Dell™ Remote Console Switch
Software User's Guide

Notes

NOTE: A NOTE indicates important information that helps you make better use of your computer.

Third Party Software. You acknowledge that the SOFTWARE PRODUCT may contain or be provided with copyrighted software of Dell's suppliers as identified in associated documentation or other printed or electronic materials ("Third Party Software") which are obtained under a license from such suppliers. Your use of any such Third Party Software shall be subject to and you agree to comply with the applicable restrictions and other terms and conditions set forth in such documentation or materials as set forth in any "Third-Party Licenses ReadMe" file or similar file located in the installation directory for the SOFTWARE PRODUCT.

Any open source software is distributed in the hope that it will be useful, but is provided "as is" without any expressed or implied warranty; including but not limited to the implied warranty of merchantability or fitness for a particular purpose. In no event shall Dell, the copyright holders, or the contributors be liable for any direct, indirect, incidental, special, exemplary, or consequential damages (including, but not limited to, procurement of substitute goods or services; loss of use, data or profits; or business interruption) however caused and on any theory of liability, whether in contract, strict liability, or tort (including negligence or otherwise) arising in any way out of the use of this software, even if advised of the possibility of such damage.

Reproduction of these materials in any manner whatsoever without the written permission of Dell Inc. is strictly forbidden.

Trademarks used in this text: *Dell*, the *DELL* logo, and *OpenManage* are trademarks of Dell Inc.; *Intel Pentium* is a registered trademark of Intel Corporation in the U.S. and other countries; *Microsoft*, *Windows*, and *Windows Vista* are either trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries; *Avocent* is a registered trademark of Avocent Corporation or its affiliates in the US and other countries; *Red Hat* and *Red Hat Enterprise Linux* are registered trademarks of Red Hat, Inc. in the United States and other countries; *SUSE* is a registered trademark of Novell, Inc., in the United States and other countries; *VMware* is a registered trademark or trademark (the "Marks") of VMware, Inc. in the United States and/or other jurisdictions. Other trademarks and trade names may be used in this publication to refer to either the entities claiming the marks and names or their products. Dell Inc. disclaims any proprietary interest in trademarks and trade names other than its own.

Contents

Using the Viewer 63

1

Product Overview

The Dell™ Remote Console Switch (RCS) software is a cross-platform management application that allows you to view and control the switches and all attached servers. The cross-platform design ensures compatibility with most popular operating systems and hardware platforms. The RCS software provides secure switch-based authentication, data transfers, and username/password storage. Each switch handles authentication and access control individually for more decentralized system control.

The RCS software utilizes Explorer-like navigation with an intuitive split-screen interface, providing you with a single point of access for your entire system. From here, you can manage your existing switches, install a new switch, or launch a video session to a system server. Built-in groupings such as Servers, Sites, and Folders provide an easy way to select the units to view. Powerful search and sort capabilities allow you to easily find any unit.

Features and Benefits

The RCS software is designed for easy installation and operation. Auto-discovery of managed switches enables you to install new units in minutes. Wizard-based installation and online help simplify initial system configuration. The intuitive graphical interface makes managing and updating switches simple and straightforward.

Powerful Customization Capabilities

You can tailor the RCS software to fit your specific system needs. Take advantage of built-in groups or create your own. Customize unit and field names

and icons for maximum flexibility and convenience. Using names that are meaningful to you makes it easy to quickly find any system unit.

Extensive Remote Console Switch Management

The RCS software allows you to add and manage multiple switches in one system. Once a new switch is installed, you can configure switch parameters, control and preempt user video sessions, and execute numerous control functions, such as rebooting and upgrading your switch. The RCS software is designed to be compatible with the Dell OpenManage™ IT Assistant Event Viewer, allowing system administrators to consolidate system event reports. You can enable Simple Network Management Protocol (SNMP) traps, configure target devices, and manage user databases.

You can use the software to manage the following Dell switches:

- 4322DS
- 2162DS
- 1082DS
- 2161DS
- 2321DS
- 4161DS
- 2161DS-2
- 1081AD
- 2161AD

NOTE: For Dell 1081AD and 2161AD switches, the Dell Remote Access Key (RAK) is required for the switches to be added/managed through the RCS.

Authentication and Authorization

The RCS software allows permissions for multiple Remote Console Switches to be managed through a single interface rather than individually on each Remote Console Switch. For increased security and efficiency, the Lightweight Directory

Access Protocol (LDAP) feature eliminates the need to update access permissions in individual Remote Console Switches by drawing permissions from a single network-wide authentication source.

The Remote Console Switch can authenticate using the standard Active Directory schema, or the Dell Extended Schema in order to maximize compatibility with all of your Dell hardware.

NOTE: Dell 1081AD and 2161AD switches do not support LDAP.

System Components

The software contains the following major components.

RCS Explorer Window

The RCS Explorer window is the primary point of control for accessing the software features and functionality. From the Explorer window, you can view the switches and target devices defined in the local database. Built-in groupings such as Appliances and Devices provide different ways to list units. You can create custom groups of units by adding and naming folders. Other groupings are also available, based on custom fields that you can assign to units.

From the Explorer Devices list, you can select a device from the list of target devices and start a KVM session with the device. Starting a keyboard, video, and mouse (KVM) session brings up a Video Viewer. From the Explorer Appliances list, you can select a switch to configure.

Video Viewer

Users access and manage target devices through the Video Viewer. You can use predefined macros and choose which macro group is displayed on the Video Viewer Macros menu. You can open the Video Viewer to connect to target devices on the Remote Console Switch. For more information, see "Using the Viewer" on page 63.

The Video Viewer also provides access to the Virtual Media window. You can use the Virtual Media window to map a physical drive such as a disk, CD-ROM, or DVD-ROM data drive, onto a target device so that the media device is available to the target device even though it is not directly connected. For more information on the Virtual Media window, see "Using the Viewer" on page 63.

Interoperability with Avocent® Products

The RCS software can be used to access some Avocent switches. You can also manage those Avocent switches, allowing increased flexibility in the management of systems.

In addition, the RCS software includes support for Avocent IQ modules, expanding the range of server types that can be accessed/managed. The addition of support for Avocent IQ modules means that the following connections are now supported:

- PS/2 modules (Dell and Avocent modules available)
- USB modules, including Virtual Media and Smart Card/Common Access Card (CAC) versions (Dell and Avocent modules available)
- VT100 Serial modules (Avocent modules available)
- True Serial modules (Dell and Avocent modules available)
- Sun modules (Avocent modules available)
- PS2M modules (Avocent modules available)

NOTE: Dell SIP modules are supported on directly connected Avocent switches.

NOTE: Dell 1081AD and 2161AD switches do not support true serial modules.

Operating Features

The RCS software features include target device naming, target device name displays, sorting, and IPv4 and IPv6 network address capabilities. "Keyboard and

Mouse" on page 107 lists the Explorer navigation shortcuts. Other components also support full keyboard navigation in addition to mouse operations.

Target Device Naming

The software requires that each switch and target device have a unique name. To minimize the need for operator intervention, the software uses the following procedure to generate a unique name for a target device whose current name conflicts with another name in the database.

During background operations (such as an automated operation that adds or modifies a name or connection), if a name conflict occurs, the conflicting name is automatically made unique. This is done by appending a tilde (~) followed by an optional set of digits. The digits are added in cases where adding the tilde alone does not make the name unique. The digits start with a value of one and are incremented until a unique name is created.

During operations, if you or another user specifies a non-unique name, a message informs the corresponding user that a unique name is required.

Target Device Name Displays

When a switch is added, the target device names retrieved from the switch are stored in the software database. The operator can then rename the target device in the Explorer. The new name is stored in the database and used in various component screens. This new target device name is not communicated to the switch.

Since the software is a decentralized management system, you can change the name assigned to a target device on the switch at any time without updating the software database. Each operator can customize a particular view of the list of target devices being managed.

Since you can associate more than one name with a single target device - one on the switch and one in the software - the software uses the following rules to determine which name is used:

- The Explorer only shows the target devices listed in its database, with the name specified in the database. In other words, the Explorer does not talk to the switch to obtain target device information.

- The Resync Wizard overwrites locally-defined target device names only if the switch target device name has been changed from the default value. Non-default target device names that are read from the switch during a resynchronization override the locally-defined names.

Sorting

In certain displays, the software component displays a list of items with columns of information about each item. If a column header contains an arrow, you can sort the list by that column in ascending or descending order.

To sort a display by a column header, click the arrow in a column header. The items in the list are sorted according to that column. An upward-pointing arrow indicates the list is sorted by that column header in ascending order. A downward-pointing arrow indicates the list is sorted by that column header in descending order.

IPv4 and IPv6 Network Address Capabilities

The RCS software is compatible with systems using either of the currently supported Internet Protocol Versions, IPv4 (default) or IPv6, or both the IPv4 and IPv6 modes simultaneously.

NOTE: Dell 1081AD and 2161AD switches do not support IPv4 and IPv6 modes simultaneously.

The IPv4 mode connection can be either a stateful (configuration and IP addresses are provided by the server) or a stateless (the switch normally receives the IP address and router address dynamically from the router) auto-configuration. Switch firmware upgrades and emergency boot firmware upgrades are supported for both TFTP and FTP servers while in IPv4 mode.

The IPv6 mode is a stateless, auto-configuration connection. While in IPv6 mode, switch firmware upgrades are only facilitated in FTP mode and emergency

boot firmware flash downloads cannot be performed. To perform a flash download, you must temporarily connect to an IPv4 network with a TFTP server.

NOTE: For Dell 1081AD and 2161AD switches, IPv6 mode is a stateful connection.

2

Installation

Before you install the RCS software on a client computer, make sure that you have all the required items and that the target devices and RCS client computers are running the supported operating systems, browsers, and Java Runtime Environment.

Supplied with the Software

The software is shipped with appliances on a Remote Console Switch Software CD. The user documentation is available as an option on the Help menu from the Remote Console Software Explorer window.

