rdx®

Product Manual

For RDX QuikStation® 4 and QuikStation 8 Systems
Running Firmware Version 2.8

► **2**

Preface

Audience and Purpose

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

The information in this guide applies to both the RDX QuikStation 4 and the RDX QuikStation 8. When there is a significant operational difference, then either the RDX QuikStation 4 or RDX QuikStation 8 is specified for each difference.

Organization

The following chapters are included in this guide:

Overview

- Chapter 1, "Product Overview," provides an overview of the features and components of the RDX QuikStation.

Installation and Setup

- Chapter 2, "Initial Setup and Configuration," describes information on how to rack-mount, connect, and initially configure the RDX QuikStation.
- Chapter 3, "iSCSI Configuration," describes how to connect host computers to RDX QuikStation iSCSI targets, including how to set up iSCSI security.

Using the RDX QuikStation Web Interface

- Chapter 4, "System Configuration," describes RDX QuikStation system configuration tasks, such as network configuration and user account management.
- Chapter 5, "Logical Device Management," provides information about the logical device interface.
- Chapter 6, "Manage Tape Library Configurations," shows how to do additional configuration tasks from the **Logical Device** interface.
- Chapter 7, "Physical Device Management," provides information about the physical device interface, including ejecting RDX media and reformatting and cloning data.
- Chapter 8, "System Maintenance," describes RDX QuikStation system maintenance tasks, such as importing and exporting configuration files and updating firmware.

Supplemental Information

- Appendix A, "Troubleshooting," provides basic troubleshooting information.
- Appendix B, "Specifications," provides product specifications.

- Appendix C, "Safety Guidelines," describes important safety precautions to observe when using the RDX QuikStation.

Product Documentation & Software Updates

Product documentation and additional information on RDX removable disk solutions are available online at our Overland-Tandberg Knowledge Base website:

https://overlandtandberg.atlassian.net/wiki/spaces/KNOW/overview

To download drivers and software updates, see the Drivers and Downloads page.

Conventions

This document exercises several alerts and typographical conventions.

Alerts

Convention	Description & Usage
NOTE: Text	A **Note** indicates neutral or positive information that emphasizes or supplements important points of the main text. A note supplies information that may apply only in special cases, for example, memory limitations or details that apply to specific program versions.
IMPORTANT	An **Important** note is a type of note that provides information essential to the completion of a task or that can impact the product and its function.
CAUTION	A **Caution** contains information that the user needs to know to avoid damaging or permanently deleting data or causing physical damage to the hardware or system.
WARNING	A **Warning** contains information concerning personal safety. Failure to follow directions in the warning could result in bodily harm or death.
WARNUNG	Eine *Warnung* enthält Informationen zur persönlichen Sicherheit. Das Nichtbeachten der Anweisungen in der Warnung kann zu Verletzungen oder zum Tod führen.
ADVERTISSEMENT	Un Canadien avertissement comme celui-ci contient des informations relatives à la sécurité personnelle. Ignorer les instructions dans l'avertissement peut entraîner des lésions corporelles ou la mort.

Typographical Conventions

Convention	Description & Usage
Command	Words in this special boldface font indicate specific command options.
Menu Flow Indicator (**>**)	Words with a greater than sign between them indicate the flow of actions to accomplish a task. For example, **Setup > Passwords > User** indicates that you should press the **Setup** button, then the **Password** button, and finally the **User** button to accomplish a task.
Courier Italic	Used to exemplify a variable for which you must substitute a value.
`Courier Bold`	Represents commands or text in a command-line interface (CLI).

Information contained in this guide has been reviewed for accuracy, but not for product warranty because of the various environments, operating systems, or settings involved. Information and specifications may change without notice.

Technical Support

You can get additional technical support information at:

https://www.overlandtandberg.com/service-support/contact-service-support/

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Product Overview

The RDX QuikStation 4 and RDX QuikStation 8 are multi-drive, network-attached, removable-cartridge arrays built on RDX technology. They combine data protection benefits of removable media and the reliable performance of disks. They also provide enterprise-grade performance (99.999% reliability and high speed) yet are very easy to use.

QuikStation 4 Rack Mount

QuikStation 4 Desktop

QuikStation 8 Rack Mount

Topics in Product Overview:

- RDX QuikStation Features
- RDX QuikStation 4 Components
- RDX QuikStation 8 Components

RDX QuikStation Features

Both the RDX QuikStation 4 and RDX QuikStation 8 can be used with different RDX cartridge sizes and configurations resulting in the storage capacity being adapted to match online storage needs with unlimited offline capacity. The RDX QuikStation 4 can offer as much as 20 TB of online capacity when used with four 5 TB RDX cartridges, while the RDX QuikStation 8 can offer as much as 40 TB of online capacity when used with either 5 TB RDX cartridges.

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

Configuration Flexibility

You can configure the RDX QuikStation as individual RDX docks with removable iSCSI targets or as RDX logical volumes that combine the capacity of the RDX cartridges available.

RDX QuikStation 4

You can configure the RDX QuikStation 4 as four RDX docks with four removable iSCSI targets or a single RDX logical volume combining the capacity of up to four RDX cartridges. The logical volume can be protected against the loss of a cartridge.

You can also configure the RDX QuikStation 4 as a disk autoloader which can automatically load the next cartridge when one is ejected.

RDX QuikStation 8

You can configure the RDX QuikStation 8 as eight RDX docks with eight removable iSCSI targets or two RDX logical volumes each combining the capacity of up to four RDX cartridges. The logical volumes can be protected against the loss of a cartridge.

It is also possible to create a protected logical volume of all eight cartridges which can continue to operate with the loss of two cartridges.

The RDX QuikStation 8 can be configured as a virtual tape library. You can also configure the RDX QuikStation 8 as a disk autoloader which can automatically load the next cartridge when one is ejected.

High Performance and Capacity

When configured as a virtual Tandberg Data StorageLibrary T24, the RDX QuikStation can simultaneously read and write from all RDX docks.

RDX QuikStation 4

- When configured as four removable cartridges, the RDX QuikStation 4 can simultaneously read and write media from all four RDX docks.
- With all four docks using 5 TB RDX cartridge, the RDX QuikStation 4 has an online capacity of 20 TB and unlimited offline storage capacity.

RDX QuikStation 8

- When configured as eight removable cartridges, the RDX QuikStation 8 can simultaneously read and write media from all eight RDX docks.
- With all eight docks using 5 TB RDX cartridge, the RDX QuikStation 8 has an online capacity of 40 TB and unlimited offline storage capacity.

- Faster speeds can be obtained on an RDX QuikStation 8 dual 10 GbE model if both 10 Gb Ethernet ports are connected to 10 GigE hosts.

Compatible with Major Backup Software

The RDX QuikStation is compatible with major backup software applications. For a complete list of backup software applications that are compatible with the RDX QuikStation, visit our website (https://www.overlandtandberg.com) or contact your backup software vendor.

Integrated Web-based Management

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

Multi-Gigabit Ethernet

The RDX QuikStation appliances provide failover protection and high availability network connectivity.

- The RDX QuikStation 4, depending on the model, has either two or four 1GbE ports.
- The RDX QuikStation 8, depending on the model, has either four 1GbE ports, four 1GbE posts along with one 10GbE port, or two 10 GbE ports.

You can configure the Ethernet ports for either bonded or split setup, depending on your needs (see Chapter 4, "Port Configuration Options," on page 43).

Compact Design

The RDX QuikStation 4 uses only one unit (1U) of rack space and is also available as a desktop unit, while the RDX QuikStation 8 only uses two units (2U) of rack space, minimizing the impact on data center space requirements.

RDX QuikStation 4 Components

This section describes the RDX QuikStation 4's front panel and back panel components.

Front Components
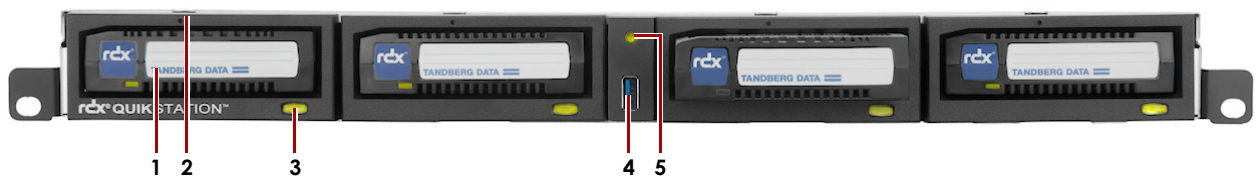
#	Description
1	RDX dock (four each)
2	Emergency-eject keyhole (centered above each dock)
	NOTE: To use the emergency-eject function, use the Eject Key (included with the RDX QuikStation) and insert it into the keyhole. You can also straighten a paper clip and insert it into the keyhole. The paper clip needs to be sturdy enough to engage the eject mechanism.

#	Description
3	RDX cartridge eject button with Status LED (four each).
4	USB 2.0 port used for configuration and diagnostics
5	QuikStation power button with LED (green when power is ON)

RDX Cartridge Eject Button Status LED

The following table describes status LED color codes.

LED	Status
Off (no color)	The dock does not have power.
Green	Power is ON and the dock is working properly.
Blinking Green	The RDX dock is ejecting the cartridge.
Amber	A fault condition exists with the dock.
Blinking Amber	Cartridge ejection is prevented.

Rear Components

QuikStation 4 Version 1 With Two 1GbE Ports
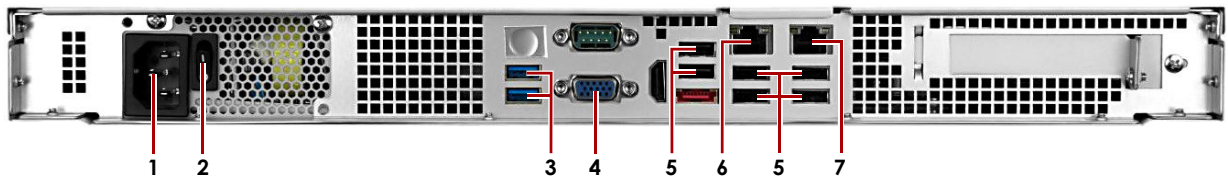
#	Description
1	AC power plug
2	Power switch
3	USB 3.0 ports (2)
4	VGA Connector
5	USB 2.0 ports (6)
6	1Gb Ethernet port (eth0)
7	1Gb Ethernet port (eth1)

QuikStation 4 Version 2 With Four 1GbE Ports
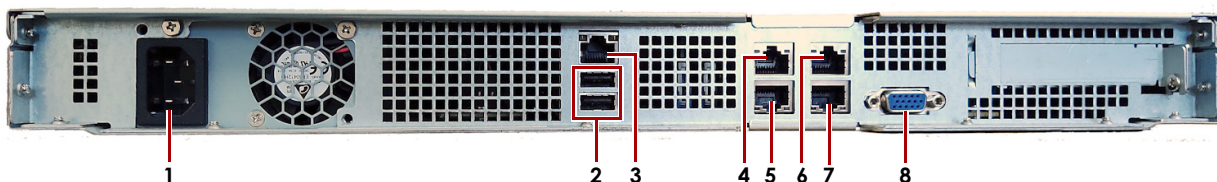
#	Description
1	AC power plug
2	USB 2.0 Ports ("USB0" top & "USB1" bottom)
3	Ethernet port - IPMI remote management
4	1GbE Port (eth2)
5	1GbE Port (eth0)
6	1GbE Port (eth3)
7	1GbE Port (eth1)
8	VGA connector

RDX QuikStation 8 Components

This section describes front and back panel components of the RDX QuikStation 8.

Front Components
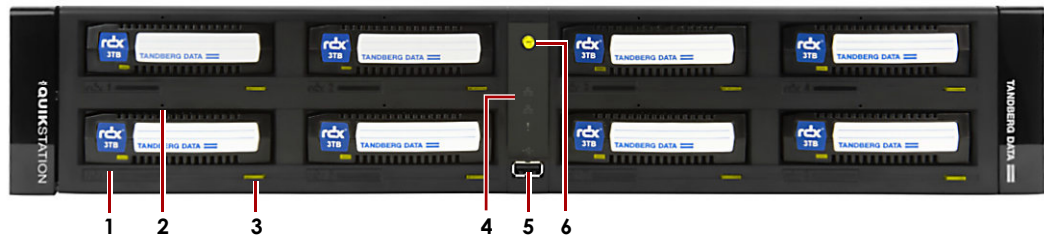
#	Description
1	RDX dock (eight each)
2	Emergency-eject keyhole (above each dock)
	NOTE: To use the emergency-eject function, use the Eject Key (included with the RDX QuikStation) and insert it into the keyhole. You can also straighten a paper clip and insert it into the keyhole. The paper clip needs to be sturdy enough to engage the eject mechanism.
3	RDX cartridge eject button with status LED (eight each)
4	QuikStation status icons
5	USB 2.0 port used for configuration and diagnostics
6	QuikStation power button with LED (green when power is ON)

RDX Cartridge Eject Button Status LED

The following table describes status LED color codes.

LED	Status
Off (no color)	The dock does not have power.
Green	Power is ON and the dock is working properly.
Blinking Green	The RDX dock is ejecting the cartridge.

LED	Status
Amber	A fault condition exists with the dock.
Blinking Amber	Cartridge ejection is prevented.

Front Panel Status LEDs

The following table describes the QuikStation status LED icons located in the center panel.

LED Usage	Appearance	Description
10Gb connected		Software polls 10Gb interface for activity. • If there is activity, the LED is refreshed. • If there is no activity, the LED is not refreshed. Hardware will turn on the LED when refreshed. Hardware will turn off the LED if not refreshed.
1Gb connected		Software polls 1Gb interface for activity. • If there is activity, the LED is refreshed. • If there is no activity, the LED is not refreshed. Hardware will turn on the LED when refreshed. Hardware will turn off the LED if not refreshed.
Warning		Turned on when there is an error or warning condition that requires the user to check the GUI.
USB in use		On or blinking when the front panel USB port is in use either reading action files or writing status files. ⚠️ CAUTION: To prevent the loss of data, do not remove the USB drive when it is active. Only remove the USB drive when the LED is off, indicating all activity is complete.

Rear Components

> NOTE: Ports vary depending on the model of QuikStation 8. Use the following images to determine your model.

8930-RDX & 8940-RDX Models
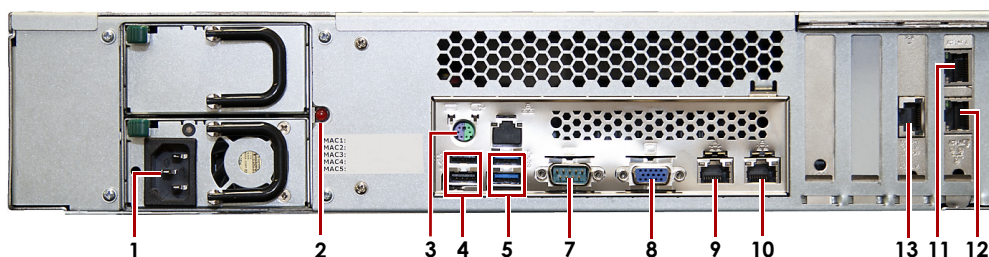
8943-RDX Model
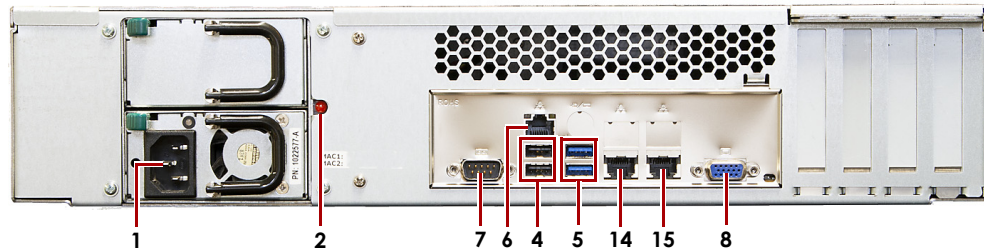
#	Description
1	AC Power plug (2nd power supply optional)
2	Power Supply Reset
3	Mouse/keyboard connector (green/purple)
4	USB 2.0 ports (2)
5	USB 3.0 ports (2)
6	Ethernet port - IPMI remote management
7	Serial connector
8	VGA connector
	Models 8930-RDX and 8940-RDX Only
9	1GbE built-in port (eth0)
10	1GbE built-in port (eth1)
11	1GbE on card port (eth2)
12	1GbE on card port (eth3)
13	10GbE on card port (eth4) (model **8940-RDX** only)
	Model 8943-RDX Only
14	10GbE built-in port (eth0)
15	10GbE built-in port (eth1)

2

Initial Setup and Configuration

This section covers the initial setup and configuration of an RDX QuikStation.

> NOTE: For information regarding the installation and wiring of your RDX QuikStation hardware, either as a desktop or rack-mount appliance, refer to either the RDX QuikStation *4 Quick Start Guide* or the RDX QuikStation *8 Quick Start Guide*.

Topics in Setup and Configuration:

- Obtain the IP Address
- Assign a Static IP Address
- Revert to DHCP IP Address Usage
- Connect to RDX QuikStation
- Configuring the RDX QuikStation

Obtain the IP Address

Once the appliance is installed on the desktop or in a rack and the cables are attached, an IP address is needed to continue the configuration.

> NOTE: The default network configuration is set for dynamic IP addresses (DHCP), but static IP addresses are also supported.

To determine the unit's IP address:

1. Attach a **monitor** to the VGA connector.

2. **Power on** the unit by pressing the power button.

   After the unit initializes, the IP addresses are displayed on the monitor.

The IP address can also be obtained using an empty USB stick with a single MBR partition formatted with a version of FAT32:

1. Create an empty `network.info` file on the USB stick.

2. **Insert the stick** in the USB port on the front of the unit and wait at least 30 seconds for the network configuration to download to the `network.info` file.

3. Move the USB stick to a **host computer** and review the updated `network.info` file to determine the available IP addresses.

Assign a Static IP Address

If DHCP support is not enabled, set a static IP address for the appliance:

> ⚠️ **CAUTION:** Follow these steps exactly to prevent the possibility of corruption other configuration files on your QuikStation.

1. Create a **network.conf** file on an empty USB stick that consists of only these entries:

   BOND0_IP4_CONFIG=static
   BOND0_IP4_ADDR=*nnn.nnn.nnn.nnn*
   BOND0_IP4_GW=*nnn.nnn.nnn.nnn*
   BOND0_IP4_PREFIX=*nn*

   Use your IP address, gateway, and prefix where indicated.

   For example:

   BOND0_IP4_CONFIG=static
   BOND0_IP4_ADDR=192.168.10.111
   BOND0_IP4_GW=192.168.10.1
   BOND0_IP4_PREFIX=24

2. **Insert the stick** in any USB port on the QuikStation and wait at least two minutes for the **network.conf** file to update.

3. Remove the **USB stick** from the USB port.

   The unit will automatically restart with the updated network settings.

   > **NOTE:** If the unit does not reboot automatically, recheck the **network.conf** filename to ensure it is **all lowercase** letters.
   > You may need to use a Linux or MacOS host system to check a filename as Windows OS can sometimes change the filename to uppercase but cannot display it as such.

   Use your browser to access the new static IP address to view the QuikStation interface. For more information on how to configure IP addresses, refer to Chapter 4, "Network Configuration," on page 40.

Revert to DHCP IP Address Usage

To revert back to the default automatically assigned IP address by a DHCP server:

1. Create a **network.conf** file on an empty USB stick that contains only the following entry (for an IPv4 address).

   BOND0_IP4_CONFIG=dhcp

   > **NOTE:** No other parameters should be used. The file content is case sensitive. Start the text in the first column and make sure there is no white space around the equal sign (=).

2. Insert the USB stick in the USB port on the front of the unit and wait at least one minute for the **network.conf** file to update.

3. Remove the USB stick from the front port.

   The unit will automatically restart with the updated DHCP network settings.

> **NOTE:** If the unit does not reboot automatically, recheck the **network.conf** filename to ensure it is **all lowercase** letters.
> You may need to use a Linux or MacOS host system to check a filename as Windows OS can sometimes change the filename to uppercase but cannot display it as such.

Connect to RDX QuikStation

> **NOTE:** Supported operating systems include Microsoft Windows, Linux, and Apple MacOS.

Use a web browser to connect to the RDX QuikStation:

1. Type the RDX QuikStation **IP address** in a web browser.
   See "Obtain the IP Address" on page 18.

2. **Sign in** to the RDX QuikStation.
   Initially, use the default user name/password of `Admin/Admin!` (note the exclamation mark). Passwords are case-sensitive.

Configuring the RDX QuikStation

You need to configure your RDX QuikStation with a few basic settings to prepare it for use.

Logical Device Type

You can configure your QuikStation in two ways:

- As individual RDX docks (four RDX docks for QuikStation 4 or eight RDX docks for QuikStation 8).
- With RDX logical volumes (one set of four RDX docks for QuikStation 4 or two sets of four RDX docks for QuikStation 8).

The unit is shipped in the individual RDX docks configuration.

For more information about best use for each logical device type, see Chapter 5, "Select the Logical Device Type," on page 62.

System Settings

Refer to the table below for the recommended RDX QuikStation system settings. For more information, see Chapter 4, "System Settings Overview," on page 38.

Setting	Purpose	Where to find
Date/Time	Set the date and time to your time zone to receive accurate system and troubleshooting information. To avoid time drift, provide the NTP server address.	Go to **System Settings > Date/Time**. See Chapter 4, "Date and Time Configuration," on page 39 for more information.
Network Information	We recommend 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.	Go to **System Settings > Network**. The RDX QuikStation automatically reboots after you have made your network changes. See Chapter 4, "Network Configuration," on page 40 for more information.
Email Notification	A valid email address is needed for logging, error reporting, and password recovery.	Go to **System Settings > Notification**. See Chapter 4, "Notification Configuration," on page 45 for more information.
User Management	As a best practice, change the built-in administrator account password.	Go to **System Settings > User**. See Chapter 4, "Editing a Password," on page 49 for more information.

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iSCSI Configuration

The data that you want to store, 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."

Topics in iSCSI Configuration:

- iSCSI Configuration Overview
- Connecting to iSCSI Targets Without Authentication
- Set iSCSI Security

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 storage targets on the RDX QuikStation.

To establish an iSCSI connection, you first need to verify that the host computer OS has the iSCSI initiator software installed.

Depending on how you configured the logical device type for the RDX QuikStation (see Chapter 5, "Select the Logical Device Type," on page 62), you will have either one to four iSCSI targets (RDX QuikStation 4) or one to eight iSCSI targets (RDX QuikStation 8) with which to connect.

> NOTE: For more information about viewing iSCSI targets, see Chapter 6, "iSCSI Device General Information," on page 87.

You can configure iSCSI initiators with or without iSCSI security. The RDX QuikStation supports the one-way Challenge Handshake Authentication Protocol (CHAP). The CHAP protocol 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 CHAP authentication, the iSCSI target (storage device) authenticates the initiator (host computer). The secret is set only 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 "Set iSCSI Security" on page 30.

The following describes iSCSI Management rules for the RDX QuikStation iSCSI devices:

- Libraries and autoloaders can have up to 10 initiator users (using CHAP) or host computers (using host authentication).
- Single iSCSI storage targets (RDX docks, tape drives, logical volumes, and protected volumes) can only have one initiator user (using CHAP) or host computer (using host authentication).

- If the **System > Allow multiple host connections** option has been set (see Chapter 4, "Options for RDX QuikStation," on page 53) then up to 10 initiator users (using CHAP) or host computers (using host authentication) can be set for each iSCSI storage target including RDX docks, tape drives, logical volumes, and protected volumes.

⚠️ **CAUTION:** To avoid data corruption, multiple iSCSI initiator sessions should only be enabled when operating in a cluster aware filesystem.

Connecting to iSCSI Targets Without Authentication

This section describes how to connect Windows, Linux, and Mac OS X hosts to RDX QuikStation iSCSI targets without authentication. If you plan on using one-way CHAP authentication, follow the instructions in "Set iSCSI Security" on page 30.

- Connecting iSCSI Targets for Windows
- Connecting iSCSI Targets for Linux
- Connecting iSCSI Targets for Mac OS X

Connecting iSCSI Targets for Windows

The following instructions describe how to connect your network host computers using Windows Server 2012R2.

NOTE: Your iSCSI initiator interface may differ slightly depending on your Windows operating system.

To establish an iSCSI connection:

1. Open the RDX QuikStation interface in a browser.
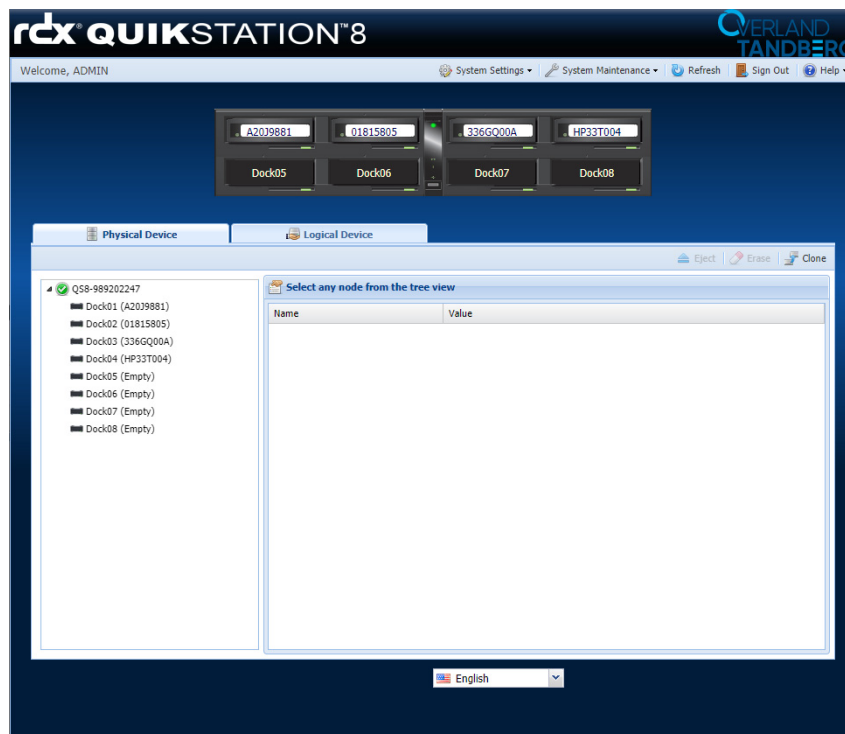
Make a note of the RDX dock to which you want to connect your host computer.

2. Open Microsoft iSCSI Initiator and click the **Discovery** tab.

    Your version of iSCSI initiator may use **Add** depending on your Windows OS.
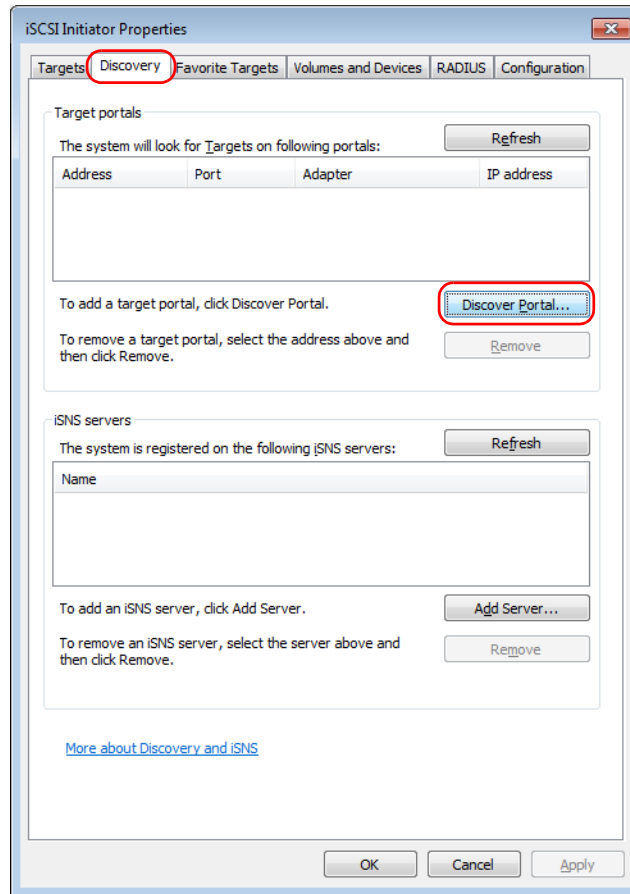
3. Click **Discover Portal**.

