected.

3. Click the ⊕ icon to select the RDX QuikStation configuration file.

4. Click Import.

   The system reboots. This process takes three minutes. When the reboot is complete, the Remote Management Console interface is active again. You do not have to sign in again to access the Console.

MANUALLY UPDATING FIRMWARE

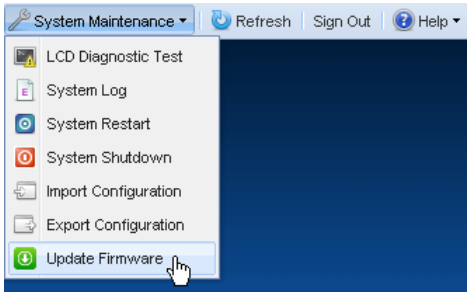
When you sign in as an administrator user, the RDX QuikStation detects the firmware version (see page 54). If your system is not running the most current version, the RDX QuikStation prompts you to update the firmware. If you choose to update, the system automatically installs to the new firmware level.

Follow these instructions if you need to manually update the firmware file to your system.

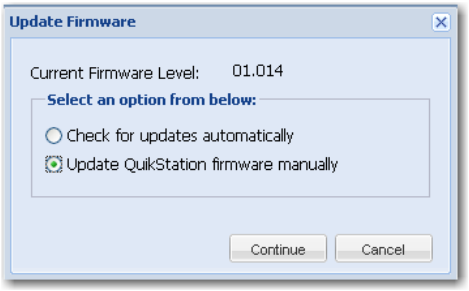
! **Important** Before you update firmware, make sure there are no active hosts that are currently communicating with the iSCSI targets.

To manually update the RDX QuikStation firmware:

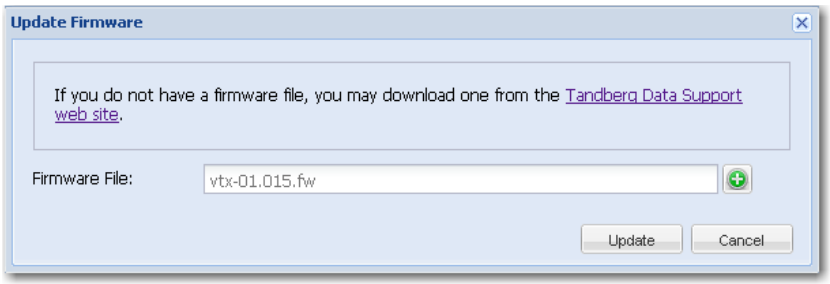
1. From the Remote Management Console main menu, select System Maintenance > Update Firmware.



The Update Firmware dialog window opens.



2. Select the "Update QuikStation firmware manually" radio button.



3. Click the "Tandberg Data Support Web Site" link to access the most current firmware file.

   After you download the file from the web site, make sure you extract the zipped file before uploading it to the RDX QuikStation. The firmware file uses the following format: **vtx-<*version*>.fw**.

4. Click the + icon to select the RDX QuikStation configuration file.

5. Click Update.

6. Click Yes to proceed.

   The system reboots. This process takes three minutes. When the reboot is complete, the Remote Management Console interface is active again. You do not have to sign in again to access the Console.

Note: You can also update firmware by saving the firmware file to a USB flash drive (fomatted with a VFAT file system). Rename the firmware file "**vtx.fw**" and insert the flash drive into the RDX QuikStation. The RDX QuikStation automatically detects the firmware and updates the system.

USING A USB FLASH DRIVE FOR SYSTEM TASKS

The RDX QuikStation ships with a USB flash drive that you can use to perform many system tasks. If the RDX QuikStation flash drive is unavailable, you can use any USB flash drive that is formatted with a VFAT file system.

! Important The Tandberg Data-supplied USB flash drive includes the file **network.conf**. If you are using the flash drive for a system task other than network configuration, make sure that this file name is changed to another name, for example **network.conf.used**, before you insert the flash drive into the RDX QuikStation.