Supported Operating Systems

Client computers running the RCS must be running one of the following operating system versions:

- Microsoft® Windows® 2003 Server with Service Pack 3 Web, Standard, and Enterprise
- Microsoft Windows Server® 2008 Web, Standard, and Enterprise
- Microsoft Windows XP Professional with Service Pack 3
- Microsoft Windows Vista™ Business with Service Pack 1
- Microsoft Windows 2000 Professional with Service Pack 4
- Microsoft Windows 7 Home Premium and Professional
- Red Hat® Enterprise Linux® 4.0 and 5.0 WS, ES, and AS

- SUSE® Linux Enterprise Server 10 and Server 11
- Ubuntu 8 Server and Workstation

Target devices must be running one of the following operating systems:

- Microsoft Windows 2000 Server (32-bit) and Advanced Server
- Microsoft Windows XP Professional and Standard with Service Pack 3
- Microsoft Windows Server 2003 Web, Standard, and Enterprise
- Microsoft Windows Server 2008 Web, Standard, and Enterprise
- Microsoft Windows Vista Standard, Business with Service Pack 1, and Enterprise
- Microsoft Windows 7 Home Premium and Professional
- Netware 6.5 (32-bit)
- Red Hat Enterprise Linux 4.0 and 5.0 with WS, ES, and AS
- Solaris Sparc 10 (64-bit)
- SUSE Linux Enterprise Server 10 and Server 11
- Ubuntu 8 Server and Workstation
- VMware® ESX 3 and ESX 4 (32-bit)

Hardware Configuration Requirements

The software is supported on the following minimum computer hardware configurations:

- 500 MHz Intel® Pentium® III
- 256 MB of RAM
- 10 or 100BaseT NIC (100 recommended)
- XGA Video with graphics accelerator
- Desktop size must be a minimum of 800 x 600

- Color palette must be a minimum of 65,536 (16-bit) colors

Supported Browsers

Computers used to access the Web interface and client computers running the software must have one of the following browsers installed:

- Microsoft Internet Explorer version 6.x SPI or later
- Firefox version 2.0 or later

JRE Requirements

Computers used to access target devices using client computers running the software must have Java Runtime Environment (JRE) 1.6.0_11 or higher installed. The switch will attempt to detect if Java is installed on your PC. If Java is not installed, download it from http:// www.java.com, then associate the JNLP file with Java WebStart.

Installing the Software

The software can be installed on Microsoft Windows and Linux operating systems. Follow these instructions to install RCS software on the desired system.

To install on a Microsoft Windows system:

1 Insert the RCS software CD-ROM into your CD-ROM drive.

2 Execute the following command to start the install program (replace "drive" with your CD-ROM drive letter):

    drive:\WIN32\SETUP.EXE.

3 Follow the on-screen instructions.

To install on a Linux system:

1 Insert the RCS software CD-ROM into your CD-ROM drive.

2   If AutoMount is supported and enabled, proceed to step 3.

-or-

If your system does not support AutoMount:

Mount the CD-ROM volume by executing the following command:

```
mount -t iso9660 -ro mode=0555 <device> <mount point>
```

Replace "device" with the name of the CD-ROM on your machine and mount point with the name of the desired mount point. For example, to mount a CD-ROM which is the second IDE unit on /mnt, execute the command:

```
mount -t iso9660 -ro mode=0555 /dev/hdb /mnt
```

3   At the command-line, execute the following command to change the working directory to the mount point:

```
cd /mnt
```

4   Execute the following command to start the install program:

```
sh ./linux/setup.bin
```

5   Follow the on-screen instructions.

Uninstalling the Software

To uninstall the software on Microsoft Windows operating systems starting at the Control Panel, complete the following steps:

1   Open the Control Panel and select **Add/Remove Programs**. A sorted list of currently installed programs opens.

2   Select the RCS entry.

3   Click the **Change/Remove** button. The uninstall wizard starts.

4   Click the **Uninstall** button and follow the on-screen instructions.

To uninstall the software on Microsoft Windows operating systems using a command window, complete the following steps:

1 Open a command window and change to the RCS install directory used during installation. The default path for Windows 32-bit operating systems is the program files directory.

2 Change to the UninstallerData subdirectory and enter the following command (the quotation marks are required):

    `"Uninstall Dell Remote Console Software.exe"`

The uninstall wizard starts. Follow the on-screen instructions.

To uninstall the software on Linux operating systems, complete the following steps:

1 Open a command window and change to the RCS install directory used during installation. The default path for Linux systems is /usr/lib.

2 Change to the UninstallerData subdirectory and enter the following command:

    `% sh ./Uninstall_Dell_Remote_Console_Software`

The uninstall wizard starts. Follow the on-screen instructions.

Starting the Software

To launch the software on Microsoft Windows systems:

Select **Start - Programs - Dell RCS software**. The RCS software will launch.

To launch the RCS software on Linux:

From the application folder (/usr/lib/Dell_Remote_Console_Switch_Software by default), enter the following command:

    `./Dell_Remote_Console_Switch_Software`

    -or-

From (/user/bin), enter the following link:

    `./Dell_Remote_Console_Switch_Software`

    -or-

If the product was installed in a directory other than the default, then execute the following command from a shell:

```
<path>/Dell_Remote_Console_Switch_Software
```
-or-

If a desktop shortcut was created on installation, double-click the shortcut.

Configuring Switches and Target Devices

This section provides an overview of configuration steps for the switch and for user access to target devices. For switch-specific information, see the *Installation and User Guide* for the switch.

To add switches, complete the following steps:

1   Install the software on one or more client computers.

2   Open the software on a client computer.

3   Use the Explorer to set unit properties, options, and other customization as needed.

4   Configure the names of all target devices using the local GUI interface.

5   Repeat steps 3 through 6 for each switch you want to manage.

6   After one software environment is set up, select **File - Database - Save** to save a copy of the local database with all the settings.

7   From the software on a second computer, select **File - Database - Load** and browse to find the saved file. Select the file and then click **Load**. Repeat this step for each client computer that you want to setup.

8   To access a target device attached to an switch, select the target device in the Explorer and click the **Connect Video** or **Browse** button to open a session (only the corresponding button for the selected target device is visible).

You can configure user accounts using the RCS software or through the Remote Console Switch integrated Web interface. For more information see the *Dell Remote Console Switch Installation and User's Guide*.

To configure the Remote Console Switch, complete the following steps:

1   Connect a terminal or PC running the terminal emulation software to the configuration port on the back panel of the switch using the supplied serial cable. The terminal should be set to 9600 baud, 8 bits, 1 stop bit, no parity, and no flow control.

2   Plug the supplied power cord into the back of the switch and then into an appropriate power source.

3   When the power is switched on, the Power indicator on the rear of the unit will blink for 30 seconds while performing a self-test. Press the <Enter> key to access the main menu.

To configure the Remote Console Switch hardware:

1   You will see the Main menu with eleven options. Select option 1, **Network Configuration**.

2   Select option 1 to set your network speed. Once you enter your selection, you will be returned to the **Network Configuration** menu.

3   Select option 2 to open the **IP Configuration** menu.

4   Type the appropriate number to select one of the following types of IP addresses: 1: **None**, 2: **IPv4 Static**, 3: **IPv4 Dynamic**, 4: **IPv6 Static**, or 5: **IPv6 Dynamic**.

5   Select options 3-5 from the **Terminal Applications** menu, in turn, to finish configuring your Remote Console Switch for IP address, Netmask, and Default Gateway.

6   Once this is completed, type Ø to return to the main menu.

To configure the HTTP and HTTPS ports:

1 You will see the **Main** menu with eleven options. Select the option number for **Set Web Interface Ports** to open the **Web Interface Port Configuration Menu**.

2 Select option 1 to set the port numbers. Type the port numbers you wish to use for the HTTP port and the HTTPS port.

3 If the values are correct for your network, type <Y> and press the <Enter> key.

4 At the local user station, input the target device names.

Mouse Acceleration

If you are experiencing slow mouse response during a remote video session, deactivate mouse acceleration in the operating system of the target device and adjust mouse acceleration on each target device to **Slow** or **None**.

Web Interface Installation and Setup

Once you have installed a new appliance, you can use the web interface to configure unit parameters and launch video sessions.

Supported Browsers

The web interface supports the following browsers:

• Microsoft Internet Explorer® version 6.x SP1 or later

• Firefox version 2.0 or later

Launching the On-board Web Interface

To launch the web interface:

1 Open a web browser and type the IP address of the appliance using the local Web interface.

NOTE: If you changed the default HTTP/HTTPS ports in the serial console and are using an IPv4 address, use IP address format: https://<ipaddress>:<port#>, where "port#" is the number you specified in the serial console. If you are using an IPv6 address, use format: https:// [<ipaddress>]:<port#>, where "port#" is the number you specified in the serial console. If you are using an IPv6 address, you must enclose the address in square brackets.

2   The log in window opens. Type your username and password and click **OK**.

NOTE: The default username is Admin and the password has no entry.

3   The web interface opens and displays the **Connections** tab.

NOTE: To use the Web interface, Java Runtime Environment (JRE) version 1.6.0_11 or higher must be installed on your computer. The KVM Switch will attempt to detect Java on your PC. If Java is not installed, download it from http://www.java.com, then associate the JNLP file with Java WebStart.

NOTE: Once you have logged in to the web interface, you will not have to log in again when launching new sessions unless you have logged out or your session has exceed the inactivity timeout specified by the administrator.

3

Basic Software Operation

The RCS software Explorer (which is called Explorer from here on) is the main GUI interface for the software. You can view, access, manage, and create custom groupings for all supported units.

Viewing Your System in the Explorer

When you start the software, the main Explorer window opens. The Explorer is divided into several panes: the **View Selector** tabs, the **Group Selector** pane, and the **Unit Selector** pane. The content of these areas changes, based on whether a target device or an appliance is selected or what task is to be completed. Figure 3.1 highlights these navigation features.

Click one of the **View Selector** tabs to view your system organized by categories: **Remote Console Switches**, **Servers**, **Sites**, or **Folders**. The Explorer's default display is user-configurable. You can have it automatically open to any one of these four tabs. For more information, see "Viewing Your System in the Explorer" on page 25. If you do not customize the default display, the Explorer will open to the Server view once you have added your first Remote Console Switch.