4. In the **Discover Target Portal** dialog window that opens, type the **IP address** for the RDX QuikStation, and click **OK**.
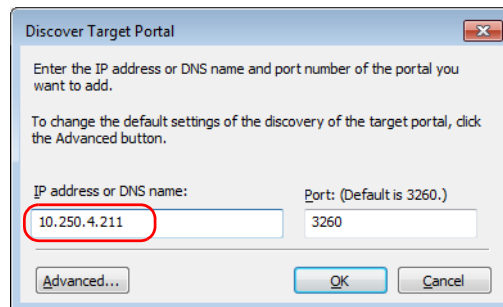
5. Click the **Targets** tab.

Depending on how you configured the logical device type for the actual RDX QuikStation you have, you will see either four or eight iSCSI targets.
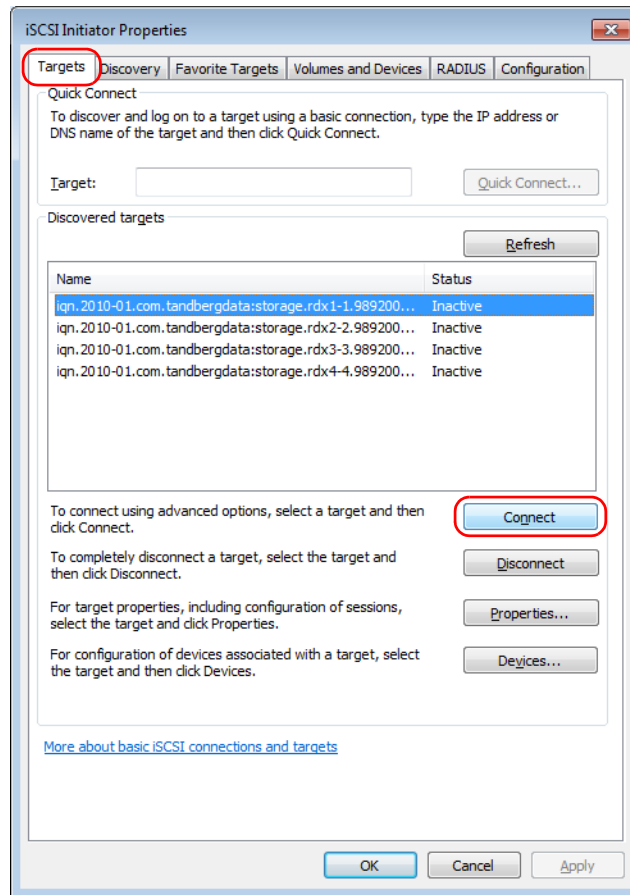
6. For **each iSCSI target**:

a. Select an iSCSI qualified **name** (IQN) from the list and click **Connect**.

NOTE: Depending on your Windows OS, your version of iSCSI initiator button may say **Log On**.

b. In the dialog box that opens, check the **Add this connection to the list of Favorite Targets** box, and click **OK**.

The RDX QuikStation's iSCSI target should now display as **Connected** in the **Discovered targets** list.
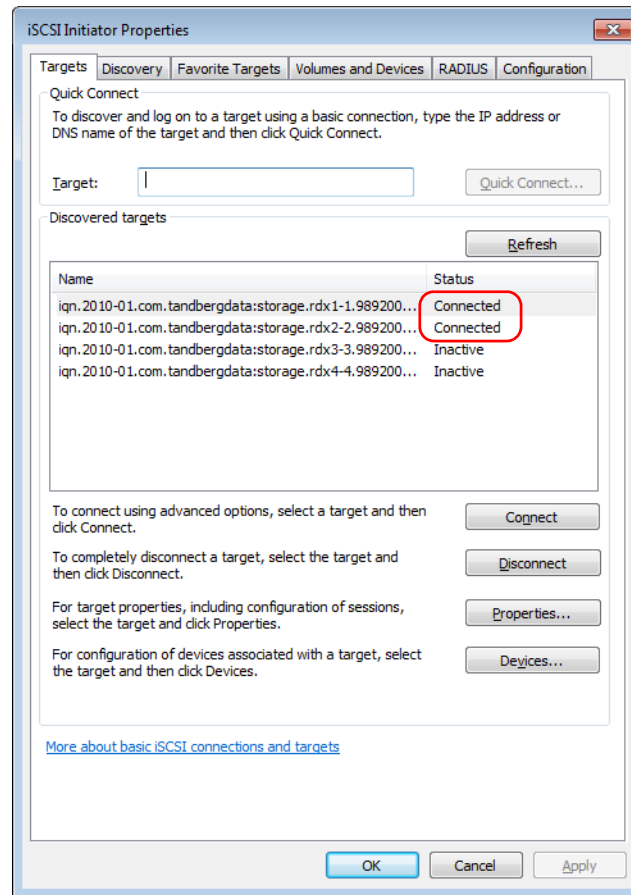
⚠ **CAUTION:** Before you shut down or restart the RDX QuikStation for any reason, it is recommended that you disconnect all iSCSI targets.

Connecting iSCSI Targets for Linux

The following instructions describe how to connect iSCSI targets using a Linux Open-iSCSI Initiator that is available for Redhat Enterprise Linux, CentOS, Fedora Linux, Debian, and Ubuntu operating systems.

NOTE: For more information about using an **Open-iSCSI Initiator** with your specific Linux operating system, refer to your Linux distribution website.

1. Install **Open-iSCSI Initiator**.
   - For a Linux operating system, 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_IP_address>`** with the actual IP address for your RDX QuikStation:

   > **`# iscsiadm -m discovery -t sendtargets -p <`** *RDX_IP_address* **`>`**

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

3. Connect to **iSCSI targets**.

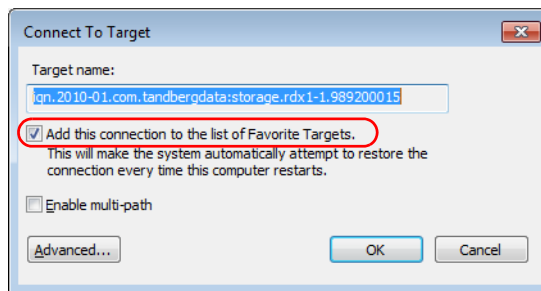   - To connect **all** discovered iSCSI targets, enter the following command:

     > **`# 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 computer) can use the iSCSI disks as a normal disk. It appears under /dev/sdx devices and you can format and mount iSCSI disks like a normal disk.

Other "iscsiadm" Commands

- 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`**

- 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`**

> ⚠️ **CAUTION:** Before you shut down or restart the RDX QuikStation for any reason, it is recommended that you disconnect all iSCSI targets.

Connecting iSCSI Targets for Mac OS X

The following instructions describe how to connect your Mac OS X 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 OS X 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 the Xtend SAN iSCSI Initiator by clicking the **Discover Targets** tab, then clicking **Discover by DNS/IP**.

The following dialog window opens.
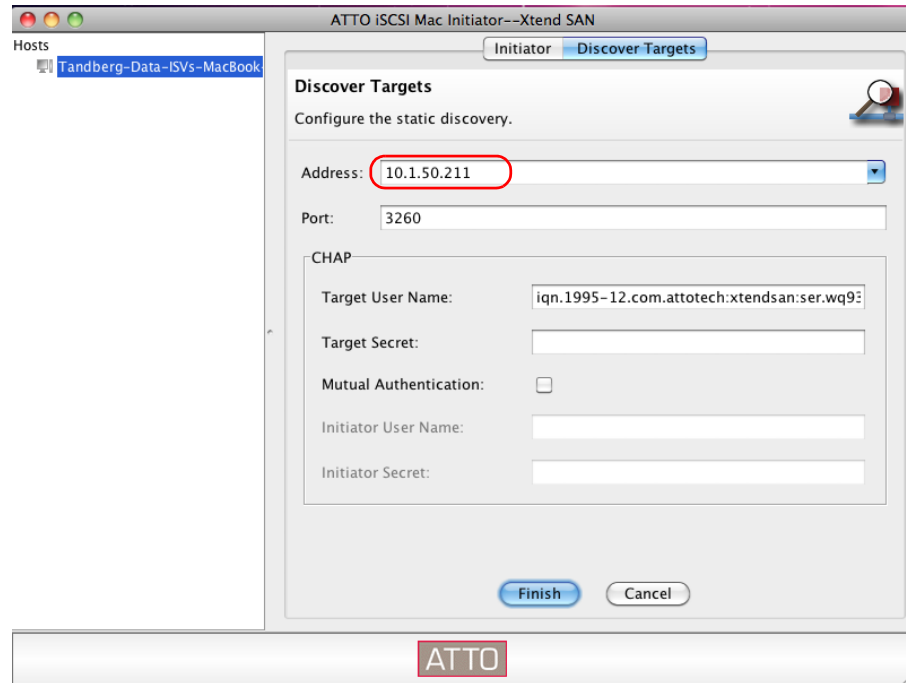
2. In the **Address** field, type the **IP address** for the RDX QuikStation.

    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.

3. Click **Finish**.

    The dialog window displays the discovered iSCSI targets. Depending on how you configured the logical device type for the RDX QuikStation you have, you will see one to eight iSCSI targets.
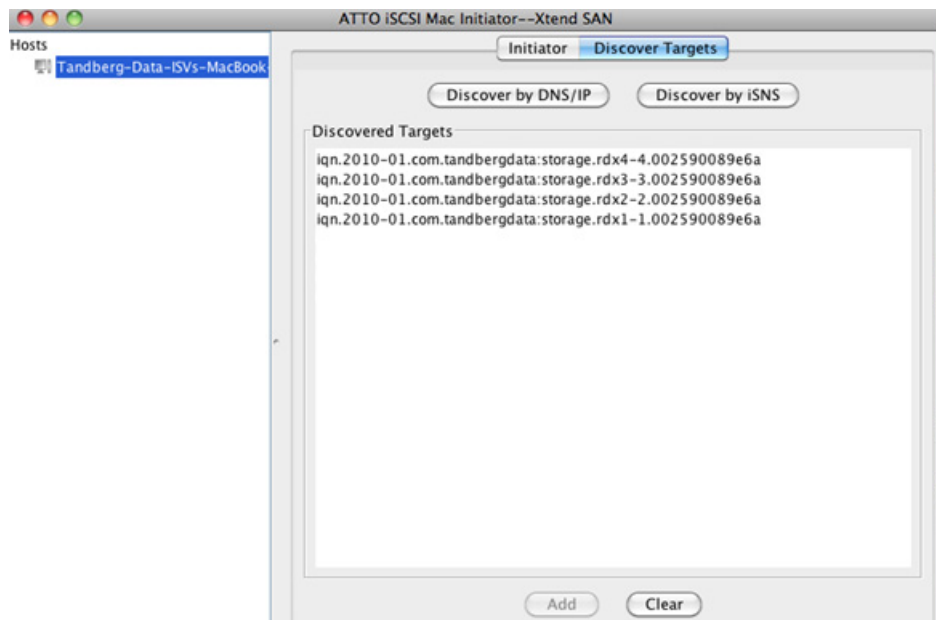
4. Highlight all the **discovered targets** and click **Add**.

   The targets are displayed in the left pane with a red icon, signifying that they are not yet connected.
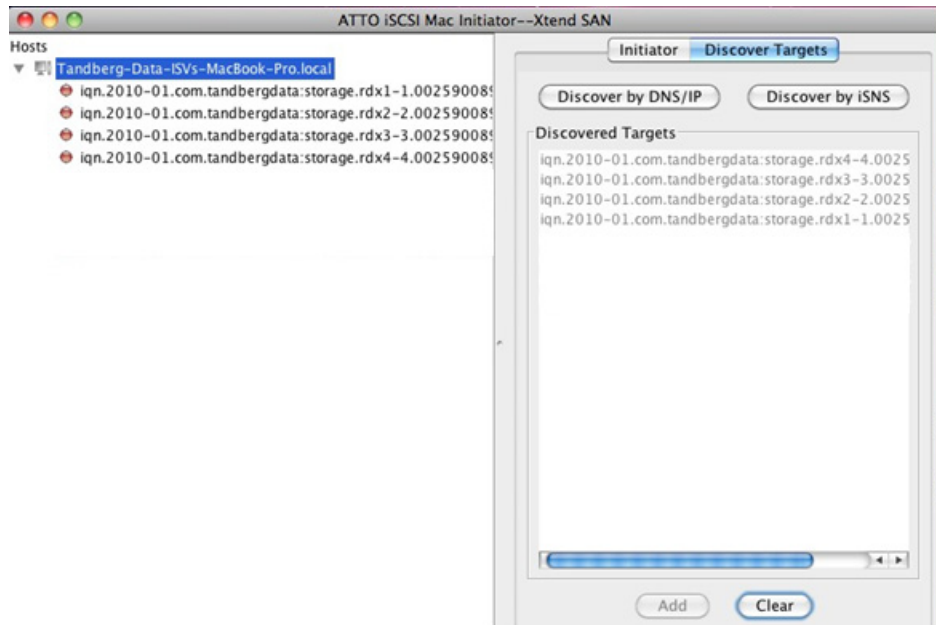
5. For each iSCSI target, complete the following steps to **connect the target**:

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

      The target's port information opens in the center pane.
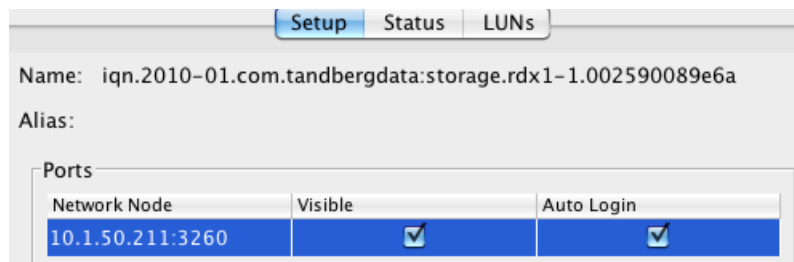
   b. Check both the **Visible** and **Auto Login** boxes.

   c. Click the **Status** tab.

      The target's connection status is displayed.
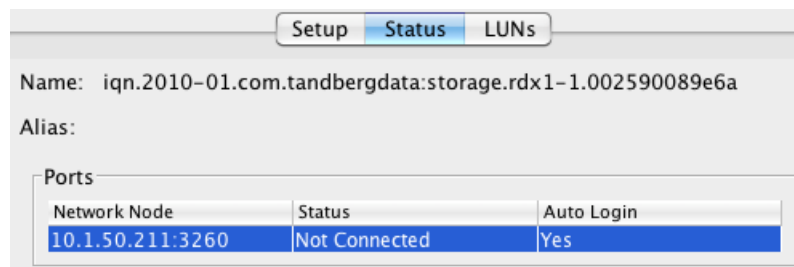
d. Select the **Network Node** listed and click **Login**.

The iSCSI targets are displayed with a green icon when they are connected to the RDX QuikStation.
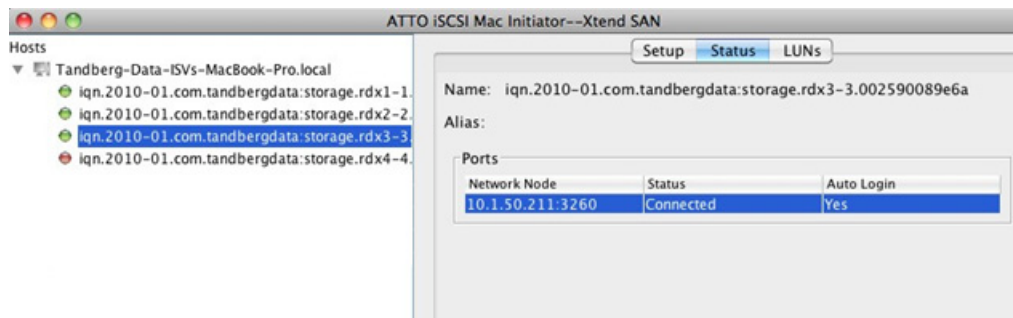
> ⚠️ **CAUTION:** Before you shut down or restart the RDX QuikStation for any reason, it is recommended that you disconnect all iSCSI targets.

Set iSCSI Security

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

- **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 (host computers) per iSCSI target. However, for disk configuration, only one initiator can be actively connected to the target at a time.

- **Host Authentication** – Only the initiators (on host computers) 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 host computers per iSCSI target. However, for all logical device configurations, only one initiator can be actively connected to the target.

> ➡️ **IMPORTANT:** As a best practice, set iSCSI security of the RDX QuikStation first. Then, using the host's iSCSI initiator software, connect the host computer to your iSCSI targets on the RDX QuikStation.
>
> If you do not set up iSCSI security first, any previously connected hosts will remain connected to the RDX QuikStation regardless of the security you set later.

This section covers the following topics:

- Setting iSCSI Security
- Connecting iSCSI Targets with CHAP for Windows
- Connecting iSCSI Targets with CHAP for Linux
- Connecting iSCSI Targets with CHAP for Mac OS X

Setting iSCSI Security

To set iSCSI security:

1. Sign in to the RDX QuikStation (see Chapter 2, "Connect to RDX QuikStation," on page 20).

2. Click the **Logical Device** top tab, select the **iSCSI target** from the tree view on the left, and click the **Security** tab.
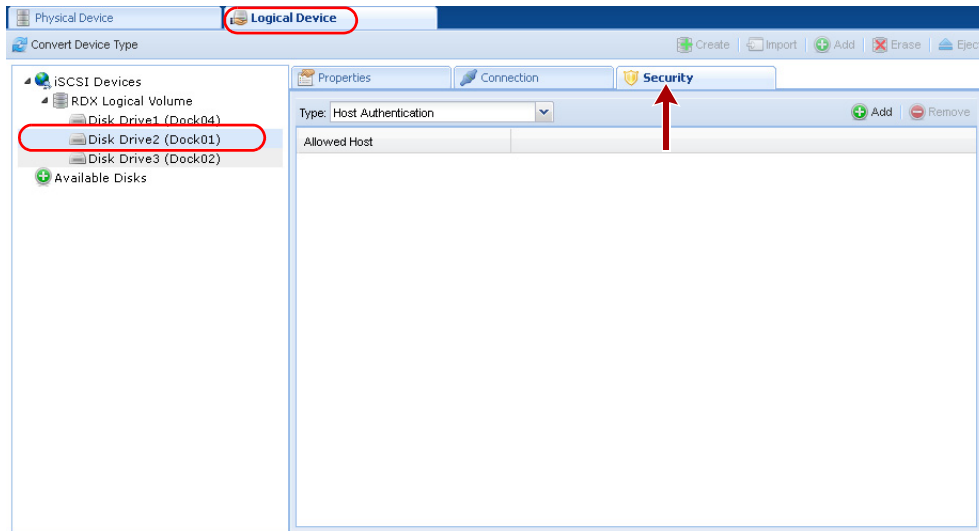
3. Enable your **authentication**.

   - To set CHAP authentication, see "Enabling CHAP Authentication" on page 31.
   - To set host authentication, see "Enabling Host Authentication" on page 32.

Enabling CHAP Authentication

To add CHAP users (host computers) to an iSCSI target:

1. From the **Security** tab dialog window, verify that the **CHAP Authentication option** is shown in the drop-down menu window.

2. Click **Add**.
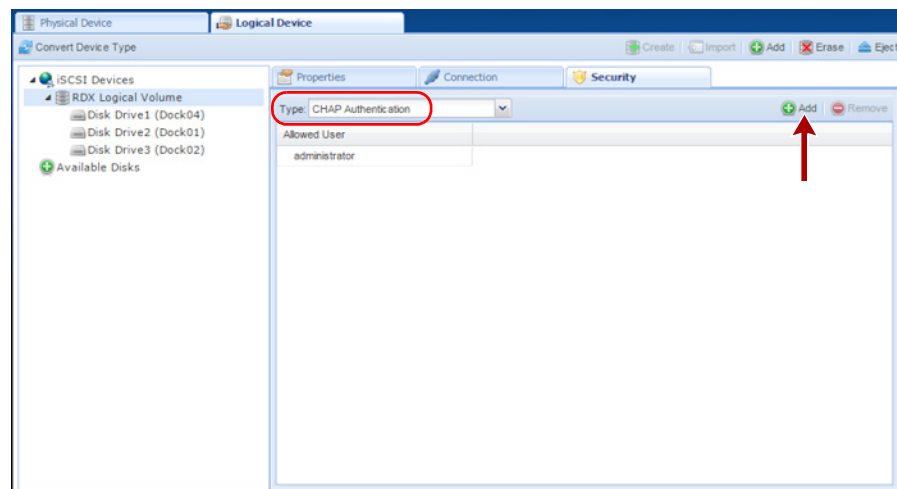
The **Add iSCSI User** dialog box opens.
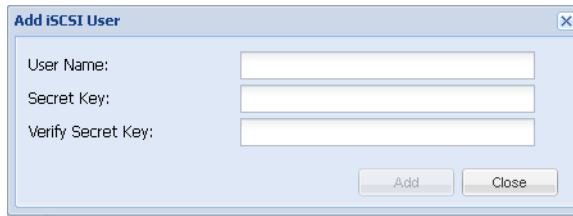
3. In the **User Name** field, enter the host initiator **name**.

    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. Enter and verity the CHAP **Secret Key**.

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

5. Click **Add**.

Enabling Host Authentication

To add host computers that are allowed to connect to an iSCSI target:

1. From the **Security** tab dialog window, select the **Host Authentication option** from the drop-down menu window.
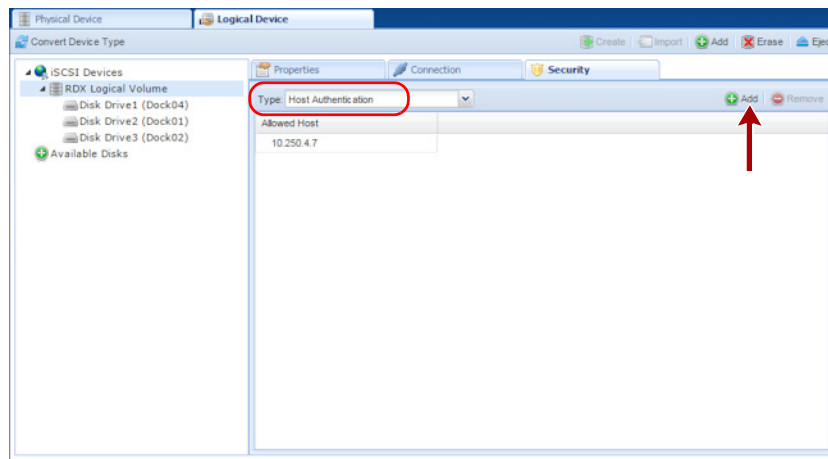
2. Click **Add**.

The Add iSCSI Host dialog box opens.
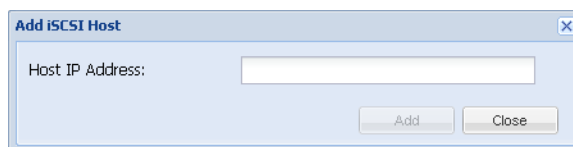
3. Enter the **IP address** for the network host.

4. Click **Add**.

Connecting iSCSI Targets with CHAP for Windows

The following instructions describe how to connect your network host computers in Windows Server 2012R2. Your iSCSI initiator interface may differ slightly depending on your Windows operating system.

To establish an iSCSI connection with CHAP enabled:

1. After discovering all the iSCSI targets (see), select an iSCSI qualified **name** (IQN) from the list, and click **Connect**.

   The **Connect To Target** dialog window opens.
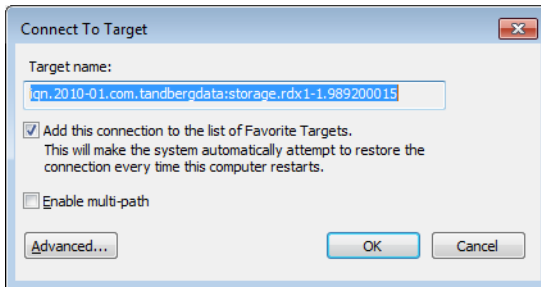
2. Click **Advanced**.

3. In the **Advanced Settings** dialog window, complete the following **actions**:
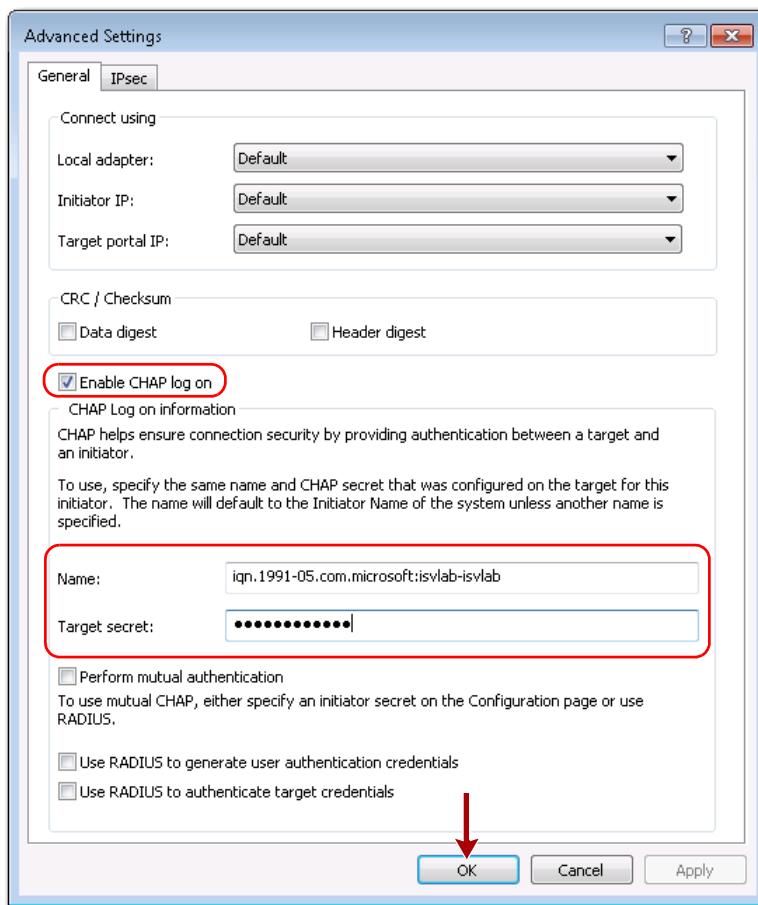
   a. Check the **Enable CHAP log on** box.

b. Enter the CHAP **Name**.

The name must match the name that was set for this particular target.

c. Enter the **Target secret**.

This secret must match the CHAP secret key that was set for this particular iSCSI target.

d. Click **OK**.

e. At the **Connect to Target** dialog window, click **OK** again.