Renaming the file prevents any inadvertent network configuration changes to your RDX QuikStation.

The following table describes the system tasks you can complete with a USB flash drive.

Table 7-2 *Uses for RDX QuikStation USB Flash Drive*

System Task	Description
Network configuration	You can configure network settings for the RDX QuikStation via the **network.conf** file, which is included on your RDX QuikStation USB flash drive. When the flash drive is inserted into the RDX QuikStation, the system automatically detects and imports the network settings from the file. For more information, see "Configuring Network Information" on page 18. **Important:** The file must be named **network.conf** in order for the RDX QuikStation to import network settings.
Firmware updates	You can update firmware by saving the firmware file to a USB flash drive and inserting the flash drive into the RDX QuikStation. The RDX QuikStation automatically detects the firmware and updates the system. For more information, see "Manually Updating Firmware" on page 99. **Important:** Rename the firmware file "**vtx.fw**" so that the RDX QuikStation can detect and load the file.
Password recovery	You can reset the built-in administrator password via USB by creating a **password.reset** file. For more information, see "Recovering the Built-In Administrator Password" on page 64.
System log dump	You can generate a log dump by inserting a USB flash drive into the RDX QuikStation. The RDX QuikStation automatically generates a system log when a USB flash drive is detected. For more information, see "Generating System Logs" on page 96. **Important: If the following files – network.conf, password.reset, or vtx.fw – are loaded onto the flash drive, the RDX QuikStation will not generate a log dump, but will instead read and load the file.**

NOTES

A

TROUBLESHOOTING

This appendix provides information on error codes and some basic troubleshooting questions and solutions.

For more detailed troubleshooting help, visit the Support section of the Tandberg Data web site (www.tandbergdata.com), or contact Tandberg technical support.

RDX QUIKSTATION DOCK ERROR CODES

The following error codes will display if there is a fault condition associated with the RDX dock.

Table A-1 *Error codes*

Error code	Meaning	Potential Solution
01	POST failed. This is an internal system error associated with the RDX dock.	Reboot the RDX QuikStation (see page 92).
02	Link down. A communication link error between the RDX cartridge and RDX dock.	Eject and re-insert the RDX cartridge. If the error persists, reboot the system (see page 92)
03	Internal system error associated with the RDX dock.	Reboot the RDX QuikStation (see page 92).
04	Eject failed. The RDX cartridge failed to eject from the dock.	Retry ejecting the cartridge. If the error persists, reboot the system (see page 92). If the error still persists, eject the cartridge via the emergency-eject keyhole (see page 4).
05	Firmware image bad. The RDX dock firmware should be reinstalled.	Contact Tandberg Data technical support.
06	Communication error between the RDX QuikStation and the RDX dock.	Reboot the RDX QuikStation (see page 92).

Table A-1 *Error codes (continued)*

Error code	Meaning	Potential Solution
07	Offline. The RDX dock is offline and unavailable for use.	Reboot the system (see page 92). **Important:** The RDX QuikStation docks go offline when performing cloning or diagnostic operations. Make sure your system is not performing diagnostics before you reboot the RDX QuikStation.
08	Unknown error. The RDX dock has an unknown internal system error.	Reboot the system (see page 92). If the error persists, contact Tandberg Data technical support.

BASIC TROUBLESHOOTING INFORMATION

The following table describes some basic troubleshooting information. If you have a problem that is not addressed in the table below, contact Tandberg Data technical support.

Table A-2 *Basic troubleshooting information*

Problem	Potential Solution(s)
Can't connect to an iSCSI target.	▸ Check to see if another host is already connected to the target (see page 75 and page 77). The RDX QuikStation allows only one active host connection per iSCSI target (see page 24). ▸ Check if any iSCSI security is enabled for the target (see page 34). ▸ If the target uses CHAP authentication, make sure the CHAP secret specified in the Remote Management Console (see page 35) matches the CHAP secret specified in your iSCSI initiator software. ▸ Refresh the discovered targets in your iSCSI initiator software.
The Remote Management Console has a "session timeout" error message.	The Remote Management Console times out after 30 minutes of inactivity. Click OK to return to the Console's sign-in page. Type your user name and password to re-connect to the Remote Management Console (see page 20).
RDX dock reports as "empty" in the Remote Management Console when an RDX cartridge is loaded in the dock.	The RDX cartridge may not be seated properly in the dock. Push the cartridge into the dock until you hear it click in place.