Figure 3.1: Explorer Window
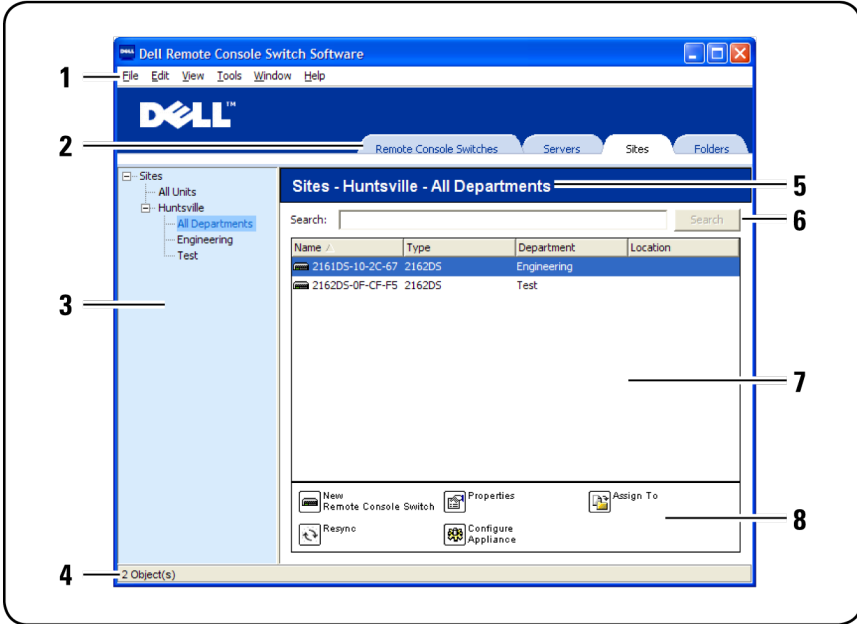
1   **Menu bar:** Allows you to access many of the features in the RCS software.

2   **View Selector tabs:** Contains four **View Selector** tabs for choosing the Explorer view.

3   **Group Selector pane:** Contains a tree view representing the groups that are available for the current **View Selector** tab. The selected group controls what is displayed in the **Unit Selector** pane when the **Remote Console Switches**, **Sites** or **Folder** tabs are selected.

4   **Status bar:** Displays the number of units shown in the **Unit** list.

5   **Unit Selector pane:** Contains the **Search** bar, **Unit** list, and **Task** buttons appropriate for the selected view or group.

6   **Search bar:** Allows you to search the database based on the text entered in the search box.

7   **Unit list:** Displays a **Unit** list of units contained in the currently selected group, or the results of the search executed from the **Search** bar.

8   Task buttons: Contains buttons representing tasks that can be executed. Some buttons are dynamic based on the type of unit(s) selected in the **Unit** list while other buttons are fixed and always present.

If a selected switch is enabled for the Web interface, two additional buttons: Resync and Configure Appliance appear at the bottom of the Explorer window. The Resync button allows you to search for unpowered SIPs or Avocent IQ modules. The Configure Appliance button allows you to upgrade the Remote Console Switch. If a selected switch is not enabled for the Web interface, the Resync and Configure Appliance buttons do not appear.

Customizing the Window Display

You can resize the Explorer window at any time. Each time you start the application, the Explorer window opens to its default size and location.

A split-pane divider that runs from top to bottom separates the Group Selector pane and the Unit Selector pane. You can move the divider left and right to change the viewing area of these two panes. Each time the Explorer is opened, the divider returns to its default location. See "Keyboard and Mouse" on page 107" for divider pane and tree view control shortcuts.

You can specify which view (Appliances, Devices, Sites, or Folders) is visible on startup or you can let the Explorer determine it. For more information, see "Customizing the Window Display" on page 27.

You can change the order and sorting of the Unit list by clicking the sort bar above the column. An upward-pointing arrow in a column header indicates that the list is sorted by that field name in ascending order. A downward-pointing arrow indicates the list is sorted by that field name in descending order.

Adding a Remote Console Switch (Dell or Avocent)

In addition to the Dell Remote Console Switch, the RCS software can also be used to manage Avocent switches. Therefore, as part of the process of adding a Remote Console Switch to your RCS software database, you will be prompted to select the vendor and product type for the switch you want to add. Once a Remote Console Switch or Avocent switch is added, it appears in the **Unit** list. You may either manually add or discover a Remote Console Switch. You may add a unit with either an IPv4 or an IPv6 address.

To add a new Remote Console Switch with an assigned IP address:

1   Select **File - New - Remote Console Switch** from the Explorer menu.

   -or-

   Click the **New Remote Console Switch** task button. The New Remote Console Switch Wizard appears.

2   Click **Next** to continue. The **Product Type** dialog box appears and prompts you to select the Remote Console Switch vendor and product.

Figure 3.2: Product Type Dialog Box
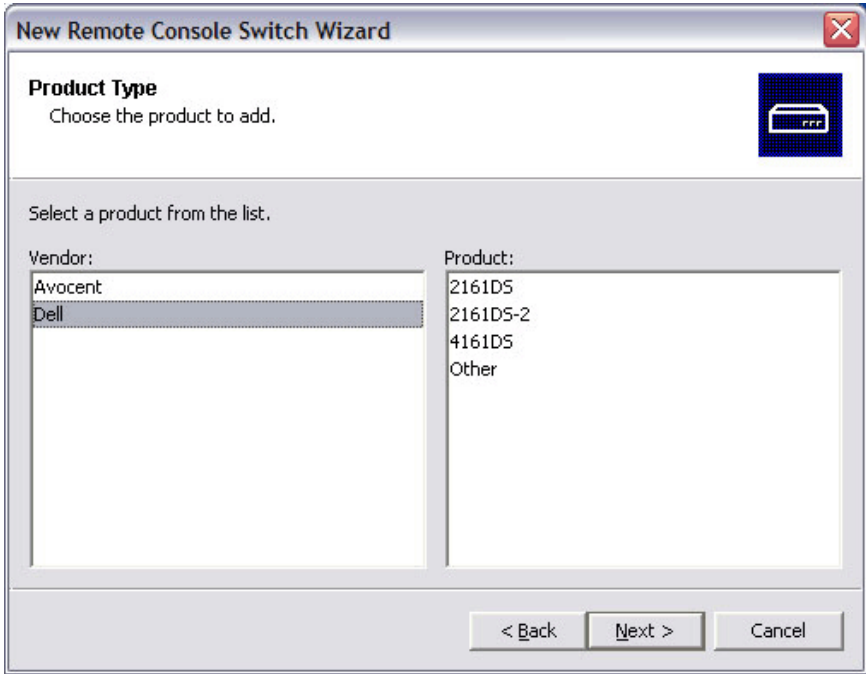
3   Select a **Vendor**. For each vendor, the supported product names appear in
     the **Product** list. Select a product.

     If the Remote Console Switch model you wish to add is not available
     in the **Product** list, select **Other**. Once this switch is discovered, it will
     be available in the **Product** list the next time you add a Remote
     Console Switch.

     NOTE: Each dialog box in the New Remote Console Switch Wizard indicates
     the type of switch you have selected from the Product list.

4   Click **Next**.

5   You are prompted to indicate whether the Remote Console Switch has an
     assigned IP address or not. Click **Yes** and then click **Next**.

6   The **Locate** window appears. Type the hostname or IP address, the HTTP port, and the HTTPS port, and click **Next**. IPv4 addresses are entered in xxx.xxx.xxx.xxx dot notation. IPv6 addresses are entered in hexadecimal FD00:172:12:0:0:0:0:33 notation or compressed FD00:172:12::33 notation.

7   The RCS software searches for the indicated unit as well as all the powered SIPs, Avocent IQ modules, and server names, if any. If you want to search for unpowered SIPs or Avocent IQ modules, you can access the Resync feature in the software and click to enable the **Include Offline SIPs** check box.

8   Click **Next**.

9   The **Configure Tiered Switches** dialog box appears if the RCS software detects an attached legacy switch. This dialog box contains a list of all SIP EIDs retrieved from the Remote Console Switch and the tiered switches to which they are connected, if any. When this dialog box first displays, all the switches will be set to **None**. Switches detected will have an icon next to the drop-down list.

   a.   The **Existing Tiered Switches** field contains a list of all the current switches defined in the database. Click **Add**, **Modify**, or **Delete** to alter the list.

   b.   Associate the appropriate switch from the drop-down lists for each SIP or Avocent IQ module that has a switch attached.

Figure 3.3: Configure Tiered Switches Dialog Box
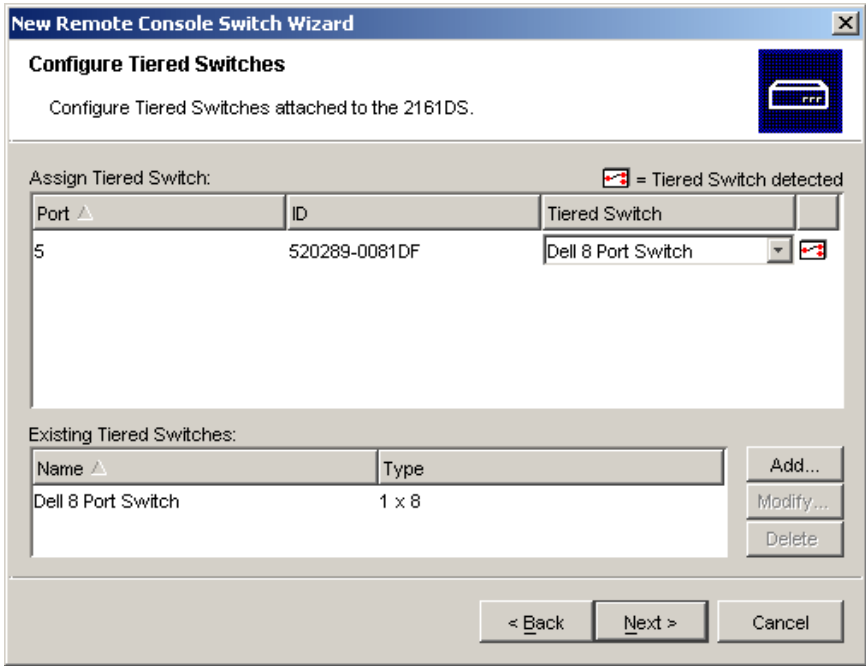
10 When you reach the final page of the **Remote Console Switch Wizard**, click **Finish** to exit and return to the main window. Your Remote Console Switch should now appear in the **Unit Selector** pane.