The RDX QuikStation's iSCSI target should display as **Connected** in the **Discovered targets** section of the **iSCSI Initiator Properties > Targets** window.
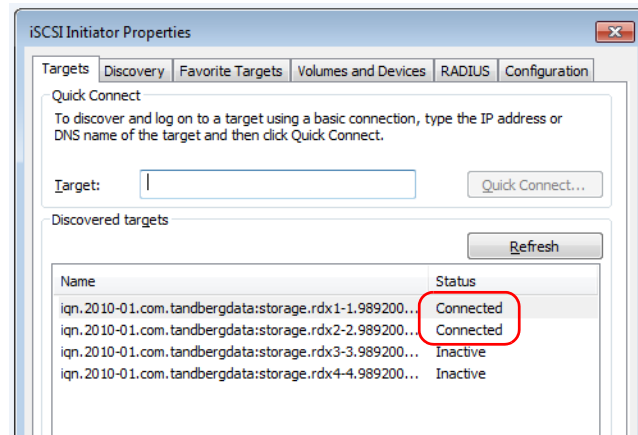
⚠ **CAUTION:** Before you shut down or restart the RDX QuikStation for any reason, it is recommended that you disconnect all iSCSI targets.

Connecting iSCSI Targets with CHAP for Linux

The following instructions describe how to connect iSCSI targets with CHAP authentication using a newly-installed Linux Open-iSCSI Initiator that is available for Redhat Enterprise Linux, CentOS, Fedora Linux, Debian, and Ubuntu operating systems.

NOTE: For more information about using an Open-iSCSI Initiator with your specific Linux operating system, refer to your Linux distribution website.

1. Install **Open-iSCSI Initiator**.
   - To install the Linux 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 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**.

Uncomment the following lines and replace 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_IP_address>`** with the actual IP address for your RDX QuikStation:

`# iscsiadm -m discovery -t sendtargets -p <RDX_IP_address>`

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

4. Connect to **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 or mount iSCSI disks like a normal disk.

> ⚠ **CAUTION:** Before you shut down or restart the RDX QuikStation for any reason, it is recommended that you disconnect all iSCSI targets.

Connecting iSCSI Targets with CHAP for Mac OS X

The following instructions describe how to connect your Mac OS X 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 OS X 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. Discover all the **iSCSI targets** (see).

2. 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.
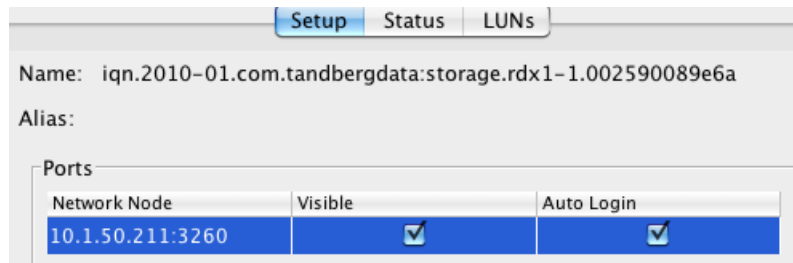
b. Check both the **Visible** and **Auto Login** boxes.

c. Click **Security**.

The **Configure Security** dialog window opens.
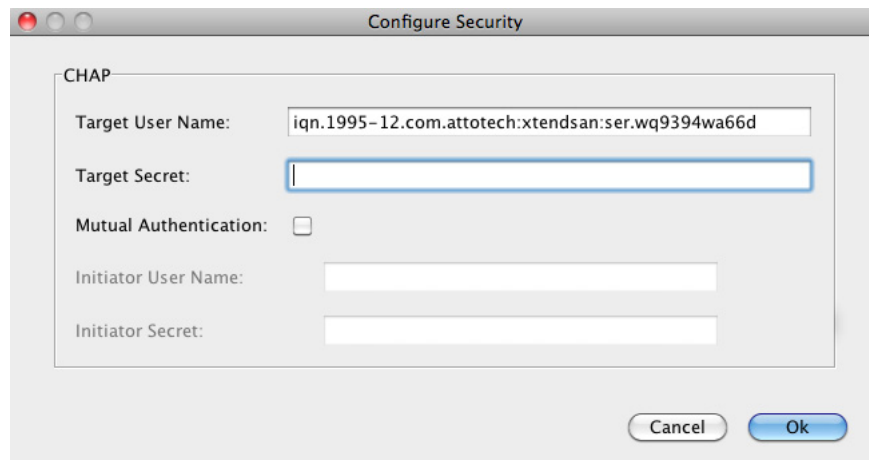
NOTE: The **Target User Name** (the host's IQN name), must match the user name that is specified in the iSCSI Management settings.

d. Enter the **Target Secret**.

This secret must match the CHAP secret that was set for this particular iSCSI target.

e. Click **OK**.

f. Click the port information **Status** tab.

The target's connection status is displayed.
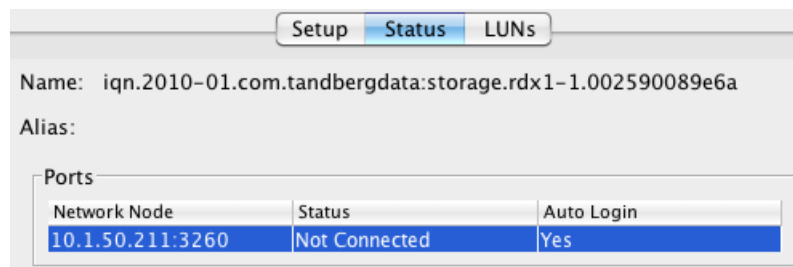
g. Select the Network Node that is shown, and click **Login**.

When connected to the RDX QuikStation, the iSCSI targets are displayed with a green icon.
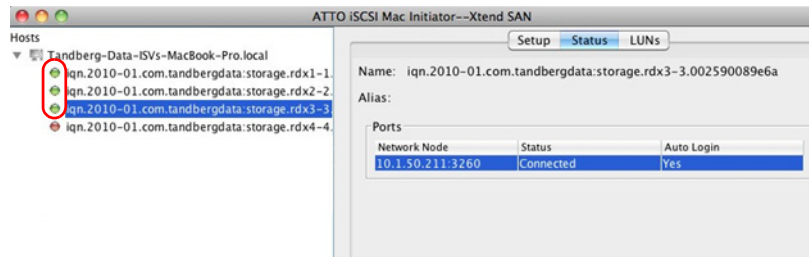
> ⚠ **CAUTION:** Before you shut down or restart the RDX QuikStation for any reason, it is recommended that you disconnect all iSCSI targets.

4

System Configuration

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

Topics in Setup and Configuration:

- System Settings Overview
- Date and Time Configuration
- Network Configuration
- Notification Configuration
- User Management
- Convert Device Type
- Options for RDX QuikStation

System Settings Overview

As a user with administrator permissions, the following functions are available for you to view and modify from the **System Settings** menu.

System Setting Menu	Description
Date/Time	Set the date, time, and NTP server. (see "Date and Time Configuration" on page 39).
Network (Information)	Modify the RDX QuikStation name, assign a static IP address, configure DNS server addressing information, and set a port bonding mode. (see "Network Configuration" on page 40).
Notification	Specify email addresses where messages for error reporting and password recovery are sent, enable SMTP authentication, and customize email sender and subject line text. (see "Notification Configuration" on page 45).
User Management	Add, remove, and edit users that are allowed access to the RDX QuikStation (see "User Management" on page 46).
Convert Device Type	Change the logical device type for the RDX QuikStation. For more information about logical device types, see "Convert Device Type" on page 53 and Chapter 5, "Select the Logical Device Type," on page 62. ⚠ CAUTION: If you convert the logical device type, make sure there are no active host connections to the iSCSI targets before doing so.

System Setting Menu	Description
Options	The Options dialog window is divided into three tabs: System, Removable Disk, and Diagnostics. See "Options for RDX QuikStation" on page 53 for more information.

Date and Time Configuration

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. Select **System Settings > Date/Time**.

   The **Date/Time Settings** dialog window opens.

2. Choose one of the following **options** to change the settings:

   • Recommended: Check the **Keep time synchronized with NTP server** box, type one or more valid NTP server IPv4 addresses (or its fully qualified domain names) in the **Time Server** field. When entering multiple NTP server names or IQNs, separate them with commas.
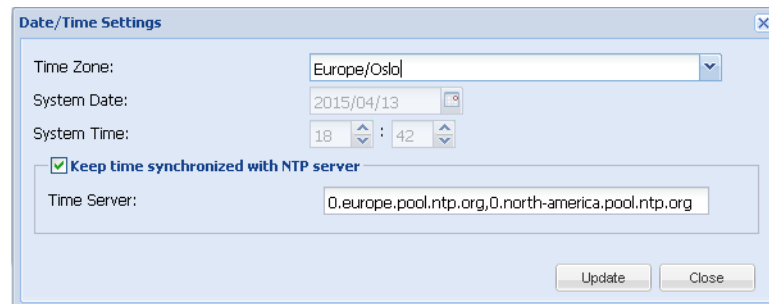
   • With the **Keep time synchronized with NTP server** box unchecked, use the **Time Zone** drop-down list at the top to select a zone then manually change the **System Date** and **System Time** fields as needed.
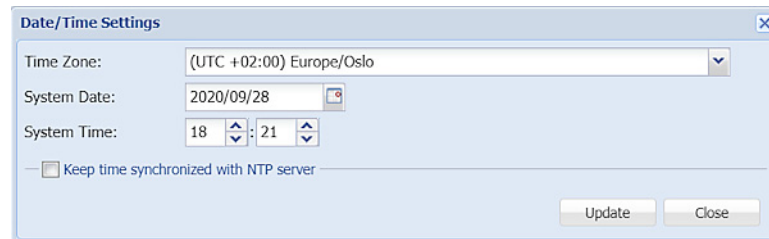
NOTE: The RDX QuikStation hardware clock defaults to UTC (Coordinated Universal Time). When changing the time zone, always click **Update** before changing the date and/or time.

3. Click **Update**.

Network Configuration

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

The RDX QuikStation has multiple network interfaces. These may be used as separate connections or may be "bonded" together to act as a single connection to protect against failure or to improve throughput.

NOTE: If a port is not connected to the Ethernet, be sure to set the port IPv4 setting to **Disable this interface**, and set the bond for that interface to **None**. If this is not done, it will take longer for the system to boot and, under certain circumstances, ports that are connected may not function properly.

To configure network information for the RDX QuikStation:

1. Select **System Settings > Network**.

   The **Network Settings** dialog window opens, showing only those interfaces that are not part of another bonded interface.
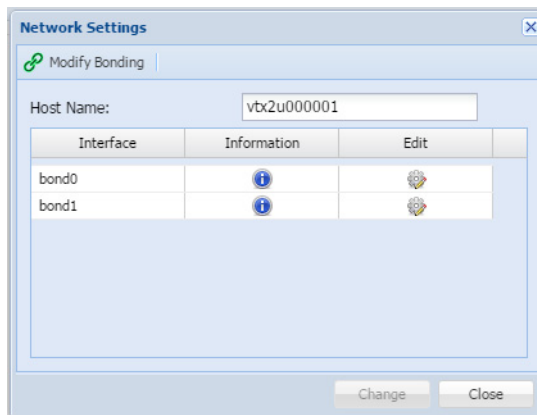
2. If desired, you can modify the **host name**.

   The default RDX QuikStation host name uses "vtx1u" (QuikStation 4) or "vtx2u" (QuikStation 8) plus the last five digits of the unit's serial number.

3. To change the way in which the network interfaces are bonded, click **Modify Bonding**.
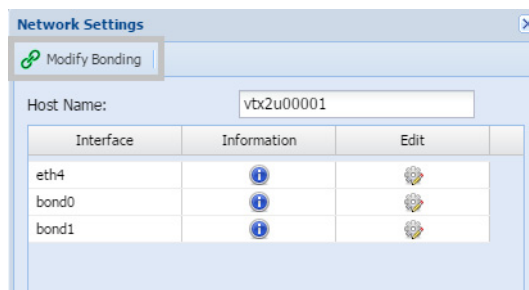
The **Modify Bonding** dialog opens.

(RDX QuikStation 4, two 1GbE ports)

(RDX QuikStation 8, four 1GbE ports)
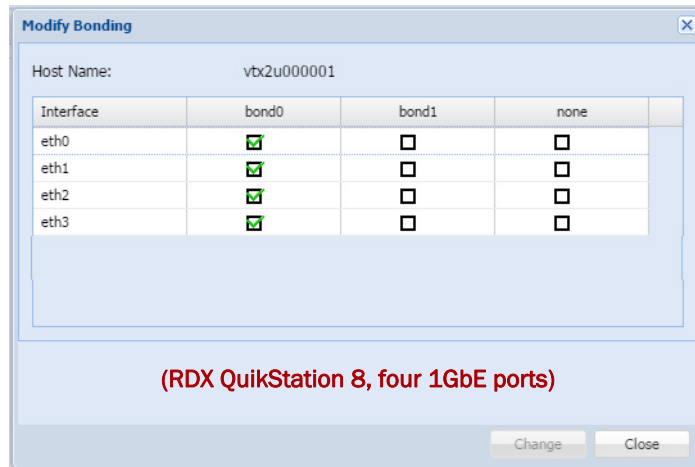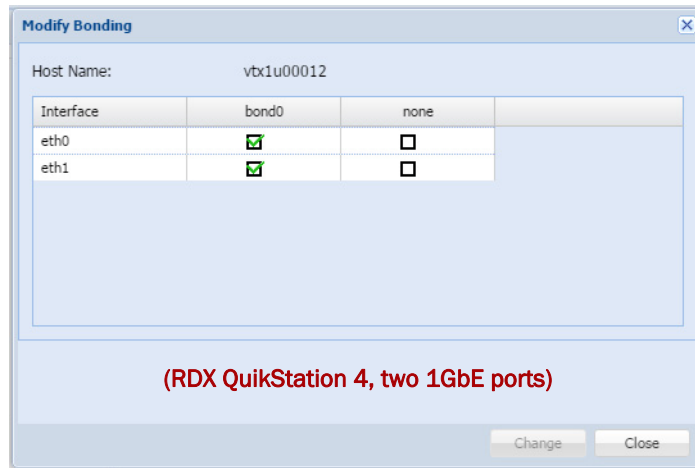
NOTE: For RDX QuikStation 8 10GbE models, the 10GbE interface cannot be bonded with the 1GbE interfaces, if available.

(RDX QuikStation 8 Single 10GbE Model)
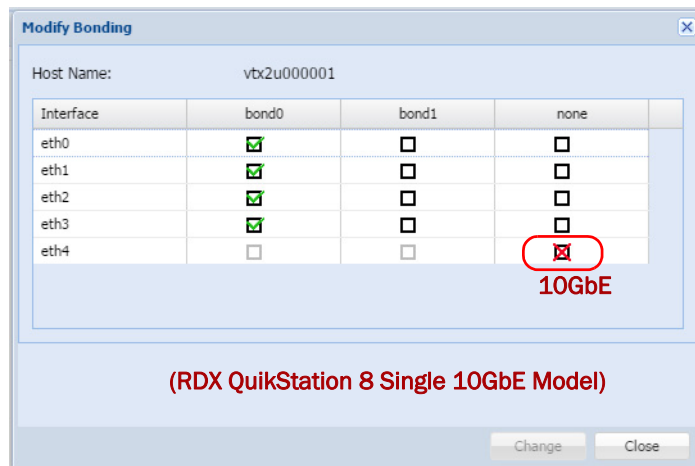
4. If desired, select a new **bonding configuration**.

   Normally, the interfaces are bonded in pairs. Bonded interfaces act like a single interface to the host (see "Port Configuration Options" on page 43 for more information). Non-bonded interfaces operate independently.

   NOTE: Be sure to verify the network settings (see Step 5) for each interface whose bonding has been changed.

5. Click **Change** to modify the bonding settings and return to the **Network Setting** dialog.

   Bonding changes are not made permanent until *all* the network settings are saved.

6. To change the network settings, click the **Edit** icon (🔧) to display the Modify Network Interface Settings page.

7. Set the **MTU size** used for the rest of the network (1500 to 9000 bytes).

   The default value is 1500 bytes. All devices sharing a network should have the same MTU setting.

8. If you are configuring a bonded setup, select a **bonding configuration**.

   By default, the port setting is set for **Active Backup** or **Failover**. In most cases, this default setting suffices for your network environment. See "Port Configuration Options" on page 43 for more information.

9. Choose an **IP address** option to either obtain network addressing automatically via DHCP or set static addressing information.

   It is recommended you set a static IP address to prevent inadvertent address changes.

   • When DHCP configuration is selected, the DHCP server in your network should provide all required information to configure network interfaces. No additional setting is required.

   • When static IP address is selected, the IP address and Subnet mask must be set. DNS and Search Domains may only be set if the Default Gateway is set. Only one Default Gateway may be set for all interfaces.

10. If you have selected **Static IP Address Configuration**, configure the **Search Domain**:

> NOTE: You can configure DNS and search domain only for static configuration with gateway address set.

    a. Enter the **IP Address**, the **Subnet Mask**, and the **Default Gateway**.

    b. Add or modify the **Primary DNS** (lookup domain).

    c. If desired, enter a **Secondary DNS** (lookup domain).

    d. Click **OK**.

> NOTE: If you change the IP address and the RDX QuikStation does not connect within 3 minutes after the reboot procedure started, close the web browser window and open a new one with IP address you've configured.

After the unit has been rebooted, you can verify the changes. From the **System Settings > Network Settings** dialog, select **Information** to display the **Active Network Interface Settings** dialog.

Active Network Interface Settings

General

Interface	bond0
MAC Address	78:24:af:84:e4:6c
Link Speed	1000
MTU size (bytes)	1500
Search Domain	

IPv4

IP Address	10.250.4.221
Broadcast Address	10.250.31.255
Subnet Mask	255.255.224.0
Default Gateway	10.250.1.1
Primary DNS	10.250.11.100
Secondary DNS	10.250.11.103

IPv6

IP Address	fe80::7a24:afff:fe84:e46c
Prefix	64
Default Gateway	
Primary DNS	
Secondary DNS	

OK

---

11. Click **OK** to close.

Port Configuration Options

The RDX QuikStation 4, depending on the model, has either two or four 1GbE ports to provide failover protection and high availability network connectivity. The RDX QuikStation 8, depending on the model, has either four 1GbE ports, four 1GbE and one 10GbE ports, or two 10GbE ports. 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 benefits of port bonding include:

- Increase throughput compared to a single connection.
- Redundancy in the event one of the connections fails.

NOTE: For the RDX QuikStation 8 model with four 1GbE and one 10GbE ports, the 10GbE port cannot be bonded with any 1GbE ports.

Bonded Network Configuration

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

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

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 is limited by that port's throughput. It 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-cartridge environment that has multiple iSCSI host connections. This mode can provide a maximum performance for multiple iSCSI sessions from the different IP addresses. You might consider using this option if you have configured your RDX QuikStation as the maximum number of RDX docks, and you are using most or all of the iSCSI targets.
Dynamic link aggregation (802.3ad)	Creates aggregation groups that share the same speed and duplex settings. Utilizes all slave network interfaces in the active aggregate group according to the IEEE 802.3ad specification.
	Requires 802.3ad support in Ethernet switch and host computer (iSCSI initiator). This mode shall be utilized as point-to-point between RDX QS 4 and the initiator host.This mode can provide a maximum performance for a multiple iSCSI sessions from the same IP address.
	If the network is not configured properly, using this port bonding mode can disrupt the entire network.

Split Network Configuration

When there is more than one Ethernet interface available to the host, each available interface is configured separately. Configuration of each separate interface is similar to the configuration of a single bonded interface above with a few exceptions:

- An unbonded interface dialog has no bonding mode settings.
- IP address must be different for all interfaces.
- Only one default interface can have gateway address set.
- If one interface is set in DHCP mode, it is considered a default interface.
- You can configure DNS and search domain only for interface with static configuration, which has gateway address set.

• At least one interface must be enabled in a split setup.

NOTE: A split Ethernet port configuration should be used if ports are connected to the different networks. If ports are connected to the same network setup, use a bonded port configuration. You may also want to use split Ethernet connection if you choose to allow the Multiple Host Connections option. See "Options for RDX QuikStation" on page 53.

Notification Configuration

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

The Notifications Settings dialog window consists of three tabs: basic, authentication, and customization. If your email server requires it, the **Authentication** tab allows you to add a user name and password for SMTP authentication. 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.

NOTE: If the network is set to a static IP address, the Default Gateway, Search Domain, and primary DNS server may have to be set to access the email server.

Setting Basic Email Notification

1. Select **System Settings > Notification**.

   The Notification Settings dialog displays.

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.example.com`. You can also enter a valid IPv4 address, such as, `192.168.1.101`.

4. If required, specify the **SMTP email port**.

   The default is 25.

5. If your email server uses SSL/TSL, check the **box** to enable it.

6. Click **Change**.

Setting SMTP Authentication

1. From the **Notification Settings** dialog window, click the **Authentication** tab.

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

3. From the drop-down menu, select the authentication method – either **Plain** or **CRAM-MD5**.

4. Click **Change**.

Customizing Email Subject and From Address

1. From the **Notification Settings** dialog, click the **Customization** tab.

2. Type your desired **From email address** using standard email format.

    For example, **myQuikStation@example.com**. The From email text does not need to be a valid email address.

3. If desired, type a **custom subject text**.

    This text is used in all emails that are generated by your RDX QuikStation.

4. Click **Change**.

User Management

> 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 covers:

*   Group Permissions Overview
*   Adding Users to a Group

Group Permissions Overview

The RDX QuikStation Group Permissions table describes the functionality each group can access.

| 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 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 media. • clone data on RDX media. • 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. Select **System Settings > User Management**.

   The User Management dialog window opens.
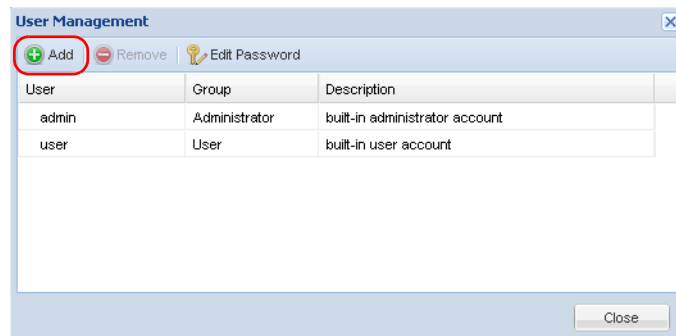
2. Click **Add**.

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 underscore (_) character. Names are limited to 80 characters in length.

   - 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. From the drop-down menu, select the **group** to which you want to assign the user.

   For a description of the permissions available to each group, see "Group Permissions Overview" on page 47.

5. If desired, type a **description** to identify the user.

6. Click **Add**.

Removing Users from a Group

To remove users from a group:

1. Select **System Settings > User Management**.

2. From the **User Management** dialog, select the **user** that you want to remove to highlight.

3. Click **Remove**.
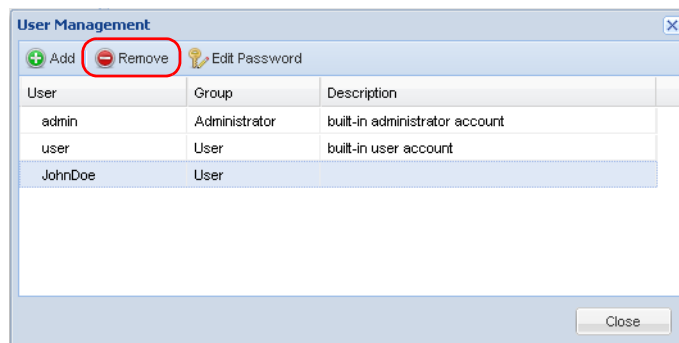
The **User Account Control** window displays.
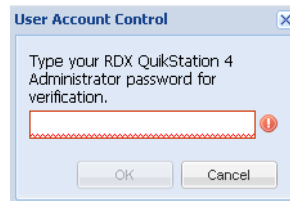
4. Enter your RDX QuikStation **Administrator password**, and click **OK**.

5. 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. Select **System Settings > User Management**.

2. From the **User Management** dialog, double-click in the **field** you want to edit.

The field becomes editable.

3. Make your desired changes, and press **Enter**.

> NOTE: User names can only contain letters, numbers, and the underscore (_) character. Names are limited to 80 characters in length.

Editing a Password

> NOTE: For users assigned to administrator and manager groups, you must first enter your RDX QuikStation administrator password before editing the password.
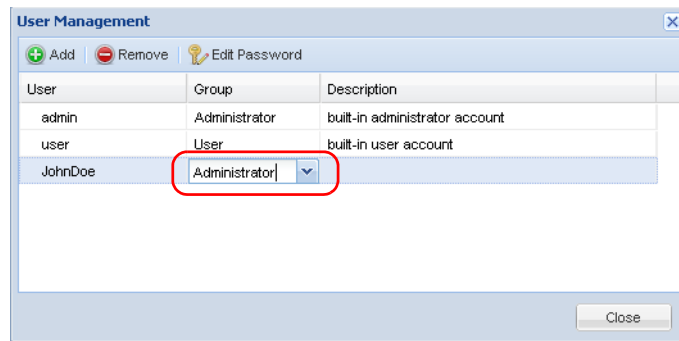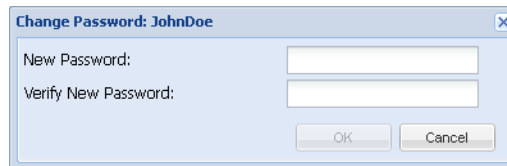
1. Select **System Settings > User Management**.
2. From the **User Management** dialog, select the **user**.
3. Click **Edit Password** to open the change dialog.

4. Type a new **password**, type the password again to verify, and click **OK**.

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

Recovering the Built-In Administrator Password

> 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 built-in administrator password you created, you can reset the password via email or USB.

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

Resetting the Password via Email

1. From the RDX QuikStation sign-in dialog, click the question mark (**?**) in the upper-right corner.
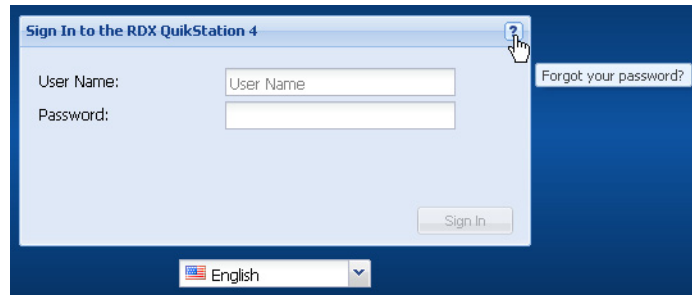
The **Password Reset** dialog is shown.

2. Select the **Administrator** option.

3. Click **Continue**.

The Administrator Password Reset dialog opens.
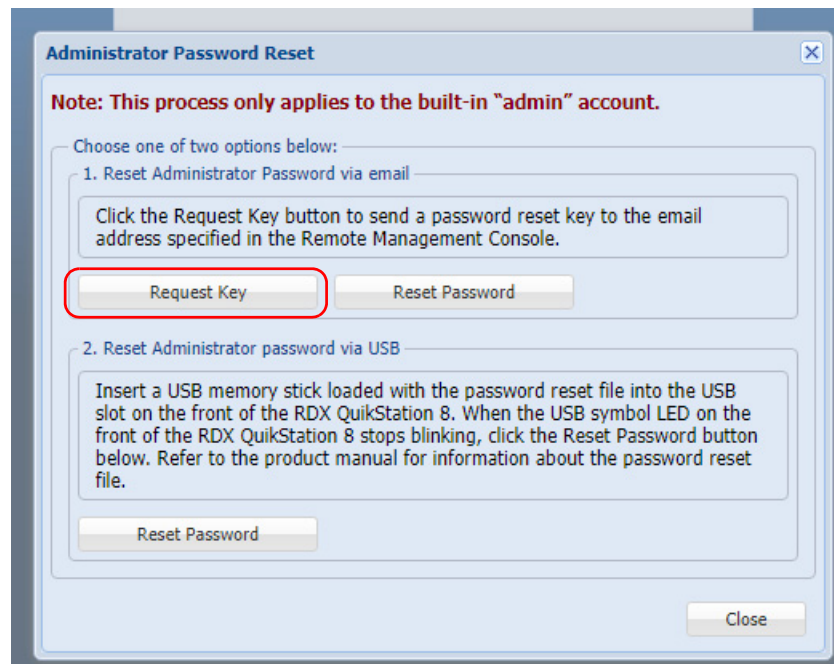
4. Select **Request Key**.