B

SPECIFICATIONS

This appendix provides the following information about the RDX QuikStation:

- Physical specifications . . . . . page 106
- Power specifications . . . . . page 106
- Environmental specifications . . . . . page 106
- Safety and regulatory agency compliance . . . . . page 107

PHYSICAL SPECIFICATIONS

Part Number	8900-RDX
Dimensions (D x W x H)	508mm x 438mmx 89mm/ 20″ x 17.25″ x 3.5″
Weight	10.16 kilograms/22.4 pounds
Form Factor	2U Rackmount
Capacity	Cartridge dependent (online): 8 x 1TB RDX cartridges Unlimited offline capacity
Data Transfer Rate	Up to 200 MB[a]/second across multiple docks (uncompressed)
Network Connectivity	2 x 1 Gigabit Ethernet, bonded for port failover
USB 2.0 Ports	1 on front panel, 2 on rear panel
Removable Media Drive	8 x RDX bays with individual LCD display
RDX Media Compatibility (Capacity)	Backward and forward: 160GB, 320GB, 500GB, 640GB, 750GB, and 1TB

[a] The data transfer rate is up to 200 MB/second when port configuration is configured for adaptive load balancing (see page 51).

POWER SPECIFICATIONS

AC Input Voltage	100-240 VAC
Rated Input Current	2,0 -1,0 A
Rated Input Frequency	50/60 Hz
Power Consumption	<90 Watts, typical

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	10° to 40° C (50° to 104° F)
Non-operating Temperature	-20° to 60° C (-4° to 140° F)
Operating Humidity	20% to 80%

SAFETY AND REGULATORY AGENCY COMPLIANCE

Tandberg Data products are designed, tested, and classified for their intended electromagnetic environment. The RDX QuikStation is a Class A device and complies with the safety and regulatory agency standards listed below when installed in accordance with this manual.

Note: For regulatory purposes, the RDX QuikStation is filed as regulatory model number RMN-A-05-10.

UNDERWRITERS LABORATORY

The RDX QuikStation is listed by Underwriters Laboratories, Inc. Representative samples of this product have been evaluated by UL and meet the applicable U.S. and Canadian safety standards.

UL60950-1:2007, Second Edition

CSA C22.2 No. 60950-1 Second Edition, 2007

GS

The GS Mark for the RDX QuikStation demonstrates that it has met the requirements of EN60950-1/A1:2010.

EUROPEAN COMMUNITY

This Information Technology Equipment has been tested and found to comply with the following European directives:

(1) EMC Directive 2004/108/EEC, according to:

EN55022: 2006 +A1:2007.CSPR22:2008

Warning: This is a class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

EN61000-3-2:2006

EN61000-3-3:1995 +A1:2001 +A1:2005

EN55024:1998 +A1: 2001 +A2:2003

EN61000-6-2:2005

(2) Low Voltage Directive 2006/95/EEC

UNITED STATES: FCC DECLARATION OF CONFORMITY

We declare under our sole responsibility that:

Product Name: RDX QuikStation, regulatory model RMN-A-05-10

To which this declaration relates, is in conformity with the following standard(s) or other normative documents:

ANSI C63.4-1992 Methods of Measurement

Federal Communications Commission 47 CFR Part 15, Subpart B, Class AB:2008

This equipment has been tested and found to comply with the limits for a Class AB 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 this 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 will be required to correct the interference at his own expense.

CANADIAN VERIFICATION

This Class AB digital apparatus complies with ICES-003:2004.