To add a new Remote Console Switch that does not have an assigned IP address:

1 Select **File - New - Remote Console Switch** from the Explorer menu.

   -or-

   Click the **New Remote Console Switch** task button. The New Remote Console Switch wizard appears.

2 Click **Next** to continue. The **Product Type** dialog box appears and prompts you to select the Remote Console Switch vendor and product.

Figure 3.4: Product Type Dialog Box
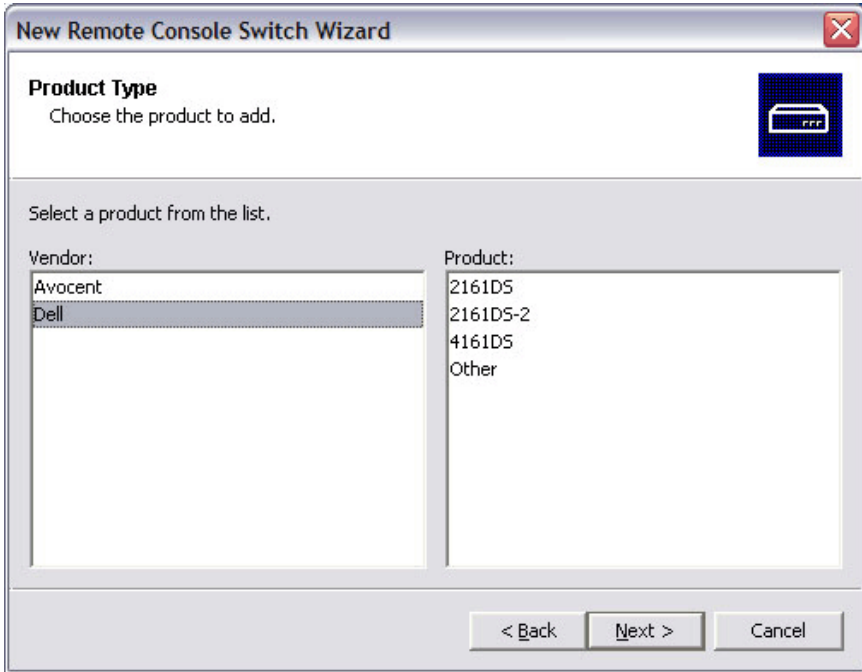
3   Select a **Vendor**. For each vendor, the supported product names appear in the **Product** list. Select a product.

    If the Remote Console Switch model you wish to add is not available in the **Product** list, select **Other**. Once this switch is discovered, it will be available in the **Product** list the next time you add a Remote Console Switch.

4   Click **Next**.

5   You are prompted to indicate if the Remote Console Switch has an assigned IP address. Click **No** and then click **Next**.

6   The **Network Address** window appears. Type the IP address, subnet mask (if using IPv4 mode) or prefix length (if using IPv6 mode), and gateway you

wish to assign to the unit and click **Next**. IPv4 addresses are entered in xxx.xxx.xxx.xxx dot notation. IPv6 addresses are entered in hexadecimal FD00:172:12:0:0:0:0:33 notation or compressed FD00:172:12::33 notation.

NOTE: The Remote Console Switch supports DHCP (Dynamic Host Configuration protocol) and static IP addressing. Dell recommends that IP addresses be reserved for each unit and that they remain static while the Remote Console Switch units are connected to the network.

7   The **Select Remote Console Switch** window appears, prompting you to select the unit to add from the list of new Remote Console Switches that were found. Select the product and then click **Next**.

8   The **Configuring Remote Console Switch** window appears to indicate whether the IP information was successfully configured. If the configuration was successful, the software will search for the new Remote Console Switch as well as all SIPs, Avocent IQ modules, and server names associated with it. Click **Next**.

9   The **Configure Tiered Switches** dialog box appears if the software detects an attached legacy switch. This dialog box contains a list of all SIP and Avocent IQ module EIDs retrieved from the Remote Console Switch and the tiered switches to which they are connected, if any.

   a.   The **Existing Tiered Switches** field contains a list of all the current switches defined in the database. You may add to, delete, or modify the list.

   b.   Associate the appropriate switch from the drop-down lists for each SIP or Avocent IQ modules that has a switch attached.

Figure 3.5: Configure Tiered Switches Dialog Box

10 When complete, click **Finish** to exit the Wizard and return to the main window. Your Remote Console Switch should now be in the **Unit Selector** pane.
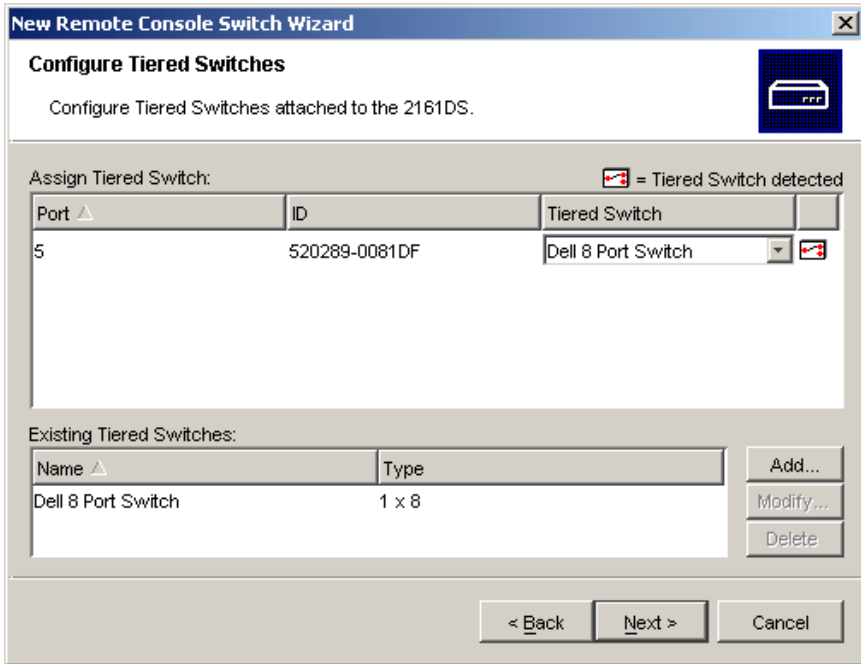
To discover a Remote Console Switch:

1 Select **Tools - Discover** from the Explorer menu from the software. The Discover Wizard appears. Click **Next** to continue.

2 The **Address Range** page appears. Complete one of the following steps:

If you are using IPv4 mode, select **Use IPv4 address range**, and type the range of IP addresses you wish to search on the network in the **To Address** and **From Address** boxes. IPv4 addresses are entered in xxx.xxx.xxx.xxx dot notation.

- or -

If you are using IPv6 mode, select **Use IPv6 address range**, and type the range of IP addresses you wish to search on the network in the **To Address** and **From Address** boxes. IPv6 addresses are entered in hexadecimal FD00:172:12:0:0:0:0:33 notation or compressed FD00:172:12::33 notation.

3   You may also change the default HTTP and HTTPS port numbers, if the Remote Console Switch has changed from the default on the serial console, by typing the new port numbers in the **HTTP Port** and **HTTPS Port** fields. Click **Next** to continue.

4   The **Searching Network** progress bar appears. Progress text indicates how many addresses have been probed from the total number specified by the range and the number of Remote Console Switches or Avocent switches found. If one or more new Remote Console Switches or Avocent switches are discovered, the Wizard shows the Select Remote Console Switches to Add page. From this page, you can choose the Remote Console Switches to add to the local database.

   -or-

   If no new Remote Console Switches were found (or if you clicked **Stop**), the **Wizard** will show the **No New Remote Console Switches Found** page and you will need to add the switch manually. For more information, see the previous procedure.

5   Click the Remote Console Switch(es) you wish to add and click the **Add (>)** button to move the selection to the **Remote Console Switches to Add** list.

Figure 3.6: Select Remote Console Switches to Add Dialog Box
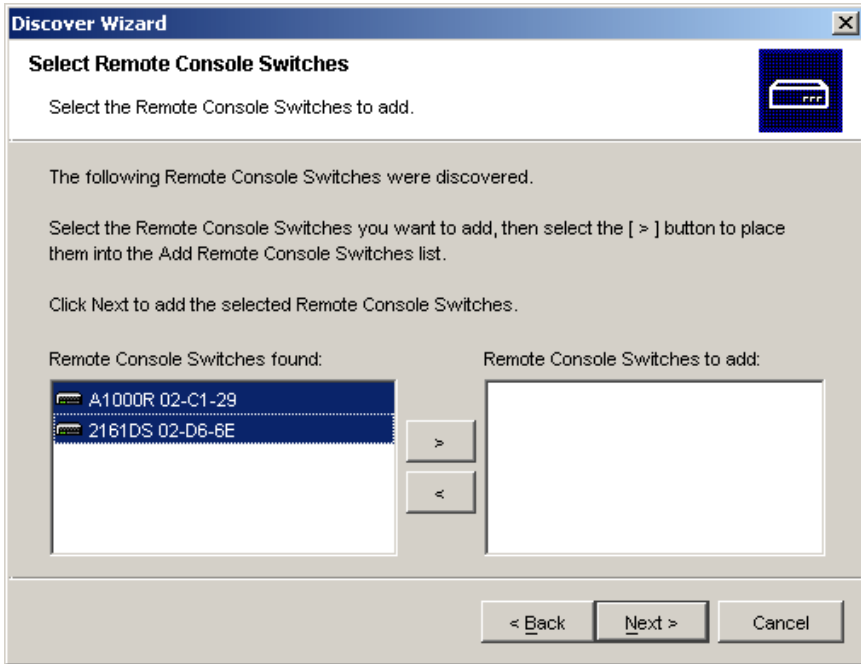
6   Repeat step 5 for all Remote Console Switches you wish to add. Click **Next**
    to continue.

7   The **Adding Remote Console Switches** progress bar appears while the new
    switches are being added. Once all of the selected switches have been added
    to the local database, the **Discover Wizard Completed** page appears. Click
    Finish to exit the Wizard and return to the main window. Your new
    switches should now be in the **Unit Selector** pane.