The RDX QuikStation sends an email message to the configured address (see "Notification Configuration" on page 45). The request key remains valid for one hour.

5. Click **OK** and leave the **Administrator Password Reset** dialog open.

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

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

7. Type a new **password**, type the password again to verify, and click **OK**.

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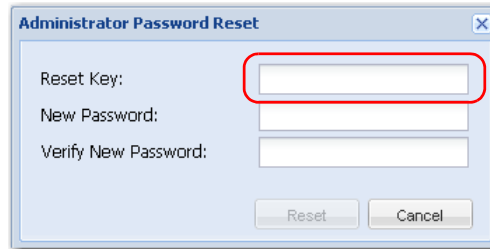
Resetting the Password via USB

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

> **IMPORTANT:** The Overland-Tandberg-supplied USB flash drive might include configuration example files. Change file extensions to `*.example` to make sure the correct action would be performed by RDX QuikStation firmware.

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

1. Insert a **USB flash drive**.

   You can use any USB flash drive that is formatted with a type of FAT32 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**.
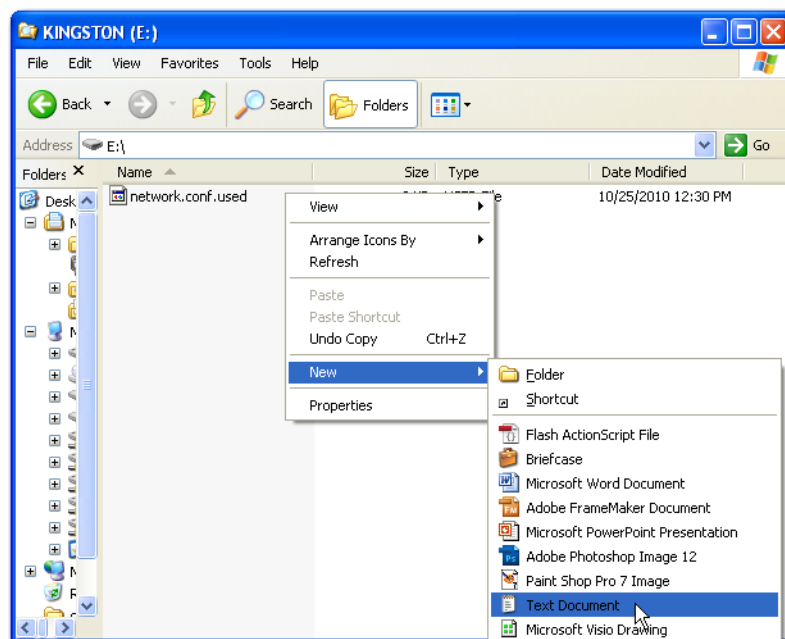
3. Rename the text file to `password.reset`. (In Windows, click **Yes** to confirm the file name change.)

4. Remove the USB flash drive from your computer and insert it into an RDX QuikStation **USB slot**.

   A slot is conveniently located on the center-front panel.

5. **Connect** to the RDX QuikStation.

6. From the Sign-in dialog, click the **question mark** in the upper-right corner.
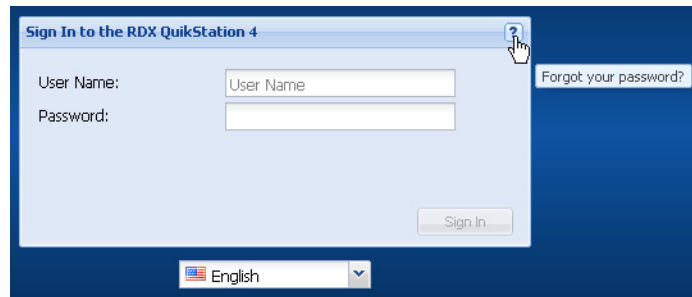
7. Select the **Administrator** option, and click **Continue**.

   The **Administrator Password Reset** dialog opens.
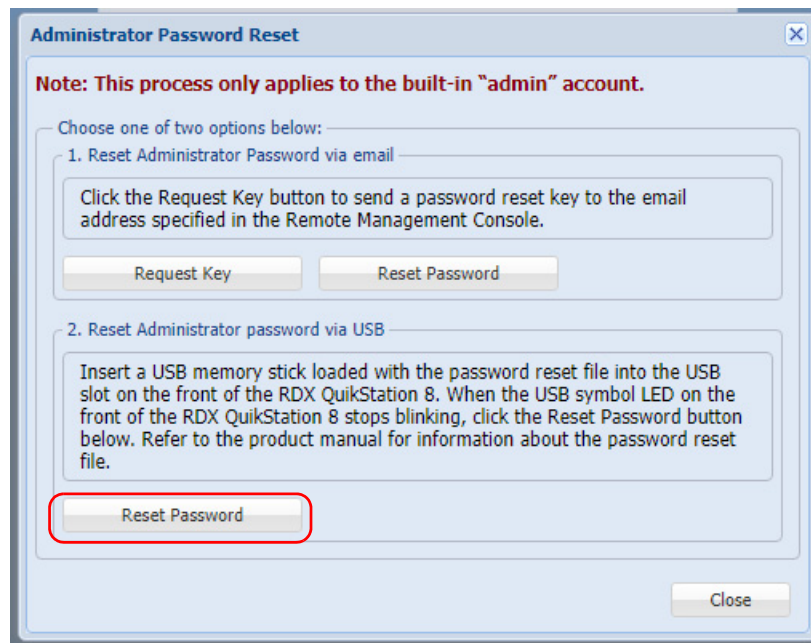
8. In the **Reset Administrator Password via USB** section, click **Reset Password**.

9. Type a new **password**, type the password again to verify, click **Reset**, and click **OK**.

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

10. Once the password is reset, remove the **USB flash drive**.

Convert Device Type

To select or change the logical device type, from the main menu, select **System Settings > Convert Device Type** to open the Options tabs.

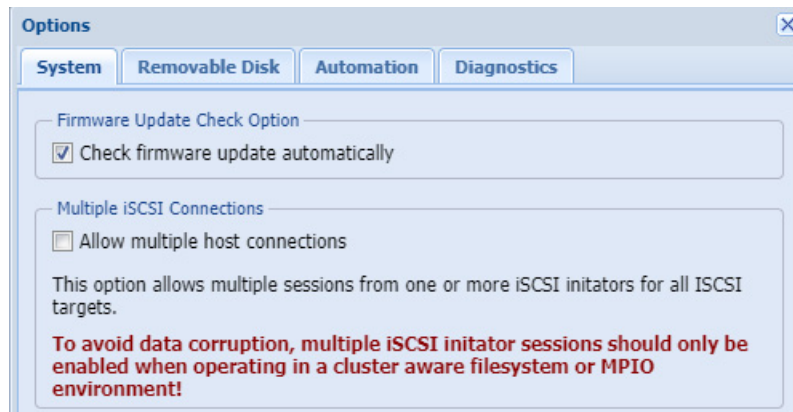For more information, refer to Chapter 5, "Select the Logical Device Type," on page 62.

Options for RDX QuikStation

To access the Options dialog, from the main menu, select **System Settings > 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.

Tab	Option	Description
System	Check firmware update automatically	Recommended. Provides notifications about new firmware releases on Internet-accessible networks.
	Allow multiple host connections	Allows multiple iSCSI connections to drive targets from multiple hosts in cluster environments when hosts can manage drive access. To avoid data corruption, multiple iSCSI initiator sessions should only be enabled when operating in a cluster aware filesystem. This option also supports MPIO for a single host by allowing multiple connections from the host.
Removable Disk	Unsafe Eject	Allows you to enable the "Unsafe Eject" mode for RDX media that have an established host connection (see "Setting Removable Disk Options" on page 54).
Automation	Auto-Insert Options	Allows you to enable the "Auto-Insert" mode tape automation devices. If set, then cartridges physically inserted in the QuikStation docks will be logically placed in an empty tape library rather than in the Import/Export slot (see "Setting the Auto-Insert Option" on page 56).

Tab	Option	Description
Diagnostics	Log Level	Allows you to change the log level from Normal to Detail or Extend. We recommend you only change the log level if you are instructed to do so by Technical Support. NOTE: If you change the log level, the system will default to "normal" once the browser session is closed.
	Remote Access	Allows you to control remote access to the RDX QuikStation via SSH (Secure Shell) for Technical Support (see "Configure Remote Access (SSH)" on page 58). This feature is enabled by default.

The Options dialog window opens with the System tab selected.

System Options
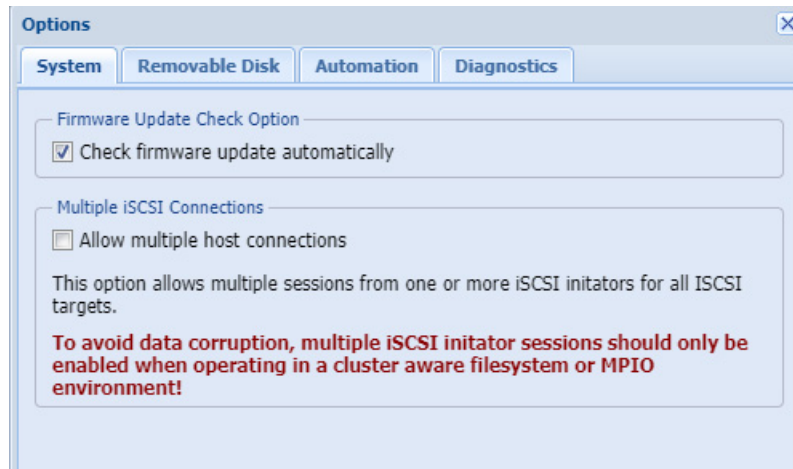
The default setting for **Check firmware update automatically** is selected. This setting is recommended to receive notifications about new firmware releases on Internet-accessible networks.

The **Allow multiple host connections** setting will default to OFF.

⚠ CAUTION: This option should only be enabled if the QuikStation is in a clustered environment where the hosts can properly share a single storage device without causing data corruption.

When set, this option allows more than one host to access the storage device at the same time.

Setting Removable Disk Options

NOTE: The Removable Disk option only applies to disk configurations.

You can enable the **Unsafe Eject Button Option** for RDX media 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 media using either the RDX dock eject button or the eject function. This is because the connected host computer's operating system has reserved the RDX media.

A fixed disk operation mode can also be used for Windows backup support.

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

> ⚠ **CAUTION:** When using this operation mode, do not eject any RDX media while data is being written or read as it might cause data loss and file system corruption.

To enable **Unsafe Eject Button Option**:

1. From the **Options** dialog window, click the **Removable Disk** tab.
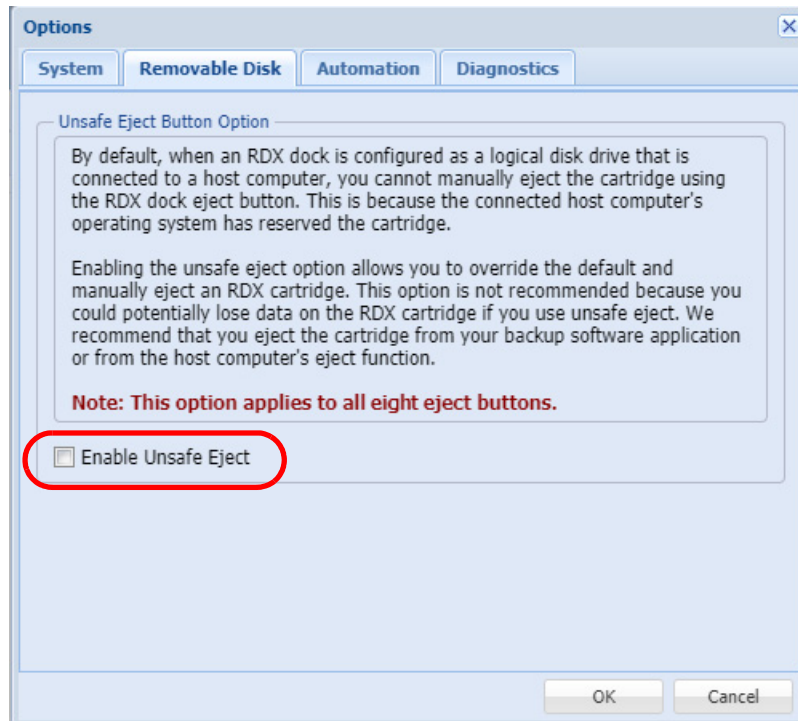
2. Check the **Enable Unsafe Eject** box.
3. Click **OK**.

Setting the Auto-Insert Option

The **Auto-Insert option (IE)** controls how the RDX QuikStation handles tape library import/export slot functionality.
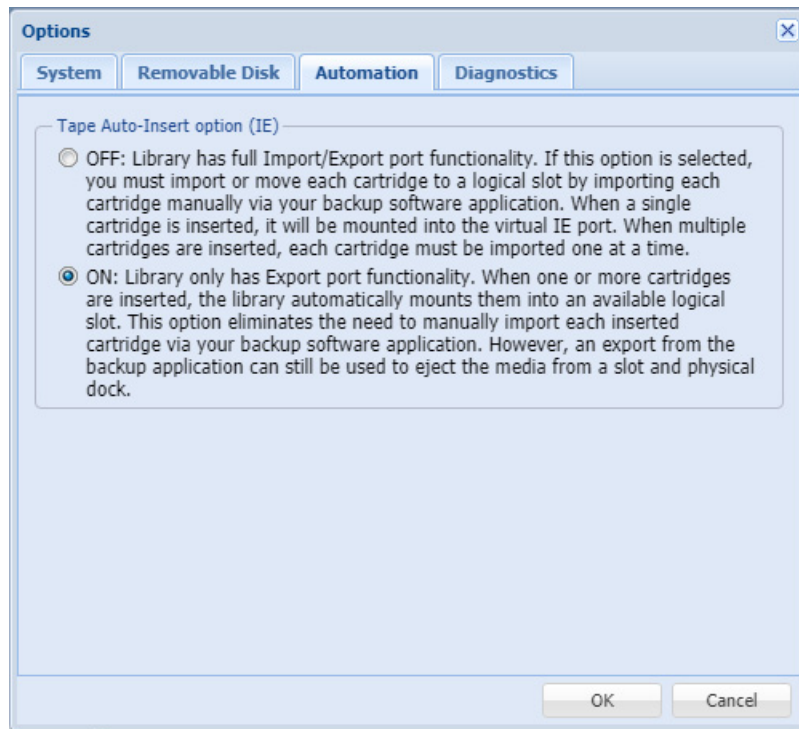
Auto-Insert Option ON

This is the default setting. When one or more RDX cartridges are inserted, the RDX QuikStation automatically moves them into an available logical slot.

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 is used by the RDX QuikStation. However, you can still perform an export from the backup application to eject the media from a logical slot.

This is a **physical** view of a tape library with the Tape Auto-Insert option turned ON. Note that the cartridges' physical locations correspond with their logical tape slot locations.
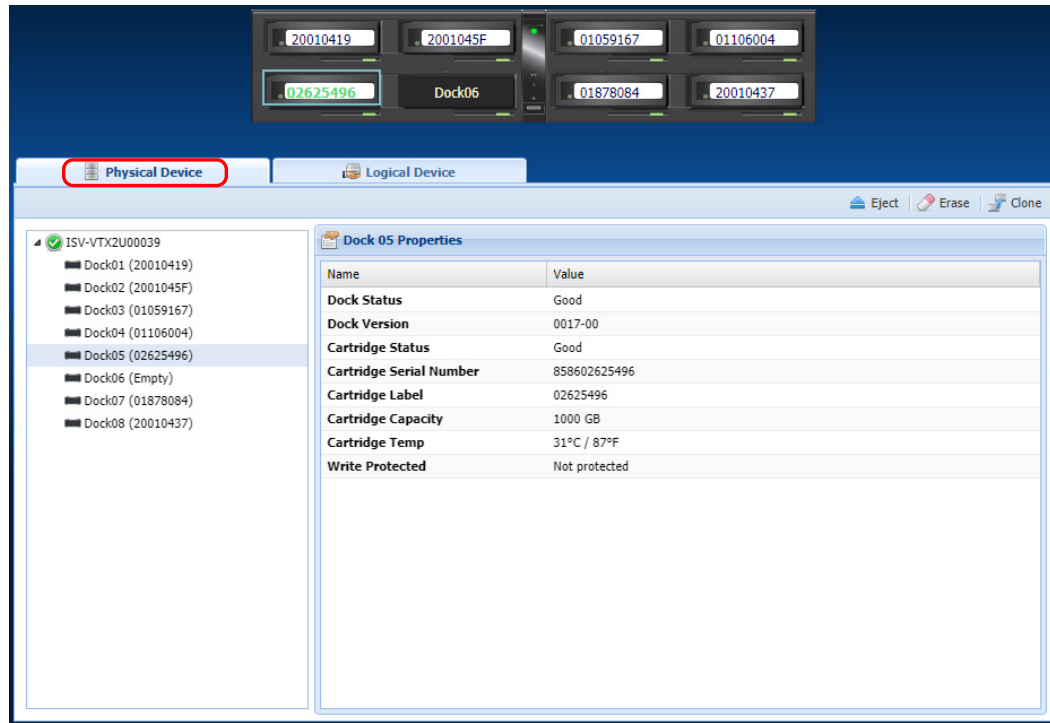
This is a **logical** view of a tape library with the Auto-Insert option turned ON. Note that cartridges automatically mount to logical slots that correspond with their physical dock locations.
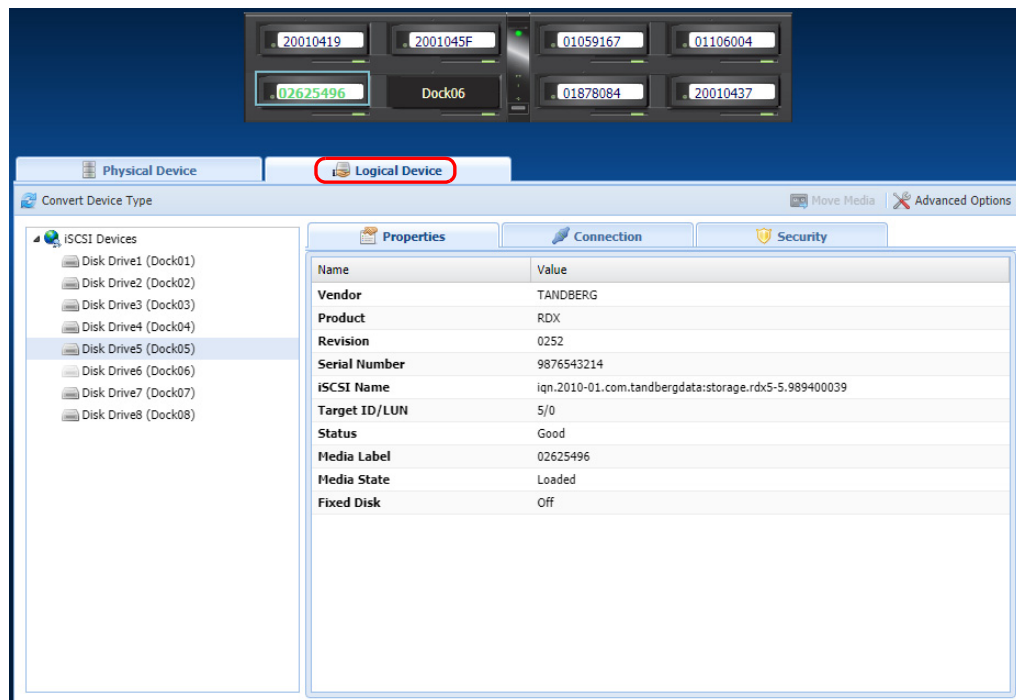
Auto-Insert Option OFF

When a single RDX cartridge is inserted into any dock, it is 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 is mounted to the virtual IE port. The remaining cartridges will not be displayed until you import them one at a time via your backup software application.

NOTE: Refer to your backup software documentation for tape library import/export commands and recommended use.

Change Auto-Insert Option

1. From the **Options** dialog window, click the **Automation** tab.

2. Select your desired **setting** (**ON/OFF**).

3. Click **OK**.

Configure Remote Access (SSH)

Besides using a browser and the unit's IP address for access, your RDX QuikStation can also be accessed at the root level:

- Connect to the unit with the serial port for access.

- Connect via SSH access (the **Allow Remote Access** option must be active).

NOTE: See Appendix A, "Troubleshooting," on page 104 for connection details.

Under the Diagnostics tab, select the **Allow Remote Access** (**SSH**) option to permit the use of SSH to access the RDX QuikStation. It enables or denies access to the RDX QuikStation using either public or private SSH keys.
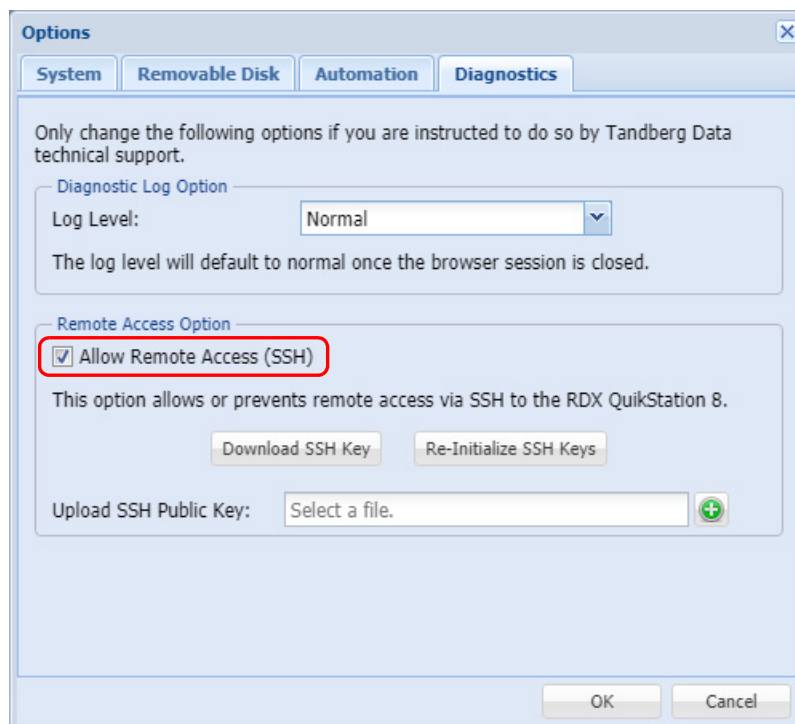
Download an SSH Key

Use this option to automatically generate a private SSH key.

1. From the main menu, select **System Settings > Options**.

2. Switch to the **Diagnostics** tab.

3. With Allow Remote Access (SSH) checked, click **Download SSH Key**.

   The default location is C:\Users\Administrator\Downloads. Click the folder icon in the confirmation message to go to that folder.

4. Click **OK** again to close the **System Settings** options dialog box.

Re-Initialize an SSH Key

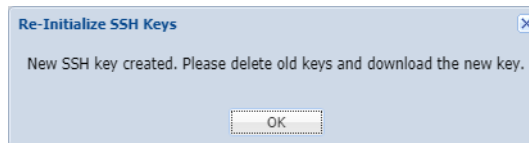Use this option to clear out all previously generated or uploaded SSH keys to ensure they no longer provide access to the RDX QuikStation.

1. From the main menu, select **System Settings > Options**.

2. Switch to the **Diagnostics** tab.

3. Click **Re-Initialize SSH Keys**.

   A confirmation message is shown.

4. Click **OK** again to close the **System Settings** options dialog box.

Generate and Upload SSH Public Key

1. Generate a **public/private SSH key pair** using the ssh-keygen utility.

   a. Open a command line terminal with **ssh-keygen** support.

   b. Paste the **text** below, substituting in your email address where noted.

   ```
   $ ssh-keygen -t rsa -b 4096 -C "your_email@example.com"
   ```
   This creates a new ssh key, using the provided email as a label.

   c. At the **prompt** to enter a file in which to save the key, press **Enter**.
   This accepts your default file location.

   d. At the prompt, type a **secure passphrase**.

2. From the main menu, select **System Settings > Options**.

3. Switch to the **Diagnostics** tab.

4. Click the green plus sign ( ) to the right of the upload field to open a file picker.

5. Navigate to the location where the new public/private key pair was stored, select the file with `.pub` extension, and click **OK**.

6. Click **OK** again to close the **System Settings** options dialog box.

5

Logical Device Management

This chapter describes the Logical Device interface and management.

Topics in Setup and Configuration:

- Logical Device Type Overview
- Select the Logical Device Type
- RDX Targets
- Logical Volumes
- Protected Volumes
- Disk Autoloader

Logical Device Type Overview

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

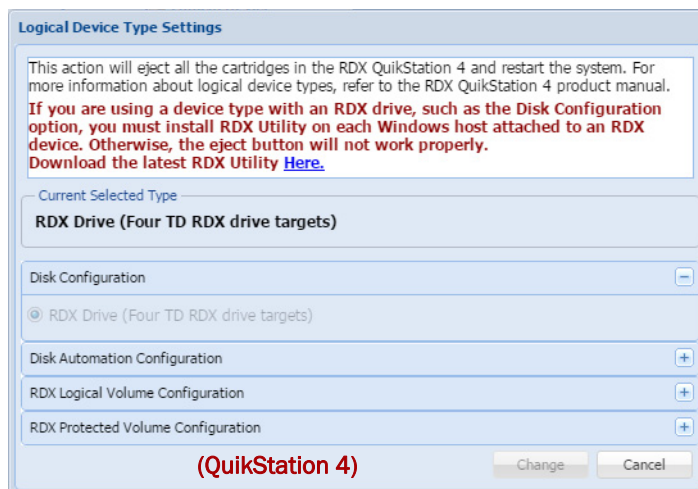| Logical Device Type	QuikStation 4	QuikStation 8	iSCSI Targets	Reported Inquiry String
RDX docks	Four RDX docks (may be set to fixed disk mode; refer to "RDX Fixed Logical Volume" on page 64)	Eight RDX docks (may be set to fixed disk mode; refer to "RDX Fixed Logical Volume" on page 64)	One target for each RDX dock	RDX
Logical Volume Fixed Disk Target	Up to four RDX cartridges as a single fixed disk target	Two volumes with up to four RDX cartridges presented as two fixed disks targets	Each volume is one target	RDX
Logical Volume Removable Disk Target	Up to four RDX cartridges as a single removable disk target	Two volumes with up to four RDX cartridges presented as two removable disks targets	Each volume is one target	RDX
Protected Volume Fixed Disk Target	Up to four RDX cartridges presented as a single fixed disk target with one-disk fault tolerance	One volume with up to eight RDX cartridges presented as a single fixed disk target with two-disk fault tolerance -OR- Two volumes with up to four RDX cartridges presented as two fixed disks targets each with one-disk fault tolerance	Each volume is one target	RDX

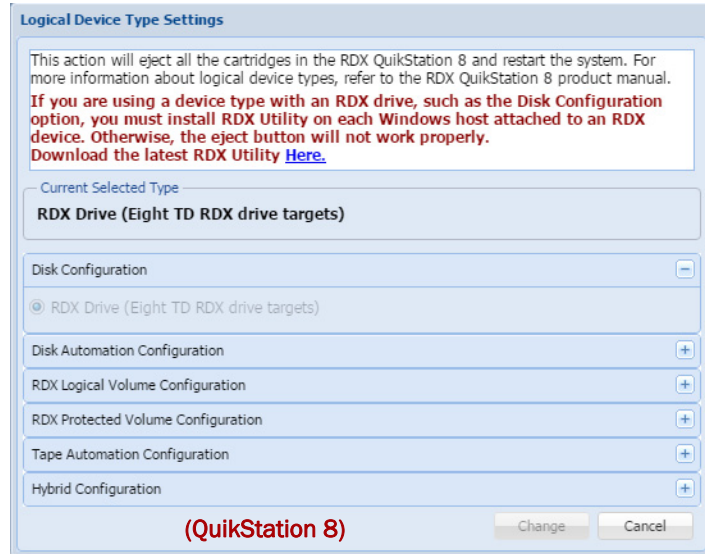| Logical Device Type	QuikStation 4	QuikStation 8	iSCSI Targets	Reported Inquiry String
Protected Volume Removable Disk Target	Up to four RDX cartridges presented as a single removable disk target with one-disk fault tolerance	One volume with up to eight RDX cartridges presented as a single removable disk target with two-disk fault tolerance -OR- Two volumes with up to four RDX cartridges presented as removable disks targets each with one-disk fault tolerance	Each volume is one target	RDX
Disk Automation Configuration	One removable disk and four slot	One removable disk and eight slots	One disk target	RDX
Tandberg Data StorageLoader LTO	Emulated Tape Library with one tape drive and four storage slots	Emulated Tape Library with one tape drive and eight storage slots	Library target LTO target	StorageLoader Ultrium 3-SCSI
Tandberg Data Storage Library 224	Emulated Tape Library with two tape drives and four storage slots	Emulated Tape Library with two tape drives and eight storage slots	Library target Two LTO targets	Magnum 224 Ultrium 3-SCSI
Hybrid: TD StorageLoader and 4 RDX docks	N/A	Emulated Tape Library with one tape drive and four storage slots, plus four RDX docks	Library target LTO target Four RDX targets	StorageLoader Ultrium 3-SCSI RDX

Select the Logical Device Type

> NOTE: If you select the RDX dock configuration, you should first install RDX Manager which is available from www.tandbergdata.com under the Products tab. A link (labeled "**Here**") is also provided in the **Logical Device Type Settings** dialog.