Cet appareil numérique de la classe AB est conforme à la norme NMB-003 du Canada.

JAPAN

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI－ A

Translation: This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

Australia and New Zealand

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to the Australian/New Zealand standard AS/NZS 3548:1995: "Information Technological Equipment" set out by the Australian Communications Agency.

Waste of Electronic and Electrical Equipment (WEEE)

This device is in compliance with 2002\96\EC Waste of Electronic and Electrical Equipment (WEEE).

China RoHS

This product is marked in accordance with China's Ministry of Information Industry (MII) "Management Methods for Controlling Pollution Cause by Electronic Information Products" Order #39. The Environmental Protection Use Period (EPUP) is determined to be 10 years. Packaging materials are also marked according to Chinese national standard GB 18455 - 2001 "Packaging and Recycling Symbols".

NOTES

C

SAFETY GUIDELINES

This appendix provides safety guidelines for the RDX QuikStation:

- General safety precautions. . . . . page 112
- Electrical safety precautions . . . . . .page 113
- ESD precautions. . . . . .page 113
- Operating precautions . . . . . page 114

GENERAL SAFETY PRECAUTIONS

- Keep the area around the RDX QuikStation clean and free of clutter.
- Remove any jewelry or metal objects from your body, which are excellent metal conductors that can create short circuits and harm you if they come in contact with printed circuit boards or areas where power is present.
- Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer (35° C or 95° F).
- Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- Reliable Earthing - Reliable earthing of rackmounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).
- Never place objects on top of rackmounted equipment.

Electrical Safety Precautions

- Be aware of the locations of the on/off switch on the chassis as well as the room's emergency power-off switch, disconnection switch or electrical outlet(s). The on/off switch does not disconnect power to the chassis. If an electrical accident occurs, quickly remove power to the system by removing the plug(s) from the outlet(s). Some models may have multiple power cords which connect to more than one outlet.
- The power cord must include a grounded plug and must be plugged into a grounded electrical outlet.
- Use only one hand when working with powered-on electrical equipment. This is to avoid making a complete circuit, which will cause electrical shock. Use extreme caution when using metal tools, which can easily damage electrical components or circuit boards they come into contact with.

ESD Precautions

Electrostatic discharge (ESD) is generated by two objects with different electrical charges coming into contact with each other. An electrical discharge is created to neutralize this difference, which can damage electronic components and printed circuit boards. The following measures are generally sufficient to neutralize this difference before contact is made to protect your equipment from ESD.

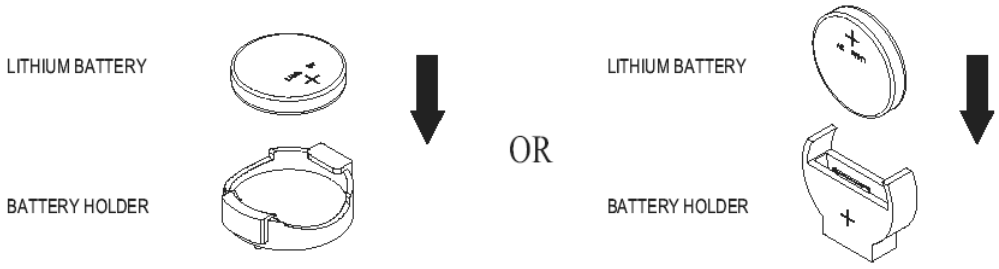
- Use a grounded wrist strap designed to prevent static discharge.
- Discharge static electricity from your body by touching a known grounded surface, such as a computer's metal chassis.
- Keep all components and printed circuit boards (PCBs) in their antistatic bags until ready for use.
- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the serverboard.

OPERATING PRECAUTIONS

Caution

Risk of Explosion when battery is replaced by an incorrect type.

When installing the serverboard (CMOS) battery, there is a danger of explosion if the onboard battery is installed upside down, which will reverse its polarities (see figure). The battery must be replaced only with the same or an equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.



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