8   If one or more switches could not be added to the local database for any
    reason (including if you clicked **Stop** during the add process), the **Discover
    Wizard Not All Remote Console Switches Added** page appears. This page
    will list all of the switches that you selected and the status for each. The
    status will indicate if a Remote Console Switch was added to the local

database and if not, why the process failed. Click **Done** when you are
finished reviewing the list.

> ✏ **NOTE:** If a Remote Console Switch already exists in the database with the
> same IP address as a discovered unit, then the discovered switch will be
> ignored and will not display on the next Wizard page.

Accessing Your Remote Console Switch

When you click the Remote Console Switches tab in the software, you will see a
list of the switches currently defined in the local database. To access a Remote
Console Switch, you must first log into it by typing a username and password.
The default username is Admin (case sensitive) with no password. Once you
have logged in to a particular Remote Console Switch, the software will cache
the username and password in memory for the duration of the software session.

> ✏ **NOTE:** You can clear the login credentials and re-login under another
> username and password by selecting Tools - Clear Login Credentials.

Figure 3.7: Remote Console Switch View Tab Selected
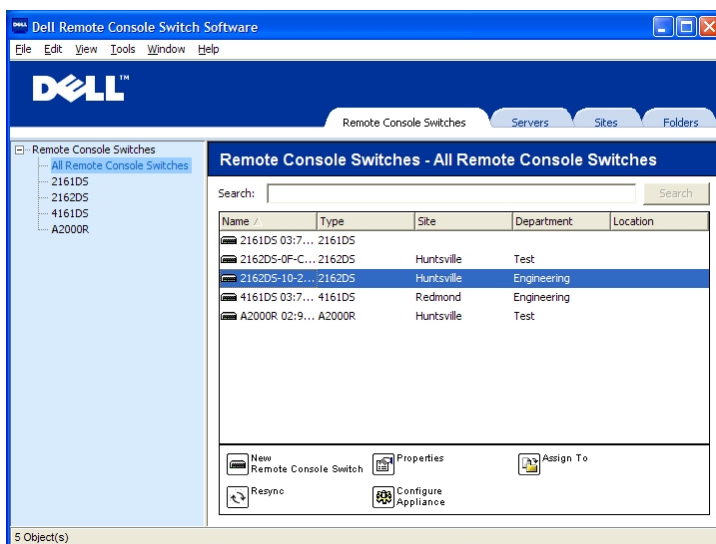
To log into a Remote Console Switch:

1   Click the **Remote Console Switches** tab in the Explorer.

2   Double-click a Remote Console Switch in the **Unit Selector** pane.

    -or-

    Select a Remote Console Switch from the **Unit Selector** pane, and click the **Configure Remote Console Switch** task button.

    -or-

    Right-click on a Remote Console Switch in the **Unit Selector** pane. A pop-up menu appears. Select **Configure Remote Console Switch**.

    -or-

    Click a Remote Console Switch in the **Unit Selector** pane and press <Enter>.

3   Cached login credentials are used if available. If not, a login prompt appears. Type your username and password. If this is the first time you have accessed the Remote Console Switch or you have not assigned a username and password, type the default username, Admin (case sensitive), with no password.

4   Click **OK** to access the Remote Console Switch. This launches the on-board web interface. For more information about the on-board web interface, see the *Remote Console Switch Installation and User Guide*.

    -or-

    Click **Cancel** to exit without logging in.

To search for a Remote Console Switch in the system:

1   Click the **Remote Console Switch** tab in the software and insert your cursor in the search text box.

2   Type the search information. This can be the Remote Console Switch name or any information you have entered in the other **Unit Selector** list headings such as **Type** or **Location** or IP Address.

3   Click the **Search** button. The results appear in the **Unit** list.

4 Review the results of your search.

-or-

Click the **Clear Results** button to display the entire list again.

Launching the VNC or RDP Viewer

The RCS software supports user-defined Virtual Network Computing (VNC) and Remote Desktop Protocol (RDP) viewers. To launch either the VNC or RDP viewer, select the **Server** tab from the RCS software Explorer. Select a server from the units list, then click on either the **VNC** or **RDP** button at the bottom right of the screen.

> **NOTE:** The VNC and RDP buttons will only appear when a server has been set up with a link. See the VNC and RDP Properties and Options sections for more information.

Changing Server and Switch Properties

From the software, you can alter individual server or switch properties from the **Properties** dialog box at the following tabs: **General**, **Network**, **Information**, **Connections** (for devices) and for viewer applications, **VNC** and **RDP**.

General Properties

The **General** tab allows you to change the name and display icon for a Remote Console Switch or connected server. You can also assign the switch or server to a site, location, or folder. For servers, you can change the type.

To change general properties:

1 In the software, click the **Remote Console Switch** or **Server** tab and then select an individual unit in the **Unit Selector** list.

2 Select **View - Properties** from the Explorer menu.

-or-

Click the **Properties** task button.

-or-

Right-click the unit and select **Properties**. The **Properties** dialog box appears.

Figure 3.8: General Properties Tab for a Server
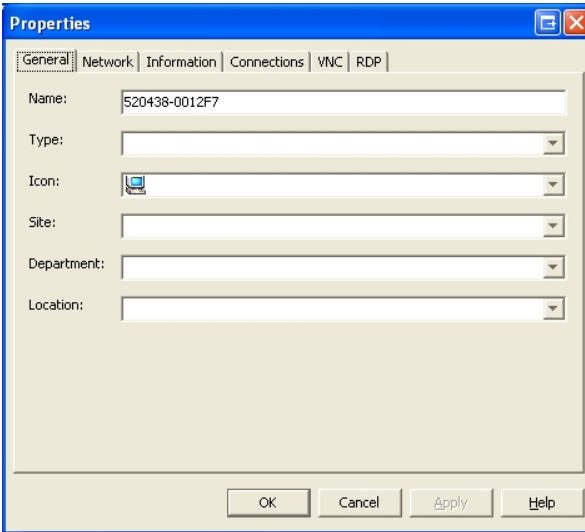
3   Type the name of the unit. Duplicate names are not allowed.

4   (Servers Only - Optional) Select the server type. If the selection is not in the drop-down list, type the name of the new server type in the text field. Once entered, the option becomes available in the drop-down list for future assignment.

5   Select the icon to display for the unit.

6   (Optional) Assign a unit to a site, department, or location. If an option is not in the drop-down list, type the name of the new assignment in the text field. Once entered, the option becomes available in the drop-down list for a future assignment.

7   Click **Apply** to save the new settings.

    -or-

Click **OK** to save the new settings and close the Properties window.

-or-

Click **Cancel** to exit without saving the new settings.

Server Network Properties

The **Network** tab lets you set a browser URL for that server if you want to launch a browser to the server's web server instead of launching a Viewer session.

To change network properties:

1   In the software, click the **Server** tab and then select an individual server in the **Unit Selector** list.

2   Select **View - Properties** from the Explorer menu.

    -or-

    Click the **Properties** task button.

    -or-

    Right-click the unit and select **Properties**. The **Properties** dialog box appears.

3   Click the **Network** tab and type the URL you want to use when establishing a browser connection to the server. If the field contains a value, then the **Browser** button appears in the task bar allowing you to launch the browser to that specified URL.

4   Click **Apply** to save the new settings.

    -or-

    Click **OK** to save the new settings and close the window.

    -or-

    Click **Cancel** to exit without saving the new settings.

Switch Network Properties

If you were to reconfigure your network, you can use the **Network** tab to change the IP address for a switch.

To change network properties:

1   In the software, click the **Remote Console Switches** tab and then select an individual unit in the Unit Selector list.

2   Select **View - Properties** from the Explorer menu.

    -or-

    Click the **Properties** task button.

    -or-

    Right-click the unit and select **Properties**. The **Properties** dialog box appears.

3   Click the **Network** tab and type in the address of the Remote Console Switch. This field can contain an IP dot notation or a domain name. Duplicate addresses are not allowed and the field cannot be left blank. You can enter up to 128 characters, and may use an IPv4 or an IPv6 address, or dual-stack an IPv4 and IPv6 simultaneously.

    NOTE: Dell 1081AD and 2161AD switches do not support IPv4 and IPv6 modes simultaneously.

4   Type the HTTP and HTTPS port numbers in the **HTTP Port** and **HTTPS Port** fields, respectively, if you changed the port numbers for the Remote Console Switch in the serial console. For more information on changing the port numbers in the serial console, see "HTTP/HTTPS Options" on page 26.

5   Click **Apply** to save the new settings.

    -or-

    Click **OK** to save the new settings and close the window.

    -or-

    Click **Cancel** to exit without saving the new settings.

Information Properties

The Information tab allows you to enter information about the switch or server including a description, contact information and any comments you might wish to add.

To change information properties:

1   In the software, click the **Remote Console Switches** or **Server** tab and then select an individual unit in the **Unit Selector** list.

2   Select **View - Properties** from the Explorer menu.

    -or-

    Click the **Properties** task button.

    -or-

    Right-click the unit and select **Properties**. The **Properties** dialog box appears.

3   (Optional) Click the **Information** tab and type a description of the unit. You can enter any information in the following fields.

    a.   In the **Description** field, enter 0 to 128 characters.

    b.   In the **Contact** field, enter 0 to 128 characters.

    c.   In the **Contact Phone Number** field, enter 0 to 64 characters.

    d.   In the **Comments** field, enter 0 to 256 characters.

4   Click **Apply** to save the new settings.

    -or-

    Click **OK** to save the new settings and close the window.

    -or-

    Click **Cancel** to exit without saving the new settings.

Server Connections Properties

The **Connections** tab displays the physical connection path that is used to access this server and the connection type, such as video.

To view connection properties:

1   In the software, click the **Server** tab and then select an individual server in the **Unit Selector** list.

2   Select **View - Properties** from the Explorer menu.

    -or-

Click the **Properties** task button.

-or-

Right-click the server and select **Properties**. The **Properties** dialog box appears.

3 Click on the **Connections** tab to view the connections of the server. Connections properties are available only for servers and are read-only. The display indicates the physical connection path that is used to access this device and the connection type, such as video.

4 When finished, click **OK** or **Cancel** to close the window.

VNC Properties

When you indicate a user-specified VNC application, you may include its command-line arguments. A selection of macros is available for placement in the command-line; this may be useful for automatic replacement of variables such as IP address, port number, user name and password. For VNC commands that do not provide their own GUI, such as those for computers running Windows, Linux, and UNIX® operating systems, you may have the VNC application launch from within an OS command window.