1. Select **System Settings > Convert Device Type**.

   A list of possible configurations from your RDX QuikStation is shown. Actual listings vary depending on the model.

(QuikStation 8)

2. Click the **Logical Device Type** item to show options.

3. Select your **option** and click **Change**.

4. At the confirmation message, click **OK**.

   A reboot note with a progress bar is displayed. The RDX QuikStation reconnects automatically.
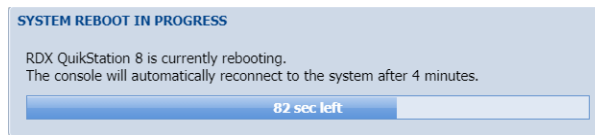
When done, the **Logical Device** tab shows the new configuration with tabs for **Properties**, **Connection**, and **Security**.
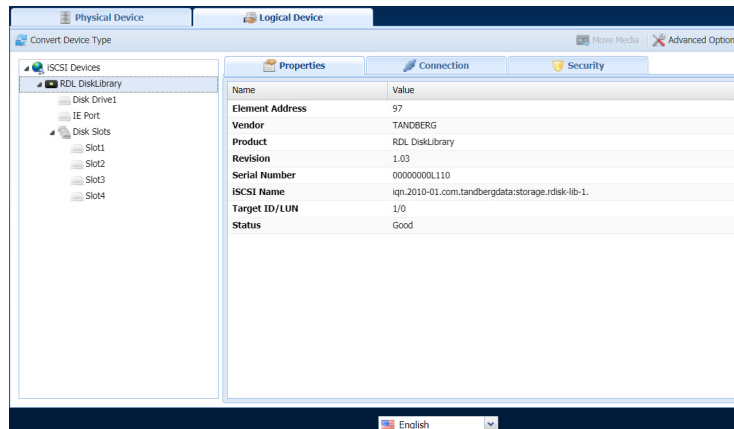
RDX Targets

This configuration presents each QuikStation RDX dock to the computer host as a individual iSCSI RDX dock.

## RDX Individual Dock Drives

By default the target acts like a normal RDX removable cartridge. Optionally, you can set each RDX target to appear as a fixed cartridge to the host using the Advance Options button for the drive. In some environments, this allows both faster read and write times when connected to Windows OS and the use of RDX media with Windows-native backup applications.

1. From the **Logical Device** tab, select an available cartridge and click **Advanced Options**.
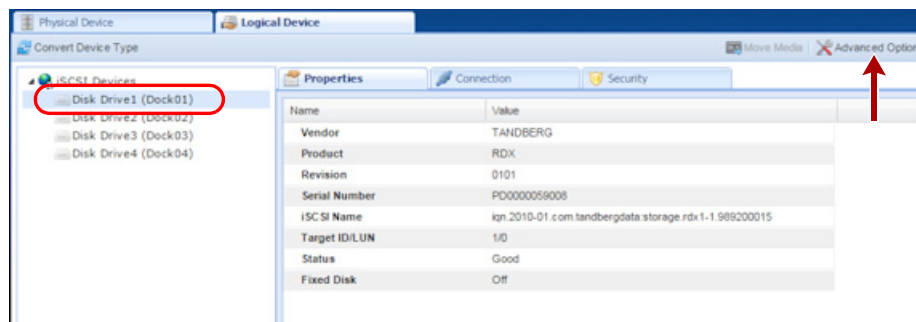
The **Advanced Options** dialog opens.
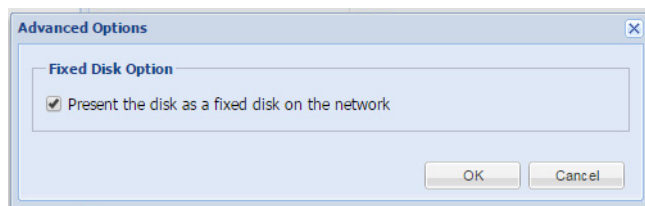
2. Check the **Present the disk as a fixed disk on the network** box, and click **OK**.

RDX Logical Volume

The RDX Logical Volume combines up to either 4 RDX media (for the QuikStation 4) or 8 RDX media (for the QuikStation 8) into a single logical volume target. This configuration allows you to manage a single logical volume comprised of one or more of the RDX media in your system.

The RDX Logical Volume may be presented to the host as either a fixed disk or as an RDX device.

RDX Fixed Logical Volume

The Fixed Disk RDX Logical Volume is presented as fixed disk to the host computer. This means that the host computer will not expect the disk to be removed. The user interface software will not allow the logical volume to be ejected while it has an iSCSI connection to a host.

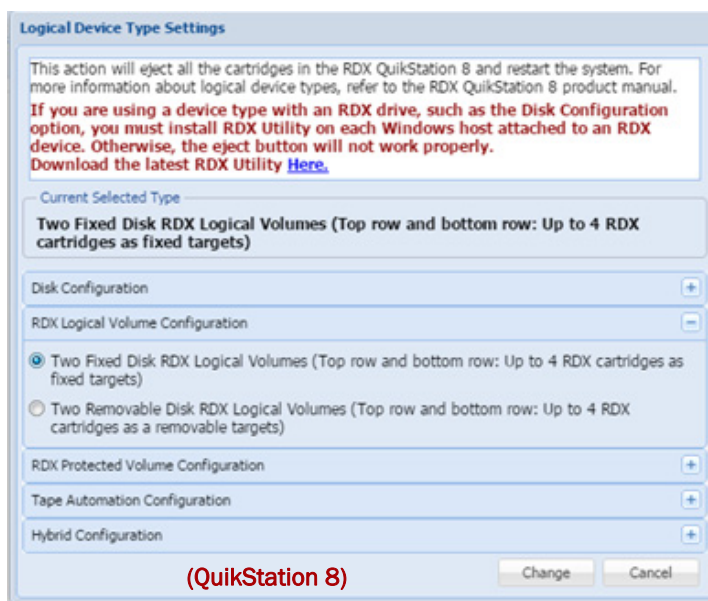The Fixed Disk RDX Logical Volume may have faster write times than the Removable Disk RDX Logical Volume for some host operating systems.
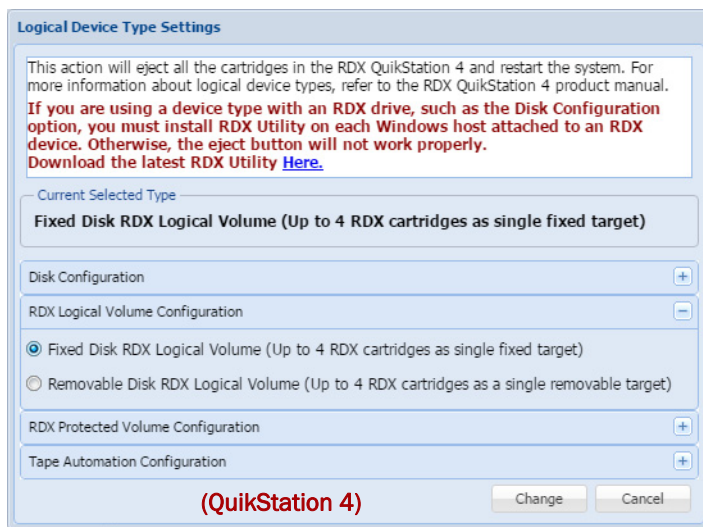
(QuikStation 4)

In the QuikStation 8, you can configure two Fixed Disk RDX Logical Volumes. Each volume consists of up to four RDX cartridges either on the top or the bottom row.

(QuikStation 8)

RDX Removable Logical Volume

The Removable Disk RDX Logical Volume is presented as an RDX removable disk to the host computer. This means that the host computer expects that the disk may be removed. The host operating system may allow ejection of the device from the host. The user interface software will allow the logical volume to be ejected while it has an iSCSI connection to a host as long as the host software has allowed the removal.

When the RDX Logical Volume is ejected all RDX cartridges in the logical volume are ejected.

The Removable Disk RDX Logical Volume may have slower write times than the Fixed Disk RDX Logical Volume for some host operating systems.

Since the RDX Logical Volume is presented as an actual RDX device, it will work with any host software that can utilize an RDX dock.

> NOTE: If you select the RDX Removable Logical Volume configuration, you should first install the RDX Manager, which is available from www.tandbergdata.com. A link is also provided in the Logical Device Type Settings dialog.

The Removable Disk RDX Logical Volume is presented as a single RDX device. Even if no logical volume is present in the system, an RDX dock device will be available to the host iSCSI initiator. In this case the virtual dock will appear to be empty.
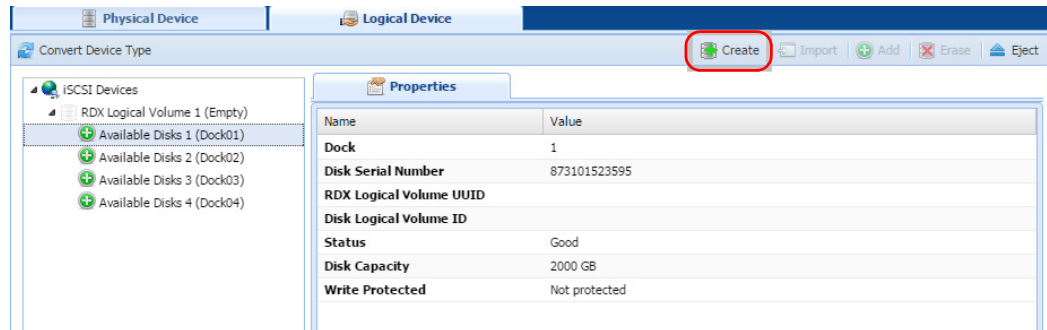

(QuikStation 4)

(QuikStation 8)
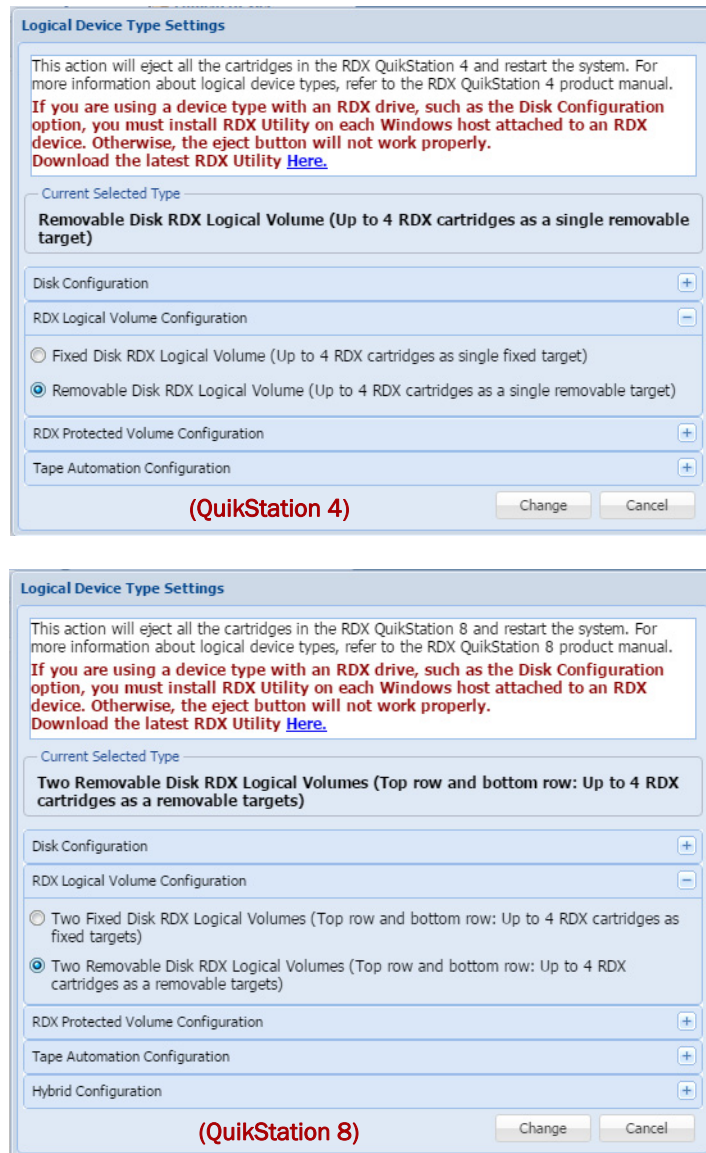
Logical Volumes

RDX drives can be configured as logical volumes that combine the capacity of the RDX media available.

Creating a Logical Volume

If no logical volume is currently present, you can create a logical volume.

1. From the **Logical Device** tab, select an available **disk**.

2. Click **Create** to open the **Create a Logical Volume** dialog.
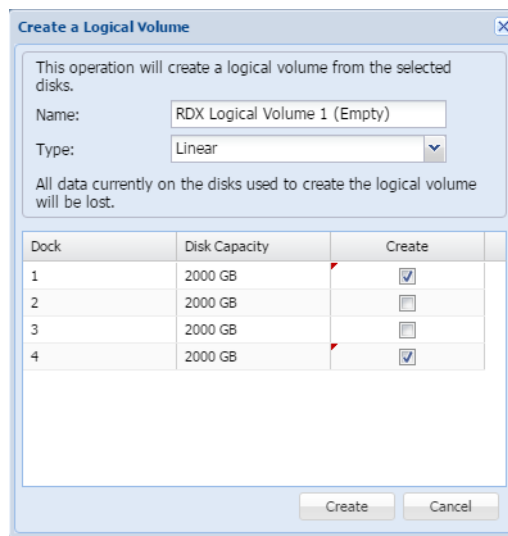
The **Create a Logical Volume** dialog allows you to select which available disks to use to create the logical volume.

NOTE: Write-protected and damaged media are not allowed in this operation.

3. Select the docks to use in the logical volume, and click **Create**.
   The logical volume is created.

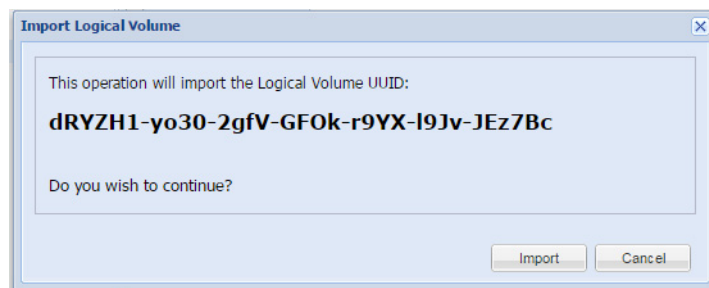## Importing a Logical Volume

If no logical volume is currently present, you can also import a logical volume created on this or another RDX QuikStation unit.

1. Insert all RDX media belonging to this logical volume.

2. From the **Logical Device** page, select **one** of the available disks that has a Logical Volume UUID, and click **Import**.
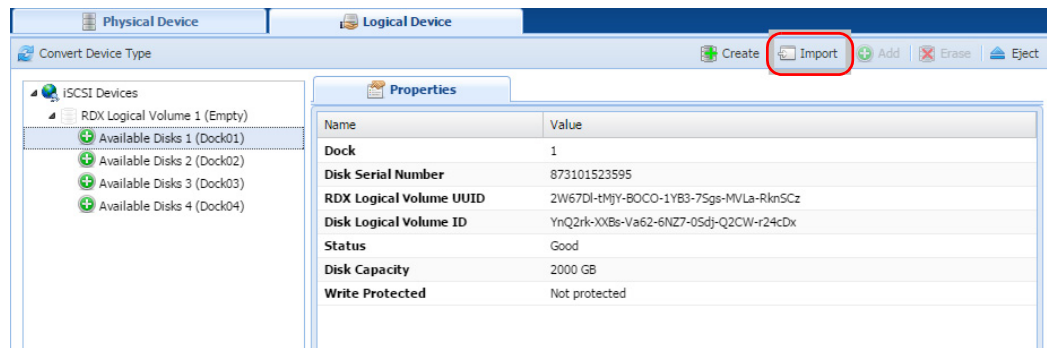
3. At the **Import Logical Volume** dialog, click **Import** to accept the import operation.

The logical volume will be ready to use if all the disks that comprise the Logical Volume are present.

Expanding a Logical Volume

If the logical volume contains fewer than eight disks for the QuikStation 8 or four disks for the QuikStation 4, you can expand it.

NOTE: The logical volume must be disconnected from any iSCSI host prior to adding available disks to the logical volume.

1. Select an available **disk** and click the **Add** button.
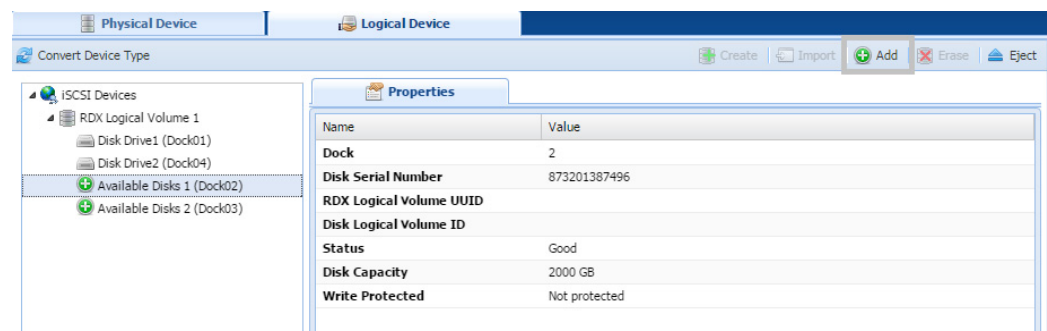
The Add dialog allows you to select which available disks to add to the logical volume.

NOTE: Write-protected and damaged media are not allowed in this operation.

2. Select the **disks** to be added by checking the **Add** boxes.

3. Click **Add Disks** to complete the process.

Once the logical volume has been expanded, the iSCSI host is responsible for expanding the file system on the volume to take advantage of the extra space. How this is accomplished is dependent on the host operating system. Refer to the administrator's guide for your operating system.
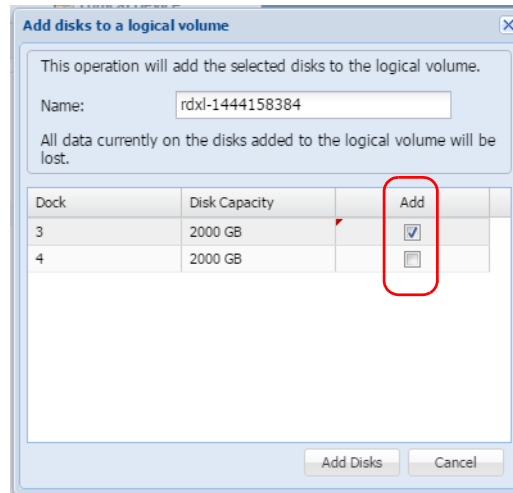
Erasing a Logical Volume

The entire logical volume can be also be erased using **Erase**.

> **NOTE:** The logical volume must be disconnected from any iSCSI host prior to erasing the logical volume.

To erase an entire logical volume:

1. From the **Logical Device** dialog, select the **logical volume** and click **Erase**.

The Remove all Logical Volume information dialog is shown.
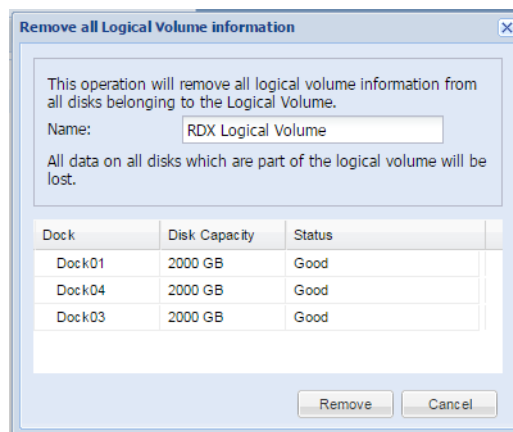
2. Click **Remove**.

Once all logical volume information is removed, all disks will be shown as Available Disks.

NOTE: If you need a secure data erase, please use tools designated for that purpose. Actual data is not erased on the RDX Media, only the partition table on the disk and LVM metadata.

Exporting the Logical Volume

The logical volume may be exported by using the logical volume Eject button.

NOTE: The logical volume should be disconnected from any iSCSI host prior to ejecting the logical volume.

1. From the **Logical Device** interface, select the **logical volume** to export and select **Eject**.
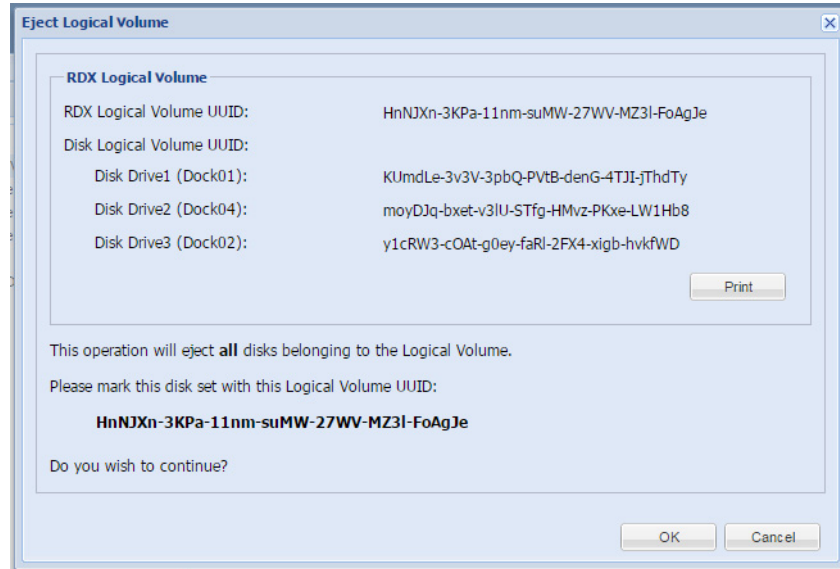
Tip: *Print or copy the Eject dialog information to keep with the logical volume disk set after it is ejected.*

2. At the **Eject Logical Volume** dialog, click **OK** to confirm.

   Once the logical volume disks have been ejected, they should be carefully marked and kept as a set. The disk set, if complete, may be imported into this or any other RDX QuikStation.

   When an RDX Logical Volume is ejected, the Logical Devices will show an empty logical volume.
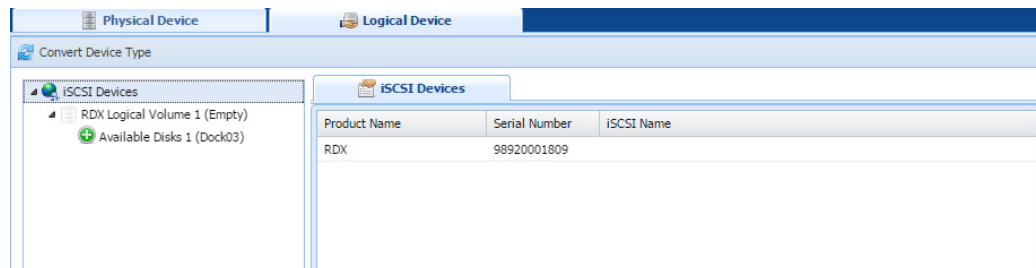
NOTE: For a Removable Disk RDX Logical Volume, you can also export the logical volume by using the 'eject' facility of the host operating system.

Protected Volumes

RDX docks can be configured as protected volumes that combine the capacity of the RDX media available and will continue to function even if one of the RDX cartridges fails.

RDX Protected Volume

In the QuikStation 4, the RDX Protected Volume combines up to four RDX media into a single protected volume target which continues to function even if one of the RDX cartridges fails. This configuration allows you to manage a single protected volume comprised of one or more of the RDX media in your system with one-disk fault tolerance. The Protected Volume must contain at least three disks.

In the QuikStation 8 the RDX Protected Volume combines up to eight RDX media into a single protected volume target which continues to function even if two of the RDX cartridges fail. This configuration allows you to manage a single protected volume comprised of four or more of the RDX media in your system with two-disk fault tolerance. In addition, the QuikStation 8 also supports two four-disk Protected Volumes with one-disk fault tolerances.

An RDX Protected Volume may be presented to the host as either a fixed disk or as an RDX device.

> NOTE: Adding fault protection to a volume requires some data redundancy. The loss of storage capacity may be roughly estimated as the capacity of the fault tolerated disks in the volume. When creating an RDX Protected Volume the size of the available space is dependent on the size of the smallest disk used to create the volume. It is strongly advised to use disks which are all the same size to create the protected volume.

RDX Fixed Protected Volume

The Fixed Disk RDX Protected Volume is presented as fixed disk to the host computer. This means that the host computer will not expect the disk to be removed. The user interface software will not allow the protected volume to be ejected while it has an iSCSI connection to a host.