To change VNC properties:

1 Select a server in the unit list.

2 Select **View - Properties** from the Remote Console Switch Explorer menu.

- or -

Click the **Properties** task button.

- or -

Right-click on the unit. Select **Properties** from the pop-up menu. The **Properties** dialog box appears.

3 Click the **VNC** tab.

4 For servers only, in the IP Address field, enter an IP address in dot notation or a 1-128 character domain name. Spaces are not allowed. Duplicate addresses are allowed. You may use IPv4 and IPv6 addresses.

5   In the Port field, enter a port number in the range 23-65535. If blank, port 23 is used.

6   Mark to enable or clear to disable the **Use Default** check box. When this setting is enabled, the default global setting specified in **Options** will be used and all other portions of the **Application to Launch** area are disabled.

7   Enter the directory path and name or click the **Browse** button to locate the path and name.

8   Enter command-line arguments in the box below the path and name.

     - or -

     To insert a predefined macro at the cursor location in the command-line, click the **Insert Macro** list box and select a macro from the drop-down menu. The RCS software will automatically replace these variables when the application runs.

9   Enable/disable the **Launch in command window** check box. When enabled, the user-specified VNC application will be launched from within an OS command window.

10   Click **OK**.

RDP Properties

When you indicate a user-specified RDP application, you may include its command-line arguments. A selection of macros is available for placement in the command-line; this may be useful for automatic replacement of variables such as IP address, port number, user name and password. For RDP commands that do not provide their own GUI, such as those for computers running Windows, Linux, and UNIX® operating systems, you may have the RDP application launch from within an OS command window.

To change RDP properties:

1   Select a server in the unit list.

2   Select **View - Properties** from the Remote Console Switch Explorer menu.

     - or -

Click the **Properties** task button.

- or -

Right-click on the unit. Select **Properties** from the pop-up menu. The **Properties** dialog box appears.

3   Click the **RDP** tab, as appropriate.

4   For servers only, in the IP Address field, enter an IP address in dot notation or a 1-128 character domain name. Spaces are not allowed. Duplicate addresses are allowed. You may use an IPv4 or an IPv6 address, or both an IPv4 and IPv6 address, simultaneously.

NOTE: Dell 1081AD and 2161AD switches do not support IPv4 and IPv6 modes simultaneously.

5   In the Port field, enter a port number in the range 23-65535. If blank, port 23 is used.

6   Mark to enable or clear to disable the **Use Default** check box. When this setting is enabled, the default global setting specified in **Options** will be used and all other portions of the **Application to Launch** area are disabled.

7   Enter the directory path and name or click the **Browse** button to locate the path and name.

8   Enter command-line arguments in the box below the path and name.

- or -

To insert a predefined macro at the cursor location in the command-line, click the **Insert Macro** list box and select a macro from the drop-down menu. The RCS software will automatically replace these variables when the application runs.

9   Enable/disable the **Launch in command window** check box. When enabled, the user-specified RDP application will be launched from within an OS command window.

10 Click **OK**.

Accessing a Server via a Browser Window

As a convenience, you can configure the software to open a connection to a server in a web browser. First, select a server and define the web server network in the **Properties** dialog box. Then, when you select the server, the **Browse** task button appears.

> **NOTE:** You can select the browser to use in the Explorer's Options dialog box.

> **NOTE:** While the browser will connect to any URL, if the Browser Network property is set for the server, this feature is particularly applicable for servers configured with a service processor management interface, such as the integrated Dell Remote Access Card (iDRAC).

To launch the server network in a browser window:

1   Select a server in the **Unit Selector** pane in the software.

2   If you have defined a Browser URL on the Network tab for this server in the **Properties** dialog box, the **Browse** task button appears. Click the **Browse** task button. The network you identified will launch in a browser window.
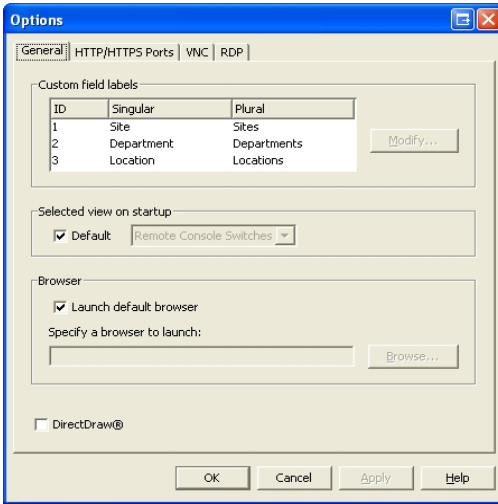
Changing Server and Switch Options

From the RCS software, you can alter individual server or switch options from the **Options** dialog box including **General**, **HTTP/HTTPS Ports**, **VNC**, and **RDP**.

General Options

To modify a custom field label:

1   Select **Tools - Options** from the Explorer menu. The **Options** dialog box appears.

Figure 3.9: Options Dialog Box - Custom Field Labels

2   Select the field label you wish to modify and click the **Modify** button. The **Modify Custom Field Label** dialog box appears.

3   Type the singular and plural versions of the field label. The length can be from 1 to 32 characters. A blank value is not allowed. Spaces are permitted in the middle but leading and trailing spaces are not allowed.

4   Click **OK** to save the new field label.

-or-

Click **Cancel** to exit without saving changes.

Default Browser

The Browser option specifies the browser application that opens when you click the **Browse** button for a target device that has URL defined, or when the RCS online help is opened. You can either enable the default browser application of the current computer or select among other available browsers.

To view or change the default browser, complete the following steps:

1   Select **Tools - Options** from the Explorer menu. The General Options window opens.

2   Complete one of the following steps:

- In the **Browser** field, select the **Launch Default Browser** check box to specify the default browser.

- Clear the **Launch Default Browser** check box. Click the **Browse** button and select a browser executable on the computer. You can also enter the full path name of the browser executable.

3   Complete one of the following steps:

- Click another tab to change additional properties.

- If finished, click **OK** to save the new settings.

- Click **Cancel** to exit without saving the new settings.

Changing DirectDraw Support (Windows OS Only)

The software supports DirectDraw, a standard that allows direct manipulation of video display memory, hardware overlays, and page flipping without the intervention of the Graphical Device Interface (GDI). This can result in smoother animation and improvement in the performance of display-intensive software.

However, if your machine has a software cursor or pointer shadow enabled, or if your video driver does not support DirectDraw, you may experience a flicker in your mouse cursor when over the title bar of the Viewer.

You can disable the software cursor or pointer shadow, load a new driver for your video card, or you can disable DirectDraw.

To disable DirectDraw:

1   Select **Tools - Options** from the Explorer menu. The **Options** dialog box appears.

2   Click to disable the **DirectDraw** check box.

3   Click **OK**.

NOTE: The DirectDraw check box will only appear for Windows based Operating Systems.

HTTP/HTTPS Options

The Remote Console Switch and software use port 80 as the default HTTP port and port 443 as the default HTTPS port. You can change the default port numbers used in the **HTTP/HTTPS Ports** tab of the Options dialog box.

1 Select **Tools - Options** from the Explorer menu. The **Options** dialog box appears.

2 Click the **HTTP/HTTPS Ports** tab.

3 Type the new default HTTP and HTTPS port numbers.

4 Click **OK**.

VNC Options

The software supports user-defined VNC viewers via the properties page. In the VNC tab you can search for a user-specific VNC application and you may include its command-line arguments. A selection of macros is available for placement in the command-line; this may be useful for automatic replacement of variables such as IP address, port number, user name, and password. For VNC commands that do not provide their own GUI, such as those for standard Windows, Linux, and UNIX, you may have the VNC application launch from within an OS command window.

To change VNC options:

1 Select **Tools - Options** from the Explorer menu. The **Options** dialog box appears.

2 Click the **VNC** tab.

3 In the **Application to Launch** field, enter the directory path and name or click the **Browse** button to locate the path and name.

4 Enter command-line arguments in the box below the path and name.

- or -

To insert a predefined macro at the cursor location in the command-line, click the **Insert Macro** list box and select a macro from the drop-down menu. The RCS software will automatically replace these variables when the application runs.

5   Enable/disable the **Launch in command window** check box. When enabled, the user-specified VNC application will be launched from within an OS command window.

6   Click **OK**.

RDP Options

The software supports user-defined RDP viewers via the properties page. In the RDP tab you can search for a user-specific RDP application and you may include its command-line arguments. A selection of macros is available for placement in the command-line; this may be useful for automatic replacement of variables such as IP address, port number, user name, and password. For RDP commands that do not provide their own GUI, such as those for standard Windows, Linux, and UNIX, you may have the RDP application launch from within an OS command window.

To change RDP options:

1   Explorer menu. The **Options** dialog box appears.

2   Click the **RDP** tab.

3   In the **Application to Launch** field, enter the directory path and name or click the **Browse** button to locate the path and name.

4   Enter command-line arguments in the box below the path and name.

- or -

To insert a predefined macro at the cursor location in the command-line, click the **Insert Macro** list box and select a macro from the drop-down menu. The RCS software will automatically replace these variables when the application runs.

5 Enable/disable the **Launch in command window** check box. When enabled, the user-specified RDP application will be launched from within an OS command window.

6 Click **OK**.

Organizing Your System

The Sites and Folders view tabs in the RCS software allow you to organize and manage your Remote Console Switches and servers by custom groups. Site organization is based on where your servers are located and refers to the column headings **Site** and **Department**, which can be customized to suit your needs. See "Modifying Custom Field Names" on page 53. Folders are a way to create a customized organizational system for individual servers. For example, you might want to create a folder for critical servers or for remote servers.

You may change the order and sorting of the **Unit Selector** list by clicking in the column header. An upward-pointing arrow in a column header indicates that the list is sorted by that field name in ascending order. A downward-pointing arrow indicates the list is sorted by that field name in descending order.

You can customize the column headings. Figure 3.10 shows an example of how you might use the default field name values. You may change them to fit your own organization. Figure 3.11 shows an example of customized field names.