The Fixed Disk RDX Protected Volume may have faster write times than the Removable Disk RDX Protected Volume for some host operating systems.
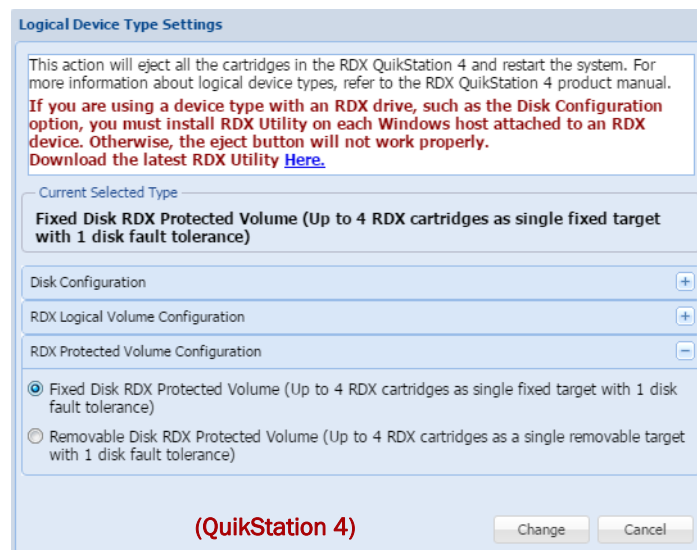
In the QuikStation 8, you can configure two Fixed Disk RDX Protected Volumes with one-disk fault tolerances. Each volume consists of up to four RDX cartridges either on the top or the bottom row. In addition, you can configure a single Fixed Disk RDX Protected Volume with two-disk fault tolerance consisting of up to eight RDX cartridges.
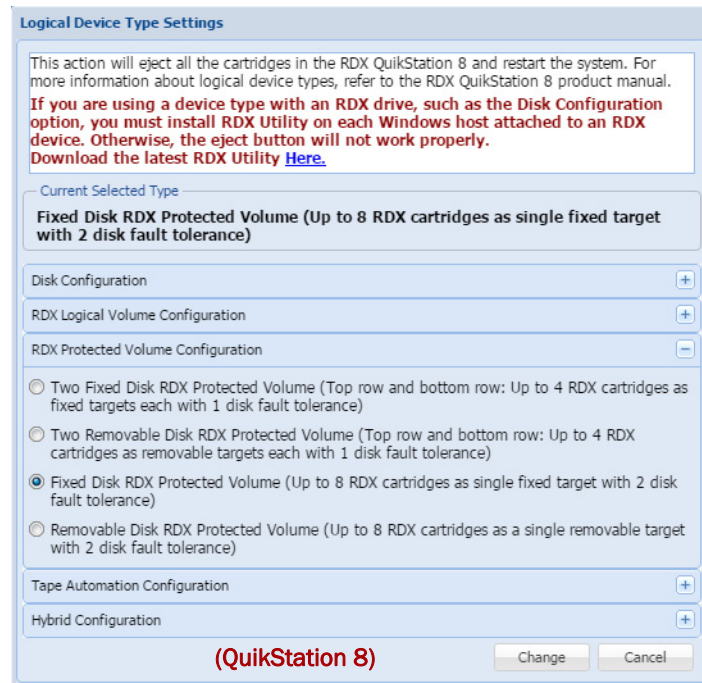

RDX Removable Protected Volume

The Removable Disk RDX Protected Volume is presented as an RDX removable disk to the host computer. This means that the host computer expects that the disk may be removed. The host operating system may allow ejection of the device from the host. The user interface software will allow the protected volume to be ejected while it has an iSCSI connection to a host as long as the host software has allowed the removal.

When the RDX Protected Volume is ejected, all RDX cartridges in the protected volume are ejected.

The Removable Disk RDX Protected Volume may have slower write times than the Fixed Disk RDX Protected Volume for some host operating systems.

Since the RDX Protected Volume is presented as an actual RDX device, it will work with any host software that can utilize an RDX dock.

> **NOTE:** If you select the RDX Removable Protected Volume configuration, you should first install the RDX Manager, which is available from www.tandbergdata.com. A link is also provided in the Protected Device Type Settings dialog.

The Removable Disk RDX Protected Volume is presented as a single RDX device. Even if no protected volume is present in the system, an RDX dock device will be available to the host iSCSI initiator. In this case the virtual dock will appear to be empty.

In the QuikStation 8, you can configure two Removable Disk RDX Protected Volumes. Each volume consists of up to four RDX cartridges either on the top or the bottom row.

Creating a Protected Volume

If no protected volume is currently present, you can create a protected volume:

1. From the **Logical Device** tab, select an available **disk**
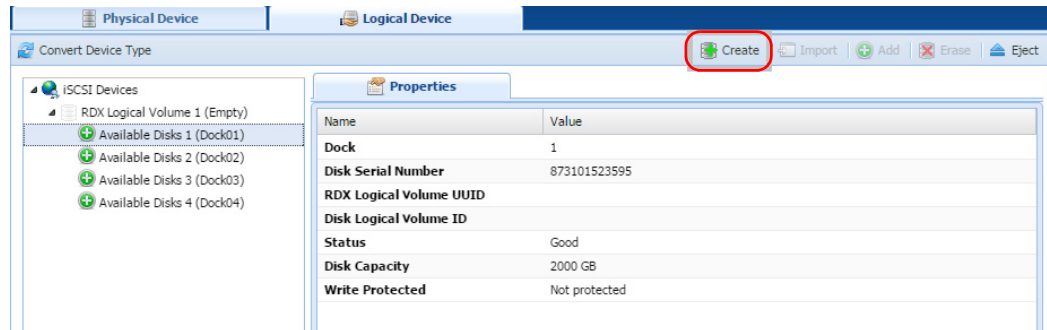
2. Click **Create** to open the **Create a Protected Volume Array** dialog.
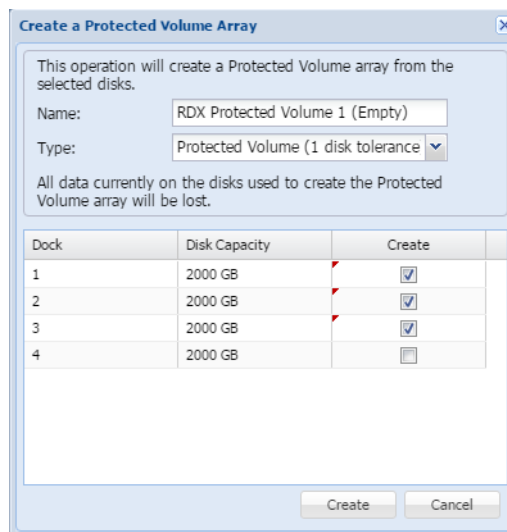
The **Create a Protected Volume Array** dialog allows you to select which available disks to use to create the protected volume.

NOTE: Write-protected and damaged media are not allowed in this operation.

3. Select the **docks** to use in the protected volume, and click **Create**.

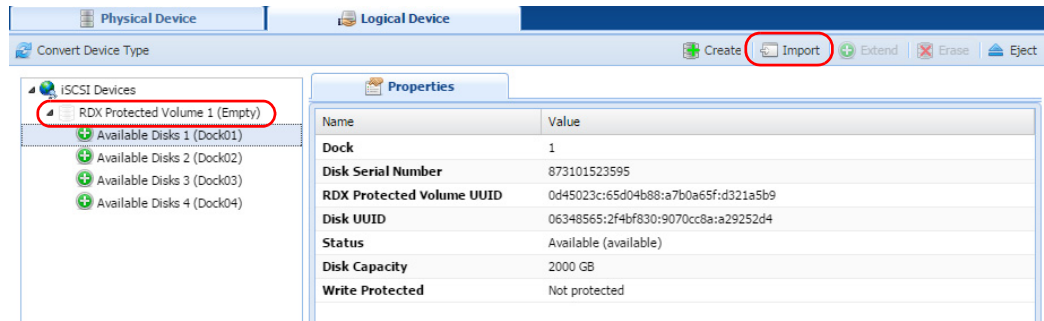## Importing a Protected Volume

If no protected volume is currently present, you can also import a protected volume created on this or another RDX QuikStation.

1. Insert all **RDX media** belonging to this protected volume.

2. From the **Logical Device** page, select **one** of the available disks that has a Protected Volume UUID, and click **Import**.

3. At the **Import Protected Volume Array** dialog, click **Import** to accept the import operation.

The protected volume is ready to use.

Expanding a Protected Volume

If the protected volume contains fewer than the maximum number of disks, you can expand it.

NOTE: The logical volume must be disconnected from any iSCSI host prior to adding available disks to the logical volume.

1. Select an available **disk** and click the **Extend** button.
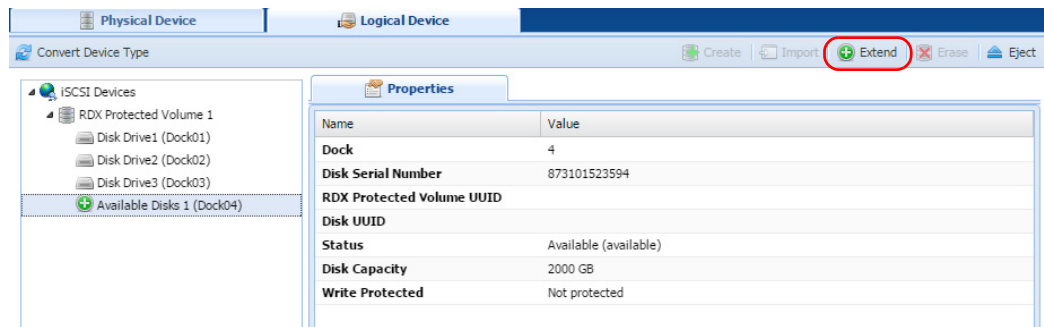
The Extend dialog allows you to select which available disks to add to the protected volume.

NOTE: Write-protected and damaged media are not allowed in this operation.

2. Select the **disks** to be added by checking the **Add** boxes.

3. Click **Add Disks** to complete the process.

Once the protected volume has been expanded, the iSCSI host is responsible for expanding the file system on the volume to take advantage of the extra space. How this is accomplished is dependent on the host operating system. Refer to the administrator's guide for your operating system.

Expanding a Fixed Logical Volume File System for a Window Host
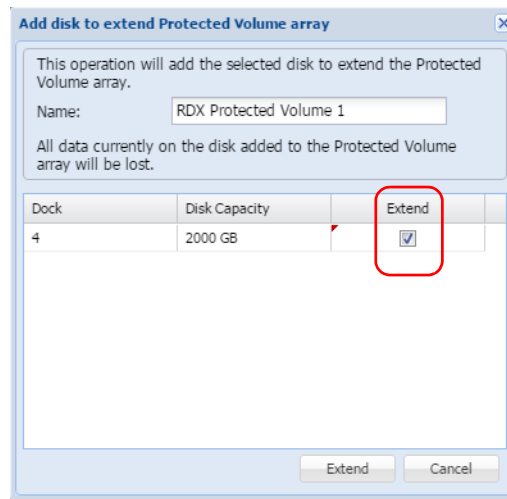
When one or more disks are added to an existing RDX Logical Volume, the file system on that logical volume is not enlarged. That must be done by the host file system handler.

For a Windows host, the file system on an RDX Fixed Logical Volume can be expanded as described below. Expanding the file system leaves all current data on the volume intact.

For a Windows host:

1. Use the **iSCSI initiator** to reconnect to the **expanded volume**.

2. Open the **Disk Management** tool.

3. Right-click the **logical volume** and select **Extend Volume**.

4. In the **Extend Volume Wizard**, use the **defaults** to fully extend the file system by clicking **Next**.

The extension is completed.

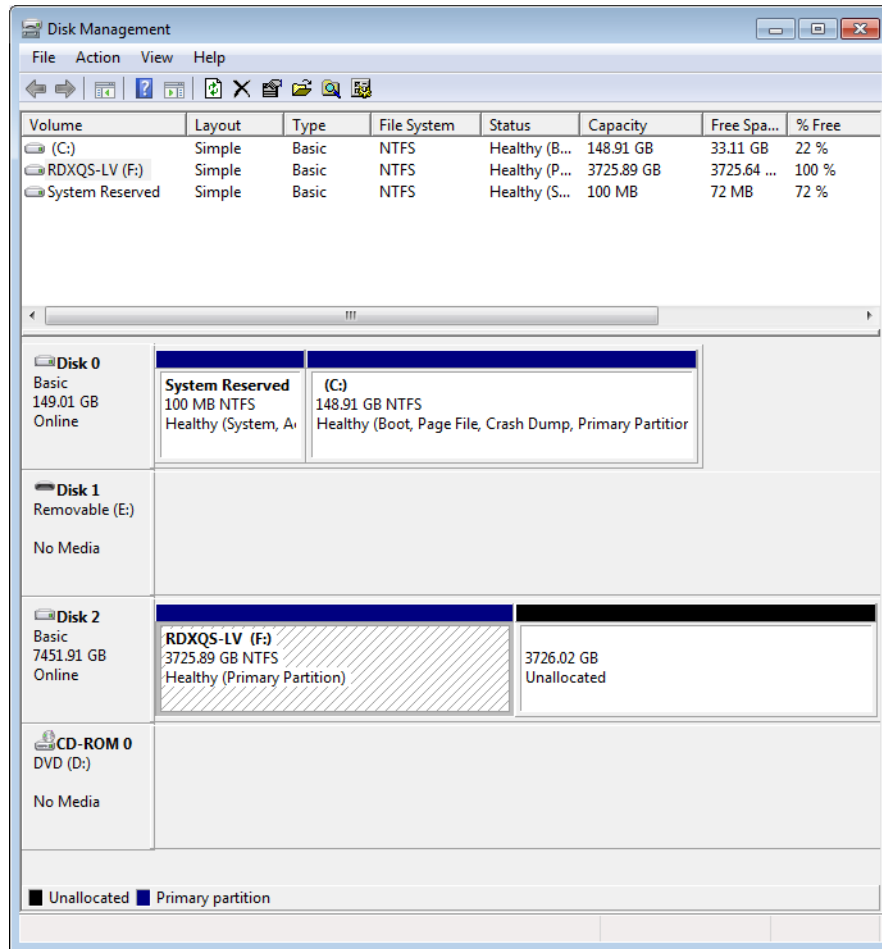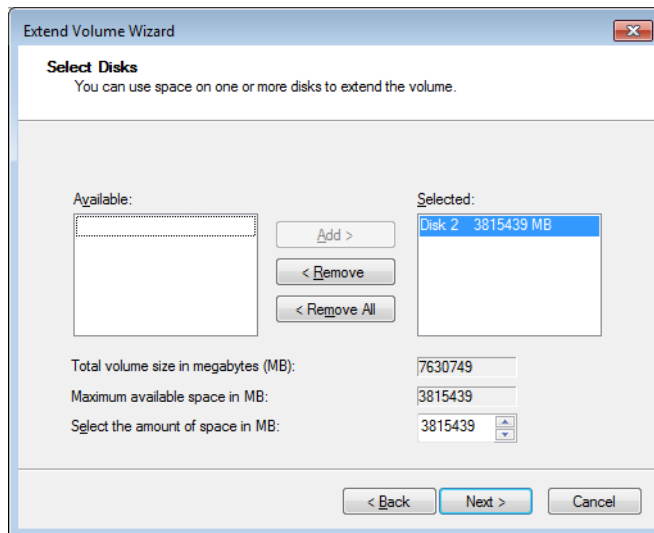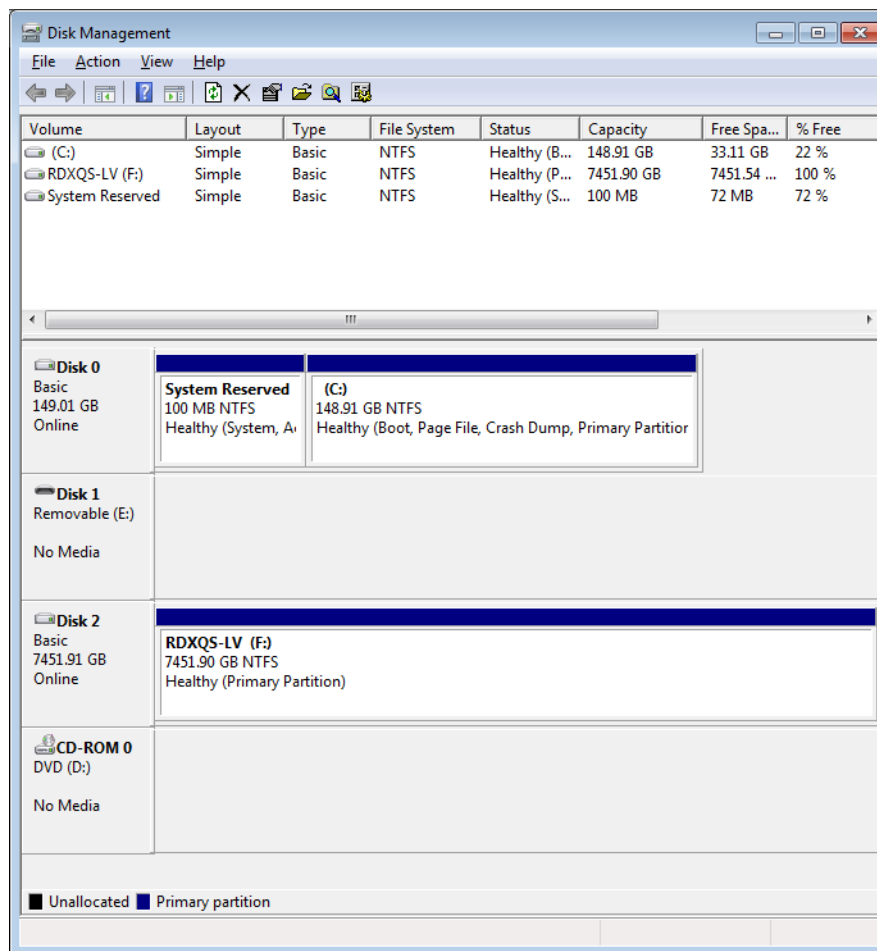## Expanding a Removable Logical Volume File for a Windows Host

When one or more disks are added to an existing RDX Logical Volume, the file system on that logical volume is not enlarged. That must be done by the host file system handler.

Windows does not allow extension of a removable disk. Therefore the following procedure must be followed to extend a Removable RDX Logical Volume.

1. Disconnect the host **iSCSI initiator** from the Removable RDX Logical Volume.

2. Add **one or more disks** to the Removable RDX Logical Volume from the User Interface.

3. Use **Convert Device Type** to convert the RDX QuikStation to **Fixed Disk RDX Logical Volume**.

4. Import the **RDX Logical Volume** in the **Logical Device** pane of the User Interface.

5. Clear the **IQN** of the Removable RDX Logical Volume.
    The Fixed RDX Logical Volume will have a different **IQN** than the Removable RDX Logical Volume, so the old IQN must be cleared from the initiator first.

6. Connect the **host iSCSI initiator** to the Fixed RDX Logical Volume.

7. Follow the instructions in "Expanding a Fixed Logical Volume File System for a Window Host" on page 75.

8. Disconnect the **host iSCSI initiator** from the Fixed RDX Logical Volume.

9. Use **Convert Device Type** to convert the RDX QuikStation to **Removable Disk RDX Logical Volume**.

10. Import the **RDX Logical Volume** in the **Logical Device** pane of the User Interface.

11. Clear the **IQN** of the Fixed RDX Logical Volume.

    The Removable RDX Logical Volume will have a different **IQN** than the Fixed RDX Logical Volume, so the old IQN must be cleared from the initiator first.

12. Connect the **host iSCSI initiator** to the Removable RDX Logical Volume.

Erasing a Protected Volume

The entire protected volume may also be erased using the **Erase** button.

NOTE: The protected volume must be disconnected from any iSCSI host prior to erasing the protected volume.

To erase an entire protected volume:

1. From the **Protected Device** dialog, select the **protected volume** and click **Erase**.

    The **Remove all Protected Volume Array information dialog** is shown.
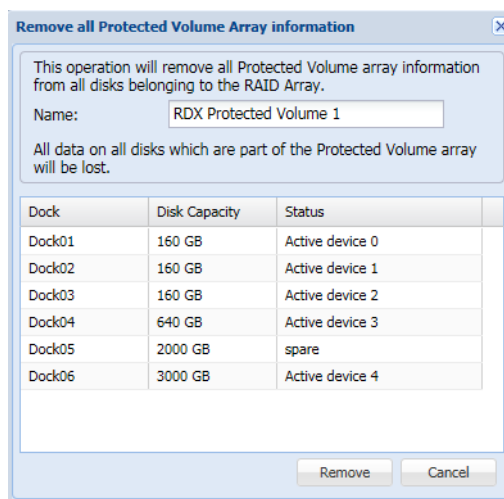
2. Click **Remove**.

    Once all protected volume information is removed, all disks will be shown as **Available Disks**.

    NOTE: If you need a secure data erase, please use tools designated for that purpose. Actual data is not erased on the RDX Media, only the partition table on the disk and LVM metadata.
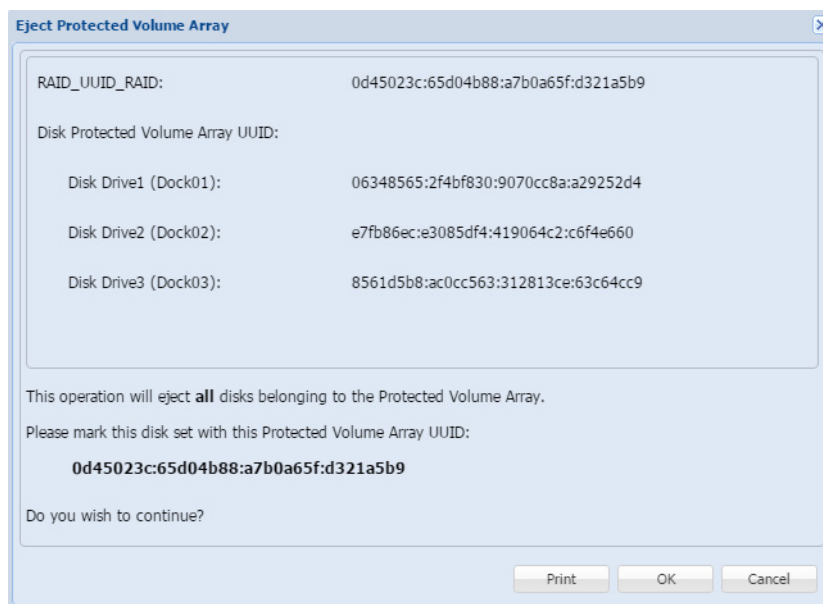
Exporting the Protected Volume

NOTE: The protected volume should be disconnected from any iSCSI host prior to ejecting the protected volume.

A RDX Protected Volume can be exported by using the protected volume **Eject** option.

NOTE: For a Removable Disk RDX Protected Volume, you can also export the protected volume by using the 'eject' facility of the host operating system.

1. From the **Protected Device** interface, select the **protected volume** to export and select **Eject**.

   The **Eject Protected Volume Array** dialog is shown.

2. To create a copy of the **Eject Protected Volume Array** dialog information to keep with the protected volume disk set after it is ejected, click **Print**.

3. Click **OK** to confirm the ejection.

Once the protected volume disks have been ejected, they should be carefully marked and kept as a set. The disk set, if complete, can be imported into this or any other RDX QuikStation later.

When a RDX Protected Volume is ejected, the **Protected Devices** list shows no protected volumes and is marked as (**Empty**).
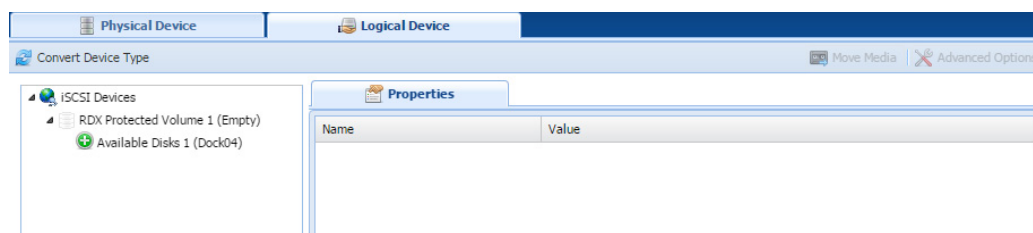
Recovering a Degraded Protected Volume

If a protected volume disk has failed, and the volume is in 'Degraded' status, you may restore the volume to full functionality by replacing the faulty disk.

1. Remove the **faulty disk** from the QuikStation.

2. Put a **new disk** of equal (or greater) size in the QuikStation

3. From the **Protected Device** interface, select the **new disk,** and click **Add**.
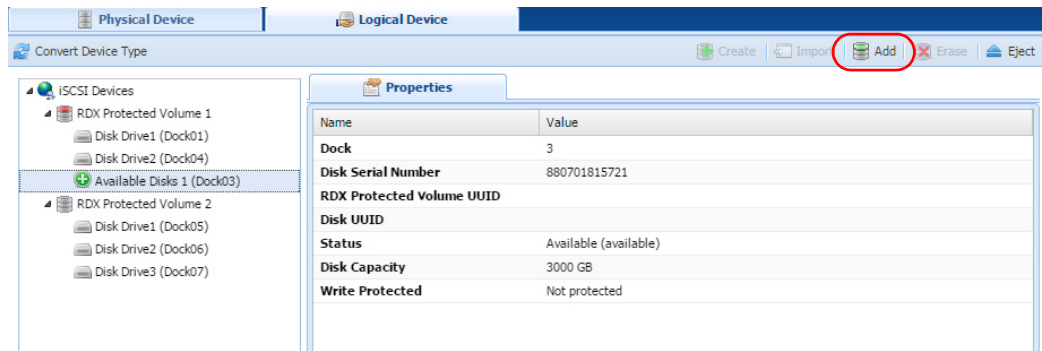
NOTE: Write-protected and damaged media are not allowed in this operation.

4. At the **Add disk to repair a degraded Protected Volume array** dialog, select the **disk** being added.
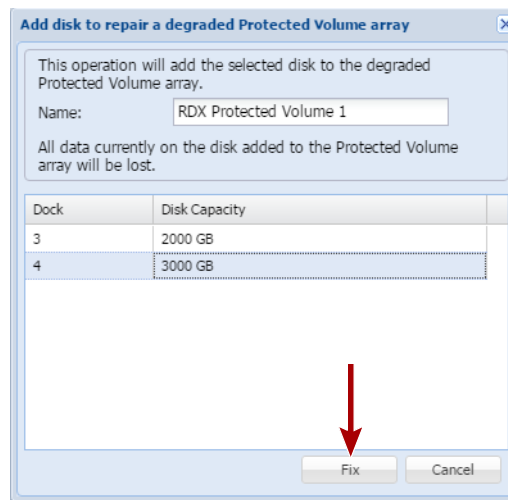
5. Click **Fix** to begin the recovery process.
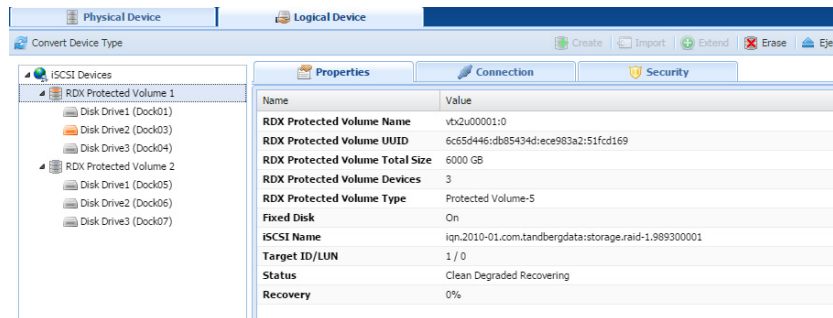
The recovery process may take a considerable amount of time but the protected volume may be used while the rebuilding proceeds. Once recovery is complete, the protected volume will no longer be degraded.

NOTE: Only one disk may be added to a degraded **Protected Volume** at a time.

Disk Autoloader

When the QuikStation is configured as a **Disk Autoloader**, the host will primarily see an iSCSI removable disk target. When the host software ejects an RDX medium from the disk target, the autoloader will virtually "move" the next disk into the disk target. The disk target will become ready and the host software can continue operation.

Depending on the setting of the **Autoloader Continuous Rotate** option, the host ejection of RDX media can cause a physical ejection or simply a logical removal.

The autoloader is also presented as an iSCSI target. However, there is no need for the host to interact with this device since normal logical motions are handle by the autoloader independently. The autoloader iSCSI target is presented mainly for diagnostic purposes.