Figure 3.10: Sites View Tab Selected
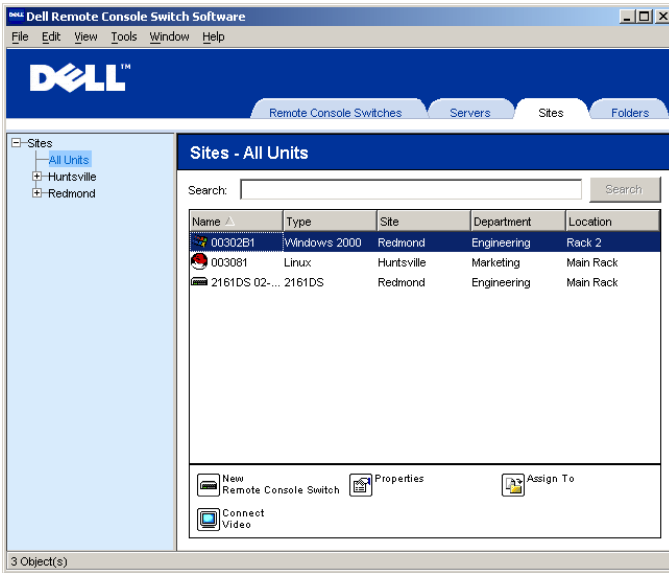
Modifying Custom Field Names

Custom field names allow you to change the **Site**, **Department**, and **Location** column heading names that appear in the **Group** and **Unit Selector** panes in the software. This allows you to group Remote Console Switches and servers in ways that are meaningful to you. The **Department** field is a subset of **Site**. If you customize these field names, you should keep this hierarchy in mind.

Figure 3.11: Example of Modified Custom Fields
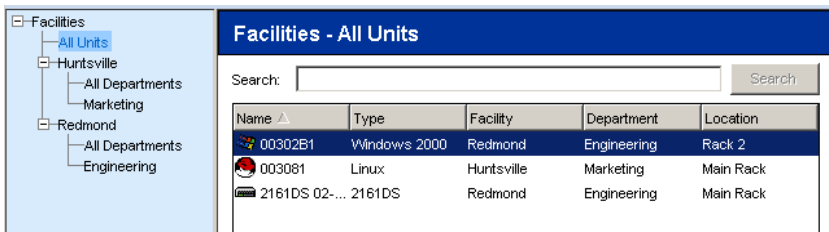
To create a new site, department, or location:

1   Select **View - Properties** from the Explorer menu.

    -or-

    Click the **Properties** task button. The **Properties** dialog box appears.

2   Click the **General** tab and select the drop-down list for **Site**, **Department**, or **Location**. If a name is not in the drop-down list, type the name you want in the text field. The name can be from 1 to 32 characters long. Names are not case sensitive and can consist of any combination of characters entered from the keyboard. Spaces are permitted in the middle but leading and trailing spaces are not allowed. Duplicate names are not allowed.

3   Click **OK**. The new site, department, or location appears in the Group Selector pane.

Creating Folders

To create a new folder:

1   Select the **Folders View Selector** tab.

2   Click the **Folders** node and select **File - New - Folder**.

    -or-

    Right-click the **Folders** node and select **New Folder**. The **New Folder** dialog box appears.

3   Type a name for the folder from 1 to 32 characters long. Folder names are not case sensitive and can consist of any combination of characters entered from the keyboard. Spaces are permitted in the middle but leading and trailing spaces are not allowed. Duplicate folder names are not allowed at the same level but are allowed across different levels.

4   Click **OK**. The new folder appears in the **Group Selector** pane.

Assigning a Unit to a Site, Location, or Folder

You can assign a Remote Console Switch or server to a **Site**, **Department**, **Location** or **Folder** in the software. This menu item is only enabled when a single Remote Console Switch or server is selected in the **Unit Selector** pane. These custom targets are defined in the **General Properties** dialog box.

To assign a unit to a site, location, or folder:

1   Select a unit in the **Unit Selector** pane.

2   Select **Edit - Assign** from the Explorer menu.

   -or-

Click the **Assign To** task button.

   -or-

Right-click a unit and select **Assign To**. The **Assign To** dialog box appears.

3   Select the site, location, or folder category from the drop-down list.

4   Select the target from the list of available targets to which the unit can be assigned within the chosen category. This could be empty if no site, location, or folder has been defined in the local database.

5   Click **OK** to save the assignment.

   -or-

Click **Cancel** to exit without saving changes.

To drag and drop a unit into a site, department, location, or folder:

1   Click and hold on a unit in the **Unit** list in the software.

2   Drag the item to the node in the tree view of the **Group Selector** pane.

3   Release the mouse button. The item now appears in the **Unit** list when you click that node.

> **NOTE:** A unit cannot be moved to All Departments, All Units, or the root Sites node. Units can only be moved one at a time.

Deleting and Renaming

The delete function is context-sensitive based on what is currently selected in the **Group** and **Unit Selector** panes in the software. When you select and delete a unit in the **Unit** list, the unit is removed from the local database. When you select and delete an item in the tree view of the **Group Selector** pane, you will delete **Server Types**, **Sites**, **Departments**, and **Folders**. However, none of the actions result in units being deleted from the local database.

The rename function is also context-sensitive. You can select and rename a Remote Console Switch or a server from the **Unit** list. You can select and rename server types, sites, departments, and folder names in the tree view of the **Group Selector** pane.

To delete a Remote Console Switch or server:

1   Select the unit(s) you wish to delete from the **Unit Selector** pane.

2   Select **Edit - Delete**.

    -or-

    Press the <Del> key on your keyboard. A dialog box appears confirming the number of units to be deleted. If you are deleting a Remote Console Switch, the dialog box includes a **Delete Associated Servers** check box. Click to enable/disable the check box as desired.

3   Click **Yes** to confirm the deletion. Additional message prompts may appear depending on your configuration. Respond as appropriate. The Remote Console Switch or server is deleted.

    -or-

    Click **No** to cancel.

To delete a server type, site, department, or folder:

1   Select the server type, site, department, or folder you wish to delete from the **Group Selector** pane.

2   Select **Edit - Delete**.

    -or-

Press the <Del> key on your keyboard. A dialog box appears confirming the number of units that will be affected by this deletion.

3   Click **Yes** to confirm the deletion. Additional message prompts may appear depending on your configuration. Respond as appropriate. The element is deleted.

-or-

Click **No** to cancel.

To rename a unit, site, department, or folder:

1   Select the server type, site, department, or folder you wish to delete from the **Group Selector** pane in the RCS software.

2   Select **Edit - Rename**. The **Rename** dialog box appears.

3   Type a name from 1 to 32 characters long. Names are not case sensitive and can consist of any combination of characters entered from the keyboard. Spaces are permitted in the middle but leading and trailing spaces are not allowed. Duplicate names are not allowed, with two exceptions: department names can be duplicated across different sites and folder names can be duplicated across different levels.

4   Click **OK** to save the new name.

Customizing the Explorer Window

The RCS software **Explorer** window can be resized at any time. Each time you launch the application, the **Explorer** window opens to its default size and location. You can manually resize the window while the application is running, but the information is not saved. The next time Explorer is started, it will come up in its default size and location.

A split-pane divider that runs from top to bottom separates the **Group Selector** pane and the **Unit Selector** pane. You can move the divider left and right to change the viewing area of the **Group Selector** pane and the **Unit Selector** pane. Each time Explorer is started the divider will appear in its default location.

Modifying the Selected View on Startup

When **Default** is checked under the Selected view on startup option, the Explorer will determine which view to display. If you have one or more servers defined, the **Servers** tab will appear by default. If you do not, the Remote Console Switches tab will appear.

When **Default** is unchecked, the Explorer will display the view selected in the drop-down list shown below the check box. The drop-down list contains the following values: **Remote Console Switches**, **Servers**, **Sites**, and **Folders**. The drop-down list is only enabled when the check box is disabled.

To modify the selected view on startup:

1   Select **Tools - Options** from the Explorer menu in the RCS software. The **Options** dialog box appears.

2   Select **Remote Console Switches**, **Servers**, **Sites**, or **Folders** from the drop-down list.

3   Click **OK** to save the new startup view.

    -or-

    Click **Cancel** to exit without saving changes.

Changing the Default Browser

You can specify which browser launches when viewing a server URL in a browser window. You have the option of using the default browser for your system, or you can select a specific browser to launch for that server.

To change the default browser:

1   Select **Tools - Options** from the Explorer menu. The **Options** dialog box appears.

2   Click to disable the **Launch Default Browser** check box. The **Browse** button is enabled.

3   Click the **Browse** button and navigate to the browser.

4   Click **OK** to save the new browser selection.

-or-

Click **Cancel** to exit without saving changes.

Managing Your Local Databases

Each client workstation running the software contains a local database that records the information that you enter about your units. If you have multiple client workstations, you may wish to configure one station and then save a copy of this database and load it into the other stations to avoid having to reconfigure each station. You might also wish to export the database for use in another application.

Saving a Database

The RCS software allows you to save a copy of the local database. The saved database can then be loaded back to the same computer where it was created, or it can be loaded onto another client workstation. The saved database is compressed into a single Zip file.

While the database is being saved, no other activity is allowed, and all other windows must be closed. If other windows are open, a message will appear prompting you to either continue and close all open windows or quit and cancel the database save process.

To save a database:

1 Select **File - Database - Save** from the RCS Explorer menu. The **Database Save** dialog box appears.

2 Select a database to save.

3 Type a file name and browse to a location to save the file.

4 Click **Save**. A progress bar appears during the save. When finished, a message appears indicating that the save was successful and you are returned to the main window.

Loading a Database

This function allows you to load a database that was previously saved. No other activity is allowed, and all other windows must be closed. If other windows are open, a message appears prompting you to either continue and close all open windows or quit and cancel the database save process.

To load a database:

1   Select **File - Database - Load** from the Explorer menu. The **Database Load** dialog box appears.

2   Browse to select the database you wish to load.

3   Click **Load**. A progress bar appears during the load. When finished, a message appears indicating that the load was successful and you are returned to the main window.

Exporting a Database

This function allows you to export fields from the local database to an ASCII Comma Separated Value file (CSV) or Tab Separated Value file (TSV). The following database fields will be exported.

Remote Console Switch Flag

Type

Name

Address

Site

Department

Location

Description

Contact Name

Contact Phone #

Comments

Browser URL

Telnet Port

The first line of the exported file contains the column names for the field data. Each additional line contains the field data for a Remote Console Switch or server. The file will contain one line for each Remote Console Switch and server defined in the local database.