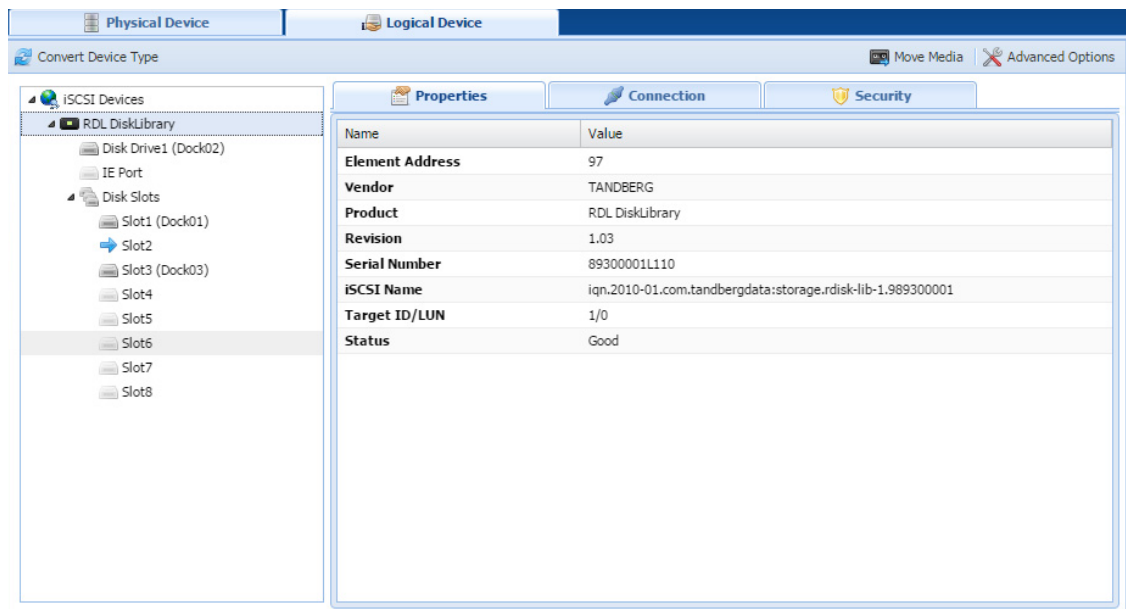In the Logical Device tab, the home slot for the currently loaded disk is indicated with a blue arrow (➡).

If the **Autoloader Continuous Rotate** option is OFF, when the disk is instructed to eject, the medium is physically ejected, and the next disk below the ejected one is logically loaded.

If the **Autoloader Continuous Rotate** option is ON, when the disk is instructed to eject, the medium is logically ejected and remains in place. The next disk below the ejected one is logically loaded. When the last disk has been logically ejected, the first disk is again logically loaded.

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

- View Logical Properties for Autoloaders
- View Active iSCSI Connections Autoloaders
- Set iSCSI Security
- Logical Device Type
- Move a Cartridge
- Set the Autoloader Option

View Logical Properties for Autoloaders

The following properties are displayed for virtual autoloaders:

Property Name	Description
For the autoloader and its tape drives	
Element address	The element address associated with the virtual location of the autoloader and drives.
Vendor	The vendor name for the autoloader and its drives. For example, the vendor name for a disk autoloader is "TANDBERG," and the vendor name for the RDX device is "TANDBERG"
Product	The product name for the virtual disk autoloader and drives. For example, the disk autoloader product name is "RDX Disk Library". For the RDX virtual dock, the product name is "RDX."
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 autoloader device and its drive targets. 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 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 disk slots	
Element Address	The element address associated with the virtual location of the disk autoloader slots. The element address correlates to the RDX dock number.
Media label	The default media label is derived from the last eight digits of the RDX cartridge serial number.
Media state	The media state displays either **loaded** or **unloaded** depending on how the drive is set in your backup application.

View Active iSCSI Connections Autoloaders

See Chapter 6, "View Active iSCSI Connections for iSCSI Devices," on page 89.

> **NOTE:** You can also set iSCSI security from the iSCSI Management dialog window. See Chapter 3, "Set iSCSI Security," on page 30 for more information.

Move a Cartridge

> **NOTE:** Make sure that you do not have any backup jobs in progress before you logically move a cartridge.

See Chapter 6, "Move a Cartridge," on page 86 for tape libraries.

In most cases, you should rely on your backup program and autoloader to logically move media within the autoloader. This functionality is built into the RDX QuikStation mainly for testing and diagnostic purposes.

Set the Autoloader Option

The following autoloader option 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.

| 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.

Manage Tape Library Configurations

If you have your RDX QuikStation 8 configured as either a virtual tape library or a tape or disk autoloader, you can do these additional tasks from the **Logical Device** interface:

- View Logical Properties for Tape Libraries
- Move a Cartridge
- Set the Unique Inquiry Option
- iSCSI Device General Information
- Customize the iSCSI Devices View
- View Active iSCSI Connections for iSCSI Devices

NOTE: From the System Settings menu, you can set an option to allow auto-insert (import/export functionality) of cartridges. See Chapter 4, "Options for RDX QuikStation," on page 53 for more information.

View Logical Properties for Tape Libraries

The RDX QuikStation 8 can be configured as a tape library with either one or two tape drives. The emulated library will contain eight slots. However, the slots are virtual and, while they normally correspond to the equivalent dock on the QuikStation, there are situations in which this will not be true.
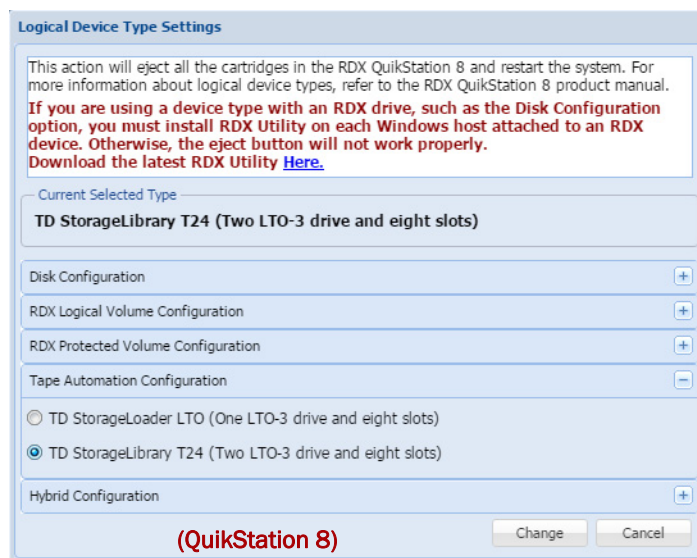
The RDX QuikStation 8 may also be configured as a "hybrid" device. In this case, four docks are used for tape library slots and four are used as RDX docks.

(QuikStation 8 Hybrid Device)
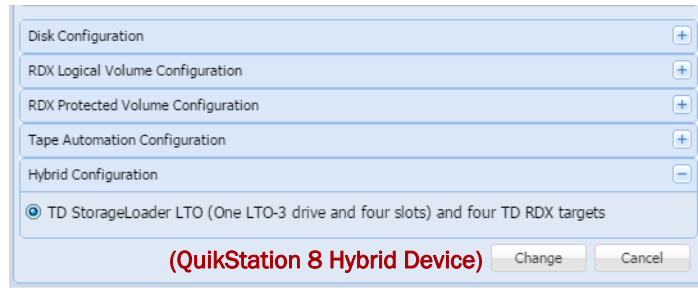
The following logical properties are displayed for virtual tape libraries.

Property Name	Description
For the library and its tape drives	
Element address	The element address associated with the virtual location of the library and drives.
Vendor	The vendor name for the virtual library 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 and drives. For example, the StorageLoader tape library product name is "StorageLoader." For the LTO-3 virtual tape drive, 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 device targets. 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 library 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 slots. The element address correlates to the RDX dock number.
Media label[a]	The default media label is derived from the last six digits of the RDX cartridge serial number and **Ln**, For example, **L3** 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[*]	Displays the percentage of capacity that has been used for the RDX cartridge (or virtual tape cartridge).
	NOTE: Media usage for RDX docks is unavailable. This property is only reported for tape library configurations.

aVisible if the dock has an RDX cartridge inserted.

Move a Cartridge

With RDX QuikStation 8 virtual library configurations, you can logically move a cartridge to an open slot, to the IE port, or to the tape drives.

> **NOTE:** If you move a cartridge to the IE port, the cartridge will be ejected from the dock, and the cartridge is 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.
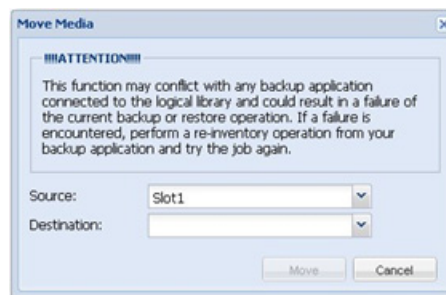
> **NOTE:** Make sure that you do not have any backup jobs in progress before you logically move a cartridge.

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**.
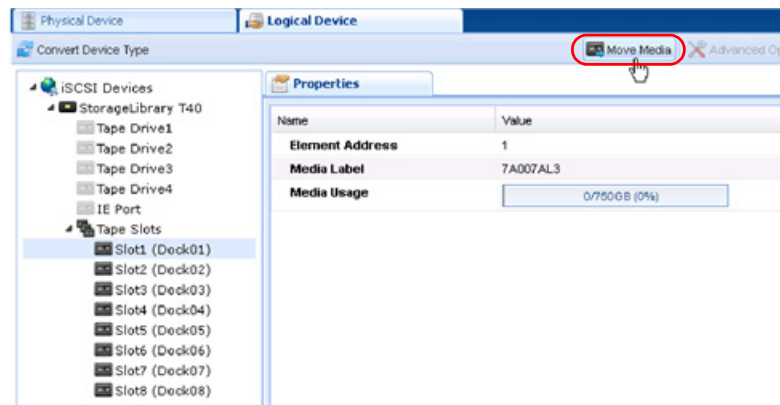
The Move Media dialog window opens.

3. Using the drop-down menus, verify the **Source** slot and select the **Destination** slot.

   The **Source** drop-down menu only displays the slots that contain an inserted cartridge, and the **Destination** drop-down menu only displays empty slots.

4. Click **Move**.

Set 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 unique inquiry string, or an RDX QuikStation inquiry string.

| 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.

iSCSI Device General Information

You can view general information about a logical device's iSCSI targets from the **iSCSI Devices** view.

To view iSCSI Devices, under the **Logical Device** tab, select **iSCSI Devices** from the tree view in the left pane.
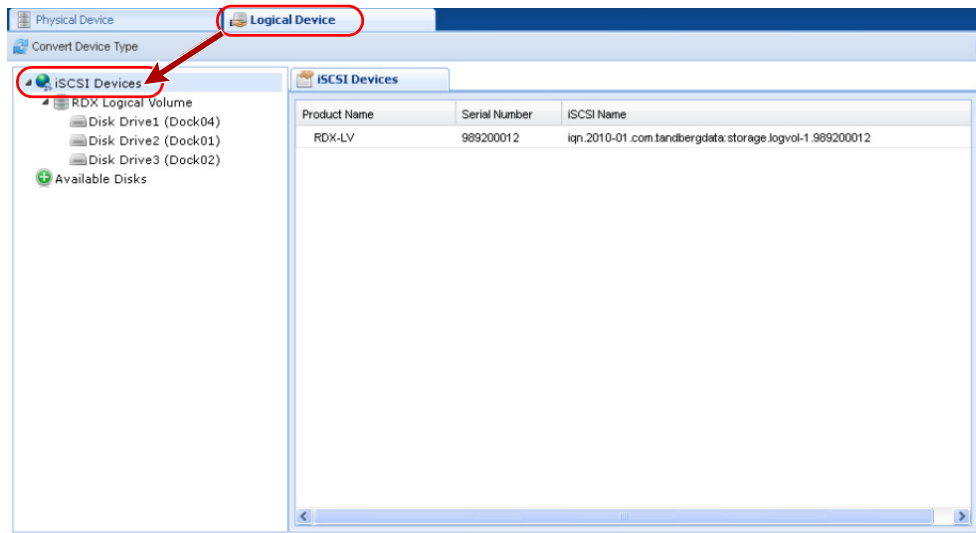
By default, the **iSCSI Devices Properties** window displays information such as the volume name, serial number (UUID), and iSCSI name for the logical device's iSCSI targets.
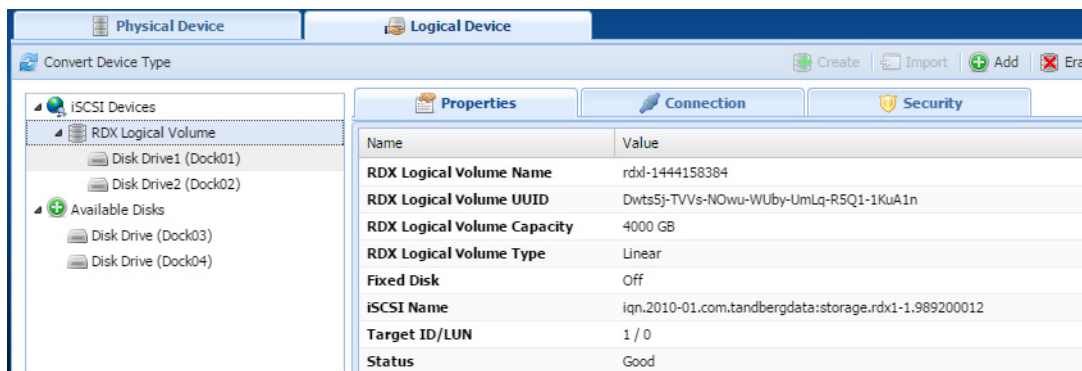
RDX QuikStation RDX Logical Volume logical device properties:

Property Name	Description
RDX Logical Volume Name	Name of the RDX volume.
RDX Logical Volume UUID	Unique identification number of the RDX volume.
RDX Logical Volume Capacity	Total capacity of the logical volume.
Fixed Disk	Provides a presentation to the iSCSI initiator. Fixed disk shown as either On or Off.
iSCSI Name	Displays full iSCSI name.
Target ID/LUN	Shows "`1/0`".
Status	Displays the operating status for the device of either **good**, **offline**, or an error state.
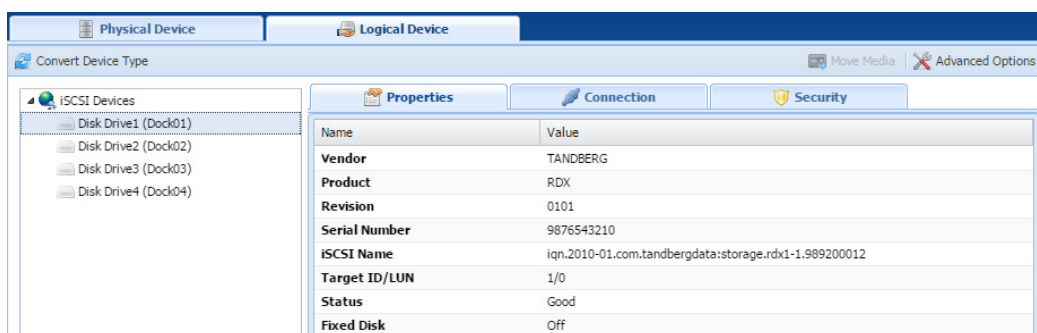
RDX QuikStation RDX dock logical device properties:

Property Name	Description
Vendor	Shows the SCSI Inquiry Vendor ID.
Product	Displays the SCSI Inquiry Product ID.
Revision	Provides the firmware version for RDX dock.
Serial Number	Lists the RDX Dock Serial Number.
iSCSI Name	The iSCSI name that identifies the device and is used to connect the initiators (host computers) to the targets.

Property Name	Description
Target ID/LUN	Shows "**1/0**."
Status	Displays the operating status for the device of either **good**, **offline**, or an error state.
Fixed Disk	Provides a presentation to the iSCSI initiator. Fixed disk shown as either On or Off.
Media Label	The default media label is derived from the last eight digits of the RDX cartridge serial number.
Media State[a]	The media state displays either **loaded** or **unloaded** depending on how the drive is set in your backup application.

aOnly present if media is present in the dock.

Customize 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 down arrow (▼) which appears when you move your mouse over the **Product** or **Serial Number** column head.

# View Active iSCSI Connections for iSCSI Devices

1. From the **Logical Device** interface, select an **iSCSI device 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.
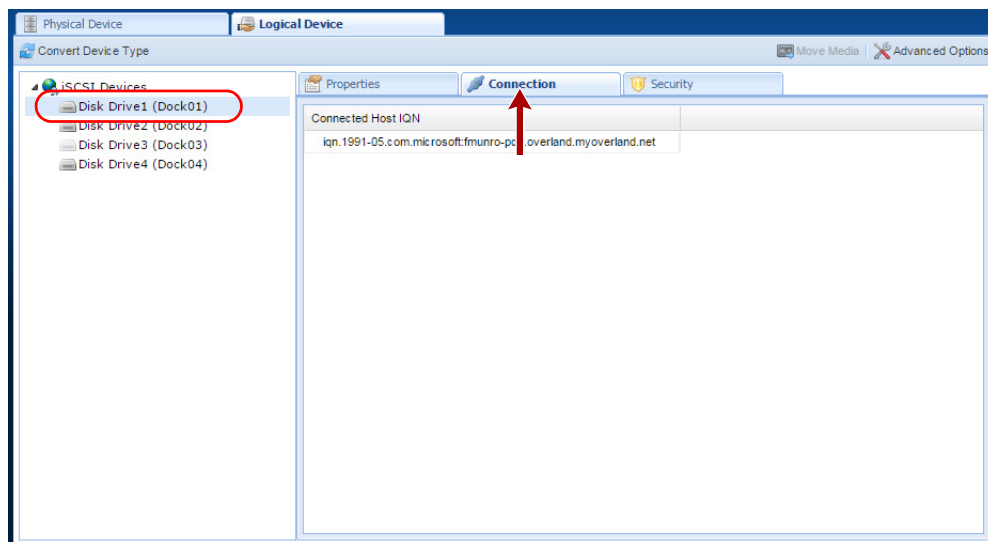
2. Select the **Connection** tab.

If there is a host connected to the target, the host's initiator node name is displayed in the **Connection** window.
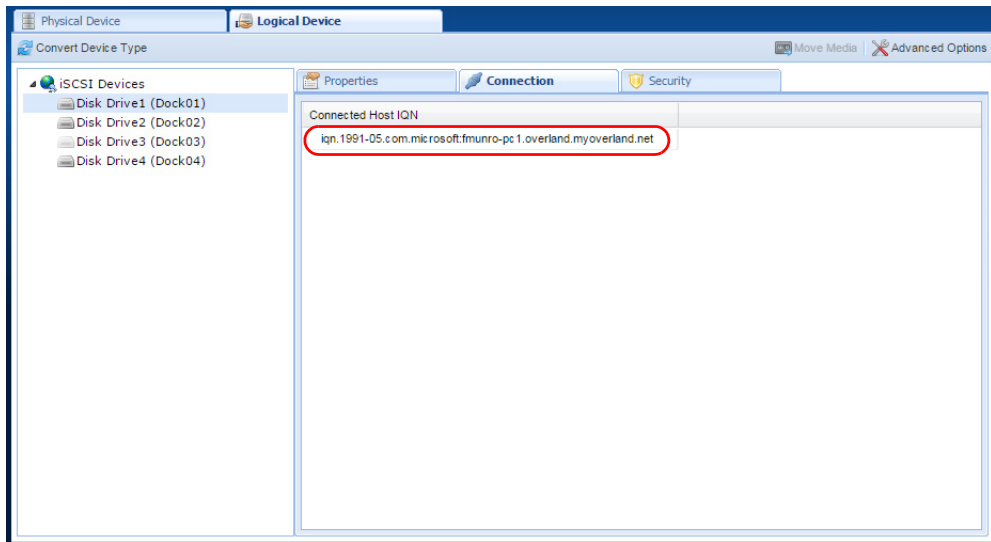
NOTE: You can also set iSCSI security for each iSCSI target. See Chapter 3, "Set iSCSI Security," on page 30 for more information.

7

Physical Device Management

The physical device view is useful for determining the physical location of your RDX media, since logical library views can differ. You can also use the physical device view to force-eject RDX media, erase RDX media, and clone data from one RDX media to another.
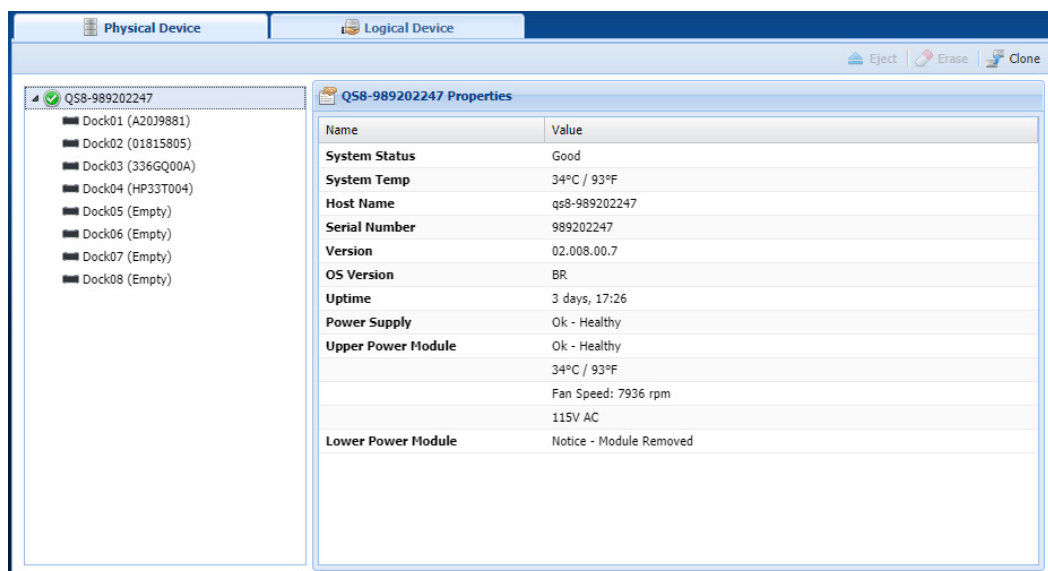
Topics in Setup and Configuration:

- Viewing Physical Device Properties
- Ejecting RDX Media
- Reformatting RDX Media
- Cloning Data

Viewing Physical Device Properties

At the main GUI screen, click the Physical Device tab.

QuikStation Properties

In the left pane of the Physical Device interface, click the RDX QuikStation name. Its properties are shown on the right.
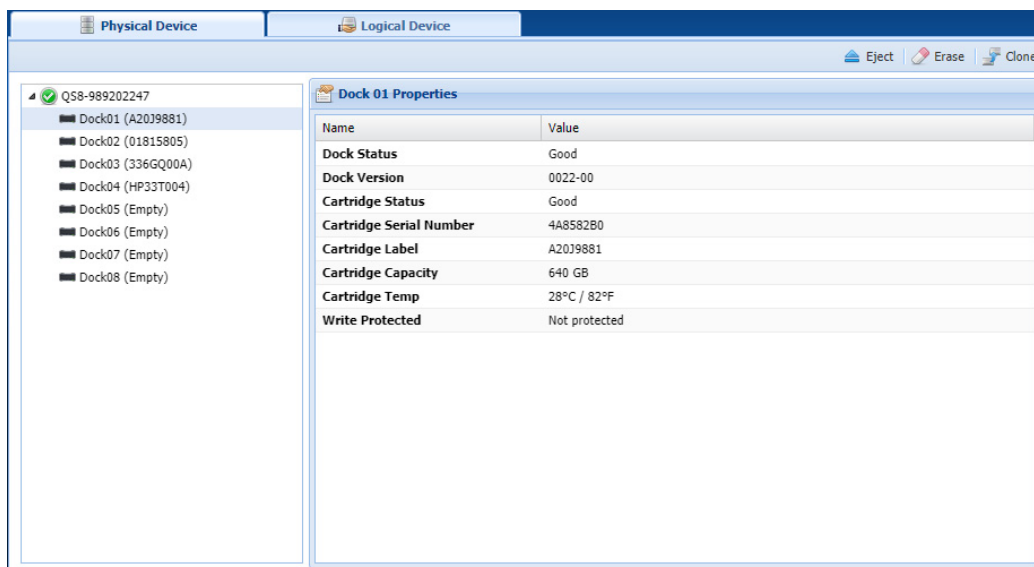

The following QuikStation properties are displayed.

Property Name	Description
System Status	General status of the QuikStation

Property Name	Description
System Temp	Current temperature in both °C and °F
Host Name	Name of the host server
Serial Number	Serial number of the QuikStation
Version	Firmware version installed
OS Version	Operating System version
Uptime	Current running time since the last reboot
Power Supply	Status of the power supply
Upper Power Module	Status of the upper power supply module (alerts, temperature, fan speed, and voltage setting)
Lower Power Module	Status of the lower power supply module (alerts, temperature, fan speed, and voltage setting)

RDX Dock Properties

In the left pane of the Physical Device interface, click a dock's name. Its properties are shown on the right.

The following RDX dock properties are displayed.

Property Name	Description
Dock Version	The RDX dock firmware version.
Cartridge Status	The operating system status for the RDX QuikStation media. The status can either display good or an error state.
Cartridge Serial Number	Serial number of the RDX media.
Cartridge Label	By default, the text is derived from the RDX media serial number.
Cartridge Capacity	Storage size of the RDX media (used and unused).
Cartridge Temp (Celsius)	The current temperature of the inserted RDX media.

| Property Name	Description
Write Protected	Displays information on whether the RDX media is write-protected or not.

Ejecting RDX Media

You can eject an RDX media from the RDX QuikStation GUI. However, with removable disk configurations, unless you first enable the Unsafe Eject option, the request to eject the RDX medium will only be executed if the disk is not connected to an iSCSI host or if the connected host has granted permission to remove the medium. See Chapter 4, "Setting Removable Disk Options," on page 54.

> **NOTE:** Make sure that you do not have any backup jobs in progress before you eject RDX media from the RDX QuikStation GUI.
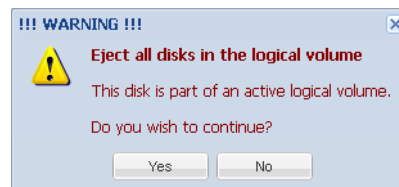
To eject RDX media:

1. From the Physical Device interface, select the **dock** where the RDX media is located.
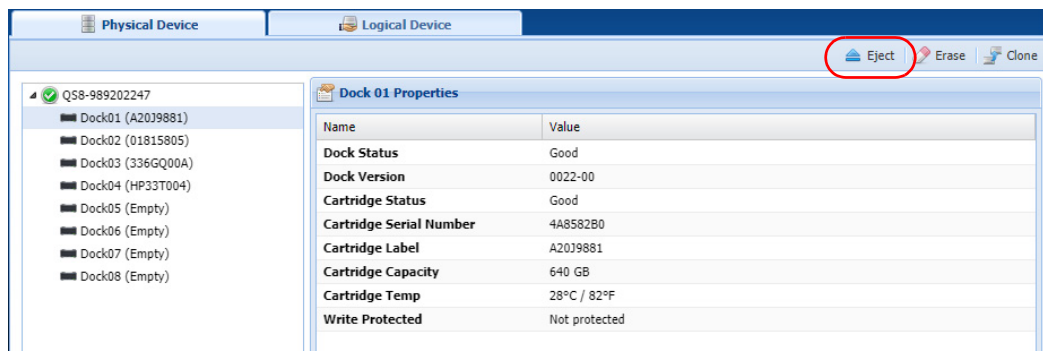
2. On the upper right, click **Eject**.

   The RDX QuikStation ejects the RDX media. The dock displays "Empty" in the tree view.

If the RDX media selected is part of an active logical volume, the following Warning appears:

> ⚠ **CAUTION:** Overland-Tandberg does not recommend ejecting RDX media that is part of an active logical volume.

Reformatting RDX Media

You can reformat RDX media as a single NTFS partition from the RDX QuikStation GUI.

> **NOTE:** You cannot reformat a cartridge in an RDX system if the iSCSI target related to that RDX is connected to a host. You can also not reformat a cartridge that is part of an active logical volume.

To erase an RDX cartridge:

1. From the **Physical Device** interface, select the **dock** where the RDX cartridge is located.
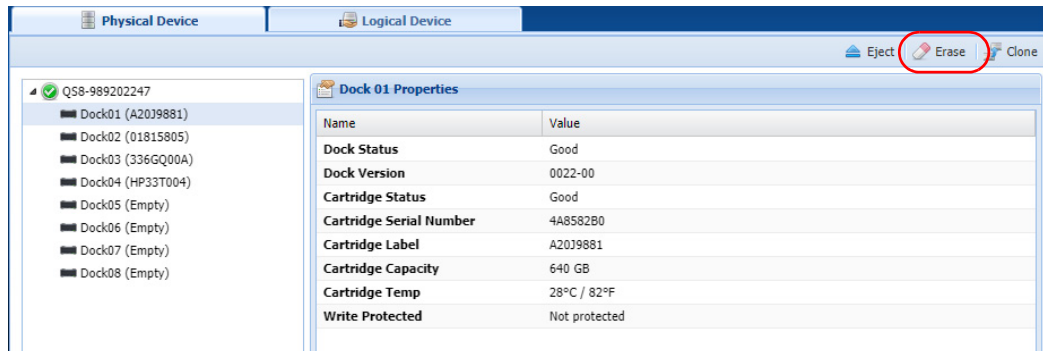
2. On the upper right, click **Erase** and confirm.

Cloning Data

You can copy data from one RDX media to another by using the cloning feature. Disks that are part of an active logical volume may not be used in a cloning operation.

> ⚠ **CAUTION:** Cloning a 3 TB larger cartridge using code that is earlier than v01.002.00 may cause corruption of the destination disk and render it **Not Authorized** and unusable.

The cloning function copies the source RDX media to a destination media, sector by sector, so that the destination media will be an exact image of the source media.

- Cloning will be rejected if the destination media is smaller than the source media.
- If the destination RDX media is bigger, a part of the destination disk would be unreachable after cloning is finished.

> **NOTE:** Disks partitioned with GPT have a backup copy at the end of the media. Using bigger media will misplace that backup copy and might cause a warning in some OS.
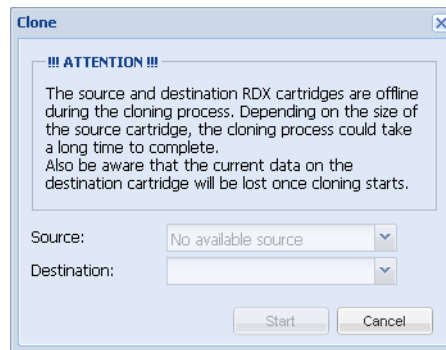
To clone data:

1. Insert both the **source** and **destination** RDX media into available docks on the RDX QuikStation.

2. From the **Physical Device** interface, click **Clone**.
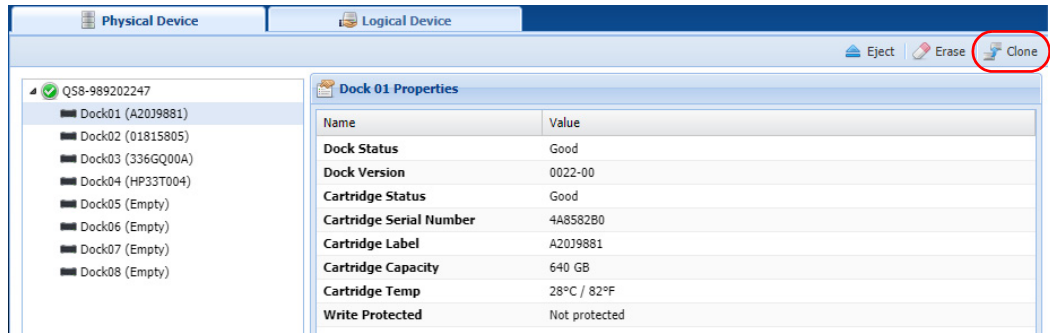

The **Clone** dialog window opens.

3. Select the **Source** RDX media from the drop-down menu.

4. Select the **Destination** RDX media from the drop-down menu.

> NOTE: The iSCSI targets related to the source and destination RDX media 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.

8
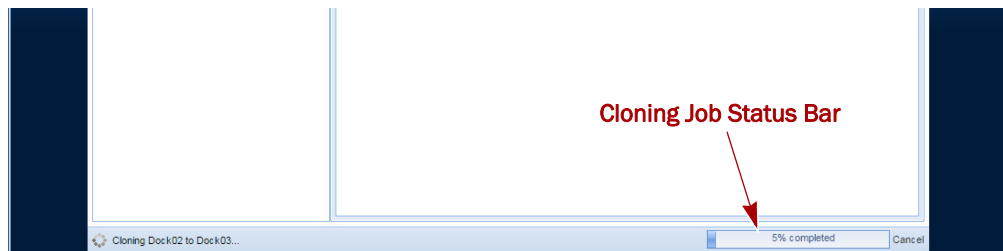
System Maintenance

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

Topics in Setup and Configuration:

- System Maintenance Overview
- Generate System Logs
- Diagnostics Tab Log Options
- RDX QuikStation Restart and Shutdown
- Export RDX QuikStation System Configuration Files
- Import RDX QuikStation System Configuration Files
- Update RDX QuikStation Firmware
- Use a USB Flash Drive for System Tasks
- Use the IPMI Port

System Maintenance Overview

As a user with administrator permissions, the following functions are available from the **System Maintenance** menu.

Menu Name	Description
System Log	Allows you to download system log files to a host computer. These files are encrypted and are meant for Overland-Tandberg 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 shut down of the RDX QuikStation, which is the preferred way to turn off the power to the unit. If you need to do a hard shut down, press and hold the power button on the front of the RDX QuikStation for 10 seconds. **Important:** Before you shut down 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.

Menu Name	Description
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. Overland-Tandberg recommend 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.

Generate System Logs

There are three levels of system logs that may be generated from the RDX QuikStation: **Normal**, **Detail**, and **Extend** (see Chapter 4, "Options for RDX QuikStation," on page 53).

System logs are encrypted and only intended for use by Overland-Tandberg technical support. You do not need to generate a system log unless you are instructed to do so by Overland-Tandberg technical support. Logs may also be generated automatically if some issue is detected by firmware. You will be asked to save them locally and advised to send them to Overland-Tandberg technical support.

To generate a system log:

1. From the main menu, select **System Maintenance > System Log**.

2. Save the **file** to your local host.

   The default location is C:\Users\Administrator\Downloads. Click the folder icon in the confirmation message to go to that folder.

   NOTE: You can also generate a log dump by inserting an empty USB flash drive (formatted with a FAT32 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 "Use a USB Flash Drive for System Tasks" on page 102). Otherwise, the RDX QuikStation will read and process those files instead of generating a system log.
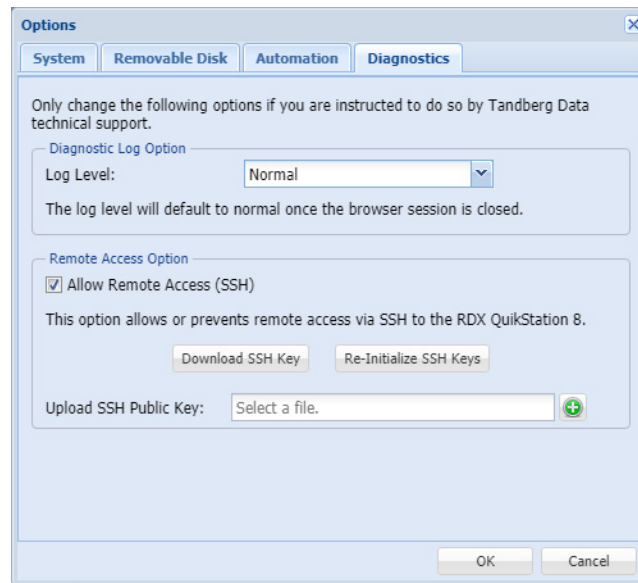
Diagnostics Tab Log Options

When directed to do so by Overland-Tandbergo support, to access the **Diagnostics** tab:

> IMPORTANT: Overland-Tandberg recommends that you change the log level only if you are instructed to do so by Overland-Tandberg Technical Support.

1. From the main menu, select **System Settings > Options**.

2. Select the **Diagnostics** tab.

3. Use the drop-down menu to change the log level to either **Detail** or **Extend**.

NOTE: If you change the log level, the system will default back to **Normal** once the current browser session is closed.

RDX QuikStation Restart and Shutdown

⚠ CAUTION: Before you restart or shut down the system for any reason, make sure there are no active hosts that are currently communicating with the iSCSI targets.

System Restart

1. From the 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 RDX QuikStation interface is active again. You do not have to sign in again to access the system.

System Shutdown

1. From the main menu, select **System Maintenance > System Shutdown**.

2. Click **Yes** to confirm.

If you cannot access the RDX QuikStation, verify that your network infrastructure is up and running and you are using a correct IP address. Contact technical support if you need further assistance.

If the RDX QuikStation is unavailable, you can initiate an OS shutdown by quickly pressing the power button (less than one second).

⚠️ **CAUTION:** If you press and hold power button for more than three (3) seconds, you will immediately cut off the unit's power for a hard power-off without any software shut down. Any non-disconnected iSCSI connection would be terminated. It is strongly advised to avoid using power button as a standard procedure.
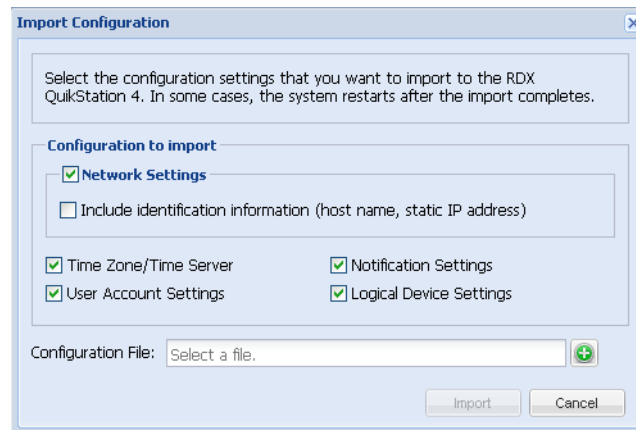
Import RDX QuikStation System Configuration Files

You can only import configuration files generated by an RDX QuikStation. Configuration files from other Overland-Tandberg products are not compatible.

> NOTE: Refer to Export RDX QuikStation System Configuration Files on page 100 for information about exporting configuration files.

To import system configuration files:

1. From the 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 **green plus sign** (⊕) to browse to and select the RDX QuikStation configuration file.

4. Click **Import**.

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

   If the imported file contains different network settings than are currently active, you may have to reopen the browser with the updated RDX QuikStation IP address. Refer to Chapter 2, "Obtain the IP Address," on page 18 to determine the current IP address.

Export RDX QuikStation System Configuration Files

As a best practice, Overland-Tandberg 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 main menu, select **System Maintenance > Export Configuration**.

    The Export Configuration dialog window opens.
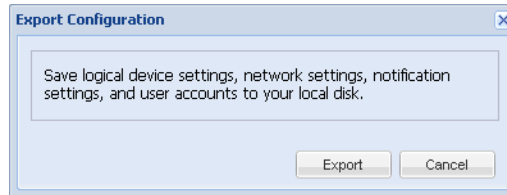
2. Click **Export** to generate the configuration file.

3. Click **OK** to download the file to your local host.

    Note the name and location of the downloaded file. The default location is C:\Users\Administrator\Downloads. Click the folder icon in the confirmation message to go to that folder.

Update RDX QuikStation Firmware

RDX QuikStation firmware can be either automatically or manually updated.

Automatic Firmware Updates

If the **Check firmware update automatically** option is enabled (see Chapter 4, "Options for RDX QuikStation," on page 53), then, when you sign in as an administrator, the RDX QuikStation detects the firmware version and checks if a newer version exists. 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 the new firmware version.
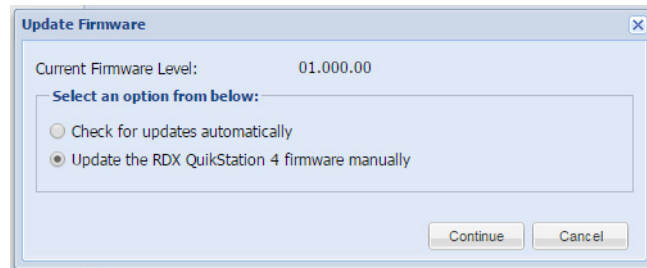
Manual Firmware Updates

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

⚠ **CAUTION:** Before you update the 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 main menu, select **System Maintenance > Update Firmware**.

   The **Update Firmware** dialog window opens.

2. Select **Update the** RDX QuikStation **4/8 firmware manually** and click **Continue**.

   The **Update Firmware** dialog window changes to show a selection field.
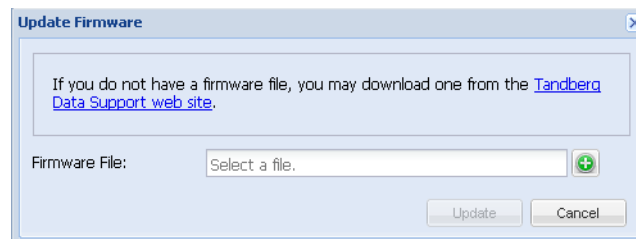
3. Click the **Overland-Tandberg Technical Support website** link to access and download the most current firmware **file**.

   After you download the file from the website, extract the firmware file from the zipped file and upload it to the RDX QuikStation. The firmware file names use the following formats (where "`##.###.##`" is the version number):

   • `vtx#u-##.###.##.fw` for firmware versions < 2.0

   • `quikstation-##.###.##.swu` for firmware versions ≥ 2.0

4. Click the green plus sign ( ) in the dialog window to select the configuration file.

   The firmware (fw) file must be appropriate for your device, either for QuikStation 4 (`vtx1u`) or for QuikStation 8 (`vtx2u`). These code files are not interchangeable. A software upgrade (swu) can be used for either QuikStation.

5. Click **Update**.

6. Click **Yes** to proceed.

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

   NOTE: You can also update firmware by saving the firmware file to a USB flash drive (formatted with a FAT32 file system).
   • For firmware versions **prior to 2.0** (regardless of which model RDX QuikStation you have), rename the firmware file `vtx1u.fw`.
   • For firmware versions **2.0 or later**, rename the file `quikstation.swu`.
   Insert the flash drive into the RDX QuikStation. The RDX QuikStation automatically detects the firmware and updates the system.

Use a USB Flash Drive for System Tasks

The RDX QuikStation ships with a USB flash drive 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 FAT32 file system.

> **NOTE:** The Tandberg Data-supplied USB flash drive might include configuration example files. Change file extensions to ***.example** to make sure the correct action would be performed by RDX QuikStation firmware.

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

System Task	Description
Network information	You can get current active network settings by creating an empty file named **network.info** on USB stick.
	When the flash drive is inserted into the RDX QuikStation, the system automatically writes detailed network information into that text file. Any existing content in that file is erased prior to writing network settings.
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 Chapter 4, "Options for RDX QuikStation," on page 53.
	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 "Update RDX QuikStation Firmware" on page 100.
	Important: Regardless of which model RDX QuikStation you have, name the firmware file **vtx1u.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 an empty **password.reset** file. For more information, see Chapter 4, "Recovering the Built-In Administrator Password," on page 49.
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 "Generate System Logs" on page 97.
	Important: If any of the following files – **network.conf, password.reset, network.info** or **vtx1u.fw** – are loaded onto the flash drive, the RDX QuikStation will not generate a log dump, but will instead read and load the file.

Use the IPMI Port

The Intelligent Platform Management Interface (IPMI) is only available on the RDX QuikStation 4 model with four 1GbE ports (QuikStation 4 Version 2 With Four 1GbE Ports on page 13) and on the RDX QuikStation 8 model with two 10GbE ports (8943-RDX Model on page 16).

> ⚠ **CAUTION:** The IPMI port is also accessed by the RDX QuikStation firmware. Do NOT change or update the IMPI firmware!

The default network configuration for the IPMI port is set for dynamic IP addresses (DHCP).

> ➡ **IMPORTANT:** To protect your system, it is highly recommended that you change the default IPMI user name and password of ADMIN / ADMIN to something unique that only you would know.

A
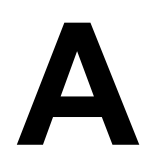
Troubleshooting

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

For more detailed troubleshooting help, visit the Support section of the Tandberg Data website (www.tandbergdata.com), or contact Overland-Tandberg Technical Support at:

https://www.overlandstorage.com/company/contact-us/index.aspx

Basic Troubleshooting Information

The following table describes some basic RDX QuikStation troubleshooting information. If you have a problem that is not addressed in the table below, contact Overland-Tandberg Technical Support.

Problem	Potential Solutions
Can't connect to an iSCSI target.	• Check to see if another host is already connected to the target (see Chapter 6, "View Active iSCSI Connections for iSCSI Devices," on page 89). In many cases, the RDX QuikStation allows only one active host connection per iSCSI target (see Chapter 3, "iSCSI Configuration Overview," on page 22). • Check if any iSCSI security is enabled for the target (see Chapter 3, "Setting iSCSI Security," on page 31). • If the target uses CHAP authentication, make sure the CHAP secret specified for the RDX QuikStation (see Chapter 3, "Enabling CHAP Authentication," on page 31) matches the CHAP secret specified in your iSCSI initiator software. • Refresh the discovered targets in your iSCSI initiator software. This may require restarting the iSCSI initiator.
The RDX QuikStation interface has a "session timeout" error message.	The RDX QuikStation browser interface times out after 30 minutes of inactivity. Click **OK** to return to the sign-in page. Type your user name and password to re-connect to the RDX QuikStation.
RDX dock reports as "empty" when an RDX media is loaded in the dock.	The RDX media may not be seated properly in the dock. Push the RDX media into the dock until you hear it click in place. If this does not work, try re-seating the RDX media by ejecting it and then re-inserting it.
Test email notification is unsuccessful.	If the network is set to a static IP address, make sure that the Default Gateway, Search Domain, and Primary DNS are set correctly so that the email server may be accessed.
Can't access the RDX QuikStation.	• Verify that your network is operating properly. • Verify that you are using a correct IP address.

Reported Error Conditions

The RDX QuikStation reports error conditions of the dock/cartridge with an amber LED and by using email notifications. The emails detail the issue and whether it is the dock or media.

Status	Alerts	Problem
OK (System is functioning)	Dock LED is green.	No problems found.
Broken (Bad RDX Dock)	Dock LED is amber. For QuikStation 8, the "Warning!" symbol is also lit.	Broken or damaged dock.
Degraded (Bad RDX Media)		Broken or damaged cartridge.

B
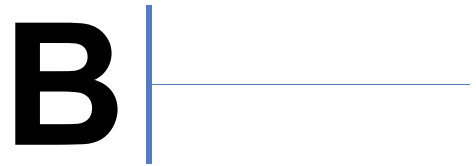
Specifications

This appendix provides the information about the RDX QuikStation specifications.

Topics in Setup and Configuration:

- Physical Specifications
- Power Specifications
- Environmental Specifications
- Safety and Regulatory Agency Compliance

Physical Specifications

The following tables give the physical specifications for the three different RDX models.

QuikStation 4 Desktop Appliance

Part Number	8922-RDX
Dimensions (D x W x H)	48.1cm x 44.0cm x 6.8cm / 18.9in. x 17.3in. x 2.7in.
Weight	9.78 kilograms / 21.6 pounds
Form Factor	Desktop
Capacity	RDX media dependent (online): 4 x 5 TB RDX media.[*] Unlimited offline capacity.
Data Transfer Rate	Up to 200 MB[†]/second across multiple docks (write, uncompressed). See Chapter 4, "Port Configuration Options," on page 43.
Network Connectivity	2 x 1GbE or 4 x 1GbE ports
USB Front Panel Ports	1 USB 2.0 port
USB Rear Panel Ports	2 x USB 2.0 ports
Removable Media Drive	4 x RDX bays
RDX Media Compatibility (Capacity)	Backward and forward to all RDX media of all capacities

* 5 TB cartridge is the largest size available when this product was published; however, the online capacity is only limited by the size of the RDX cartridge available. Please refer to TandbergData.com for current maximum capacity cartridges.

† The data transfer rate is up to 200 MB/second when port configuration is configured for adaptive load balancing or dynamic link aggregation.

QuikStation 4 Rackmount Appliance

Part Number	8920-RDX
Dimensions (D x W x H)	47.8cm x 44.0cm x 4.3cm / 18.8in. x 17.3in. x 1.7in.
Weight	6.02 kilograms / 13.3 pounds
Form Factor	1U rackmount
Capacity	RDX media dependent (online): 4 x 5 TB RDX media.[*] Unlimited offline capacity.
Data Transfer Rate	Up to 200 MB[†]/second across multiple docks (write, uncompressed). See Chapter 4, "Port Configuration Options," on page 43.
Network Connectivity	2 x 1GbE or 4 x 1GbE ports
USB Front Panel Ports	1 USB 2.0 port
USB Rear Panel Ports	2 x USB 2.0
Removable Media Drive	4 x RDX bays
RDX Media Compatibility (Capacity)	Backward and forward to all RDX media of all capacities

[*] 5 TB cartridge is the largest size available when this product was published; however, the online capacity is only limited by the size of the RDX cartridge available. Please refer to TandbergData.com for current maximum capacity cartridges.

[†] The data transfer rate is up to 200 MB/second when port configuration is configured for adaptive load balancing or dynamic link aggregation.

QuikStation 8 Rackmount Appliances

Part Numbers	8930-RDX 8940-RDX 8943-RDX
Dimensions (D x W x H)	47.8cm x 44.0cm x 8.6cm / 18.8in. x 17.3in. x 3.4in.
Weight	14.96 kilograms / 33.3 pounds
Form Factor	2U rackmount
Capacity	RDX media dependent (online): 8 x 5 TB RDX media.[*] Unlimited offline capacity.
Data Transfer Rate	• Up to 400 MB/s (4x 1GbE) across multiple drives. (8930-RDX) • Up to 400 MB/s (4x 1GbE), optional up to 1000 MB/s (1x 10GbE) across multiple drives. (8940-RDX) • Up to 2000 MB/s (2x 10GbE) across multiple drives. (8943-RDX) See Chapter 4, "Port Configuration Options," on page 43.
Network Connectivity	• 4 x 1GbE ports (8930-RDX & 8940-RDX) • 1 x 10GbE ports (8940-RDX) • 2 x 10GbE ports (8943-RDX)
USB Front Panel Ports	1 USB 2.0 port
USB Rear Panel Ports	• 6 x USB 2.0 and 2 x USB 3.0 ports (8930-RDX & 8940-RDX) • 2 x USB 2.0 and 2 x USB 3.0 ports (8943-RDX)

Removable Media Drive	8 x RDX bays
RDX Media Compatibility (Capacity)	Backward and forward to all RDX media of all capacities

* 5 TB cartridge is the largest size available when this product was published; however, the online capacity is only limited by the size of the RDX cartridge available. Please refer to Overland-Tandberg website for current maximum capacity cartridges.

Power Specifications

AC Input Voltage	100-240 VAC
Rated Input Current	2,0 -1,0 A
Rated Input Frequency	50/60 Hz

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%
Altitude	-15 m to 3,048 m (-50 ft to 10,000 ft) (operating) -15 m to 10,660 m (-50 ft to 35,000 ft) (non-operating)

Safety and Regulatory Agency Compliance

Overland-Tandberg products are designed, tested, and classified for their intended electromagnetic environment. The RDX QuikStation 4 is a Class B device and RDX QuikStation 8 is a Class A device and both comply with the safety and regulatory agency standards listed below when installed in accordance with this manual.

For regulatory purposes, the RDX QuikStation 4 regulatory model number is filed as RMN-A-01-14 and the QuikStation 8 regulatory model number is filed as RMN-A-01-16.
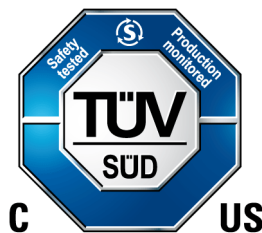
The cTUVus mark for both the RDX QuikStation 4 and 8 demonstrates that they have met the requirements of UL62368-1.

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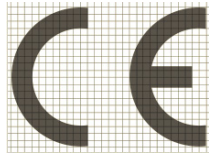
This Information Technology Equipment has been tested and found to comply with the following European directives:

RDX QuikStation 4:

  EN 55032:2015, Class B

  EN 61000-3-2:2014

  EN 61000-3-3:2013

  EN 55035:2017

  EN 60950-1:2006 +A2:2013

  EN 62368-1

  EN 50581:2012

RDX QuikStation 8:

  EN 55032:2015, Class A

  EN 61000-3-2:2014

  EN 61000-3-3:2013

  EN 55035:2017

  EN 60950-1:2006 +A2:2013

  EN 62368-1

  EN 50581:2012

Waste of Electronic and Electrical Equipment (WEEE)

This device is in compliance with 2012\19\EU Waste of Electronic and Electrical Equipment (WEEE).

Australia and New Zealand

RDX QuikStation 4:

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to the Australian/New Zealand standard AS/NZS CISPR32:2015 and EN 55032:2015 - Electromagnetic compatibility of multimedia equipment - Emission requirements set out by the Australian Communications Agency.

RDX QuikStation 8:

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 CISPR32:2015 and EN 55032:2015 - Electromagnetic compatibility of multimedia equipment - Emission requirements set out by the Australian Communications Agency.

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".

Japan

RDX QuikStation 4:

　この装置は、クラスB機器です。この装置は、住宅環境で使用することを目的
としていますが、この装置がラジオやテレビジョン受信機に近接して使用され
ると、受信障害を引き起こすことがあります。
　取扱説明書に従って正しい取り扱いをして下さい。　　　　　VCCI－B

Translation: This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

RDX QuikStation 8:

　この装置は、クラスA機器です。この装置を住宅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.

Korea

이 기기는 업무용(A급) 전자파적합기기로서 판 매자 또는 사용자는 이 점을 주의하시기 바라 며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

Translation: This equipment is Industrial (Class A) electromagnetic wave suitability equipment and seller or user should take notice of it, and this equipment is to be used in the places except for home.

United States: FCC Declaration of Conformity

RDX QuikStation 4:

We declare under our sole responsibility that:

Product Name: RDX QuikStation 4, regulatory model RMN-A-01-14.

To which this declaration relates, is in conformity with the following standards or other normative documents:

- ANSI C63.4-2009 Methods of Measurement
- Federal Communications Commission 47 CFR Part 15, Subpart A/B: 2013

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit difference from that to which the receiver is connected.
- Consult the dealer on an experienced radio/TV technician for help.

RDX QuikStation 8:

We declare under our sole responsibility that:

Product Name: RDX QuikStation 8, regulatory model RMN-A-01-16

To which this declaration relates, is in conformity with the following standards or other normative documents:

- ANSI C63.4-2009 Methods of Measurement
- Federal Communications Commission 47 CFR Part 15, Subpart B: 2013

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with 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.

C

Safety Guidelines

This appendix provides safety guidelines for the RDX QuikStation.

Topics in Setup and Configuration:

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 (Tmax) specified by the manufacturer (40° C / 104° 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 rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (for example, use of power strips).
- Never place objects on top of rack-mounted 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 outlets. 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 plugs from the outlets. 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 anti-static 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 printed circuit boards.

Battery Precautions

- Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery, that can result in an explosion.
- Leaving a battery in an extremely high temperature surrounding environment that can result in an explosion or the leakage of flammable liquid or gas.
- A battery subjected to extremely low air pressure that may result in an explosion or the leakage of flammable liquid or gas.
- Replacement of a battery with an incorrect type that can defeat a safeguard.

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