To export a database:

1   Select **File - Database - Export** from the Explorer menu. The **Database Export** dialog box appears.

2   Type a file name and navigate to the location where you wish to save the exported file.

3   Select the type of export format you wish from the **Files of Type** drop-down list.

4   Click **Export**. A progress bar appears during the export. When finished, a message appears indicating that the export was successful and you are returned to the main window.

4

Using the Viewer

You can connect to a server in the Remote Console Switch system using the Viewer. The Viewer allows you full keyboard, monitor, and mouse control over a server. You can also scan through a customized list of servers by enabling individual servers to appear in the **Thumbnail Viewer**. This view contains a series of thumbnail frames, each containing a small, scaled, non-interactive version of a server's screen image. For more information, see "Viewing Multiple Servers Using the Scan Mode" on page 79.

Accessing Servers from the RCS Software

The Servers tab in the RCS software displays a list of servers defined in the database. The **Group Selector** pane appears displaying a tree view containing all of the unique server types that are defined in the database. The **Group Selector** pane only appears if two or more server types are defined. You can either click **All Servers** or click on a folder to view all the servers of a particular type. When you select a server and click the **Connect Video** task button, the **Viewer** launches.

Figure 4.1: RCS Software - Servers Tab
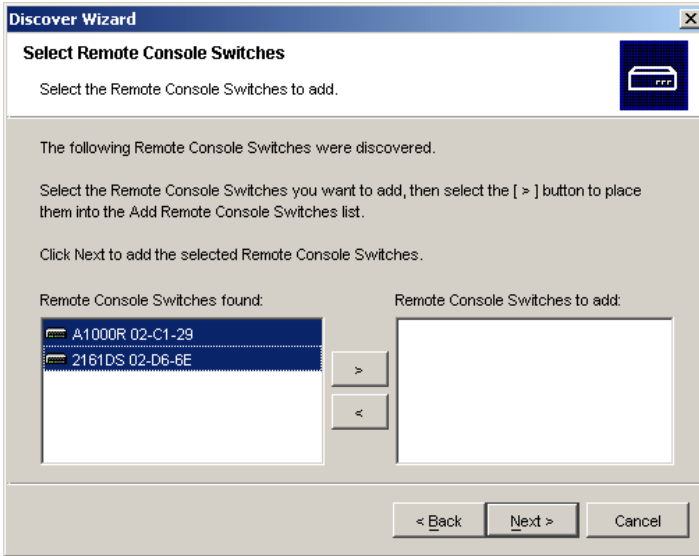
To access a server:

1   Click the **Servers** tab in the Explorer.

2   Select a server in the **Unit Selector** pane.

3   Click the **Connect Video** task button.

    -or-

    Right-click on the server. A pop-up menu appears. Select **Connect Video**.

    -or-

    Double-click the server name.

    -or-

    Press <Enter>. The **Viewer** launches in a new window.

To search for a server in the system:

1   Click the **Servers** tab and insert your cursor in the search text box.

2 Type the search information. This can be the server name or any information you have entered in the other **Unit Selector** list headings such as **Type** or **Location**.

3 Click the **Search** button. The results appear in the **Unit** list.

4 Review the results of your search.

-or-

Click the **Clear Results** button to display the entire list again.

# Interacting With the Server Being Viewed

Once you have connected to a server, you will see the desktop window of the server on your screen. This opens in a separate window. You will see two cursors, the local cursor and the server's cursor. You may need to align these if they do not move together or adjust the video if they seem to jump about. From this window, you will be able to access all the normal functions of this server as if you were sitting right in front of it. You may also perform **Viewer**-specific tasks such as sending special macro commands to the server.

NOTE: If you are experiencing slow mouse response during a remote video session, deactivate mouse acceleration in the operating system of the target device and set mouse speed to 50%.
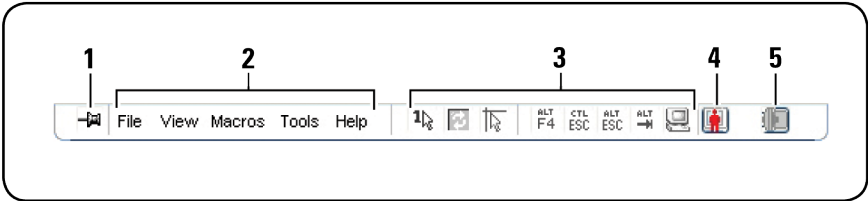
Viewer Window Features

Figure 4.2: Viewer Window
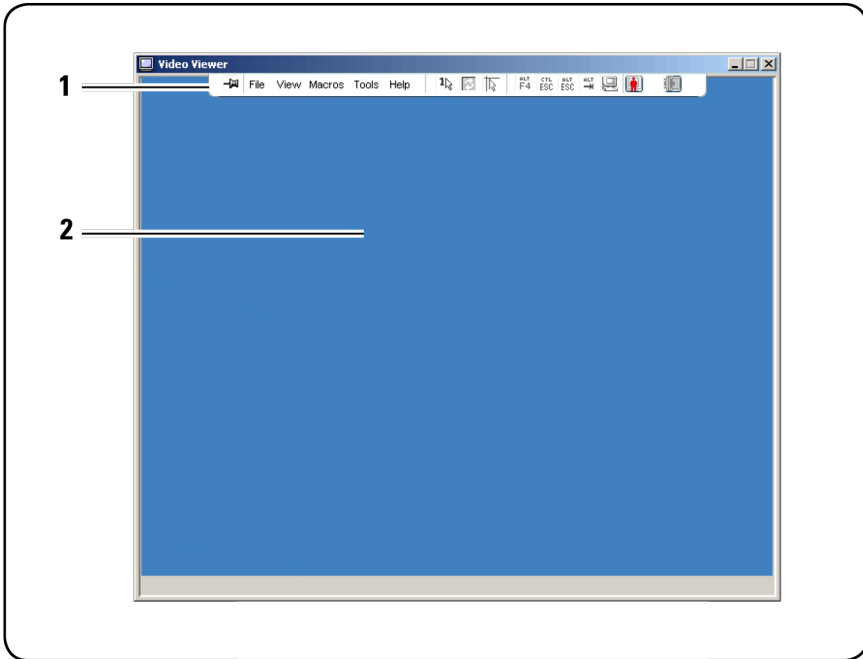
1   Menu bar: Access many of the features in the Viewer.

2   Accessed server desktop: Interact with your server through this window.

Viewer Menu Bar

Figure 4.3: Viewer Menu Bar

1   **Thumbtack:** Click to lock the menu bar in place. This prevents the menu bar from hiding once you have moved the mouse cursor away from the menu bar.

2   **Menu Options:** The menus provides access to functions available through the Viewer.

3   **Toolbar Buttons:** You may add up to 10 buttons to the tool bar. These buttons allow you to provide easy access to defined functions and keyboard macros. By default, the Align Local Cursor, Refresh Image, and Single Cursor Mode buttons are displayed.

4   **Connection Status Indicator:** The connection status indicator indicates how the user is connected to the appliance for this server. For more information see "Session Sharing Options" on page 87.

Table 4.1: Connection Status Indicators

Connection Status Indicator	Sharing Mode
	Exclusive Mode
	Active Connection (normal, non-sharing, non-exclusive session)

Connection Status Indicator	Sharing Mode
	Active Sharing (Primary User)
	Active Sharing (Secondary User)
	Passive Sharing
	Stealth Mode
	Scanning

5   **Smart Card Status Indicator:** The smart card status is indicated by the smart card icon at the far right side of the Video Viewer toolbar.

Table 4.2: Smart Card Status Indicators

Icon	Description
	A smart card is not in the smart card reader, or a smart card reader is not attached.
	A smart card is in the smart card reader but has not been mapped.
	A smart card is mapped.

Adjusting the Viewer

You can adjust the Viewer settings to match your requirements. This includes adjustment of the video resolution, toolbar settings, and keyboard macro settings.

Adjusting the Viewer Toolbar

You may add up to 10 buttons to the toolbar. These buttons allow you to provide easy access to defined function and keyboard macros. By default, the **Align Local Cursor**, **Refresh Image**, and **Single Cursor Mode** buttons are displayed.

To add buttons to the toolbar:

1   From the **Tools** menu in the Viewer, choose **Session Options**. The Session Options toolbar is displayed.

2   Click the **Toolbar** tab.

3   Click to select the items you want to add to the **Viewer** toolbar.

4   Click **OK** to accept the changes and return to the **Viewer** main window.

Figure 4.4: Session Options Dialog Box - Toolbar Tab
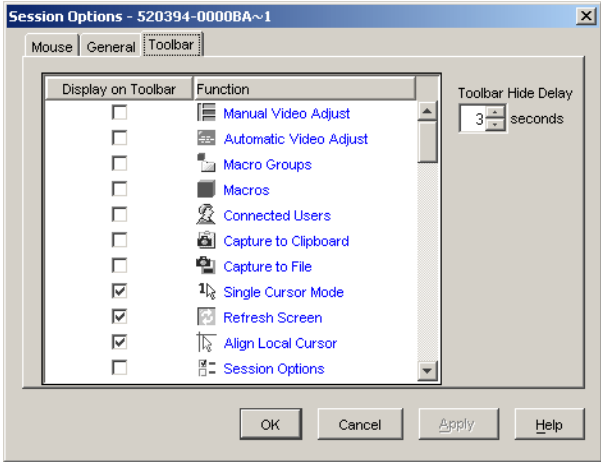
Setting the Toolbar Hide Delay Time

Unless the **Thumbtack** button has been clicked, the toolbar will disappear when you remove the mouse cursor. You can change the interval between the removal

of the mouse cursor and the disappearance of the toolbar by adjusting the **Toolbar Hide Delay** time.

To change the **Toolbar Hide Delay** time:

1 From the **Tools** menu in the **Viewer**, choose **Session Options**. The Session Options toolbar is displayed.

2 Click the **Toolbar** tab.

3 In the **Toolbar Hide Delay** field, type the number of seconds for which you want the toolbar to display, after the mouse cursor is removed.

  -or-

  Using the **Up** and **Down** button, click to increase or decrease the number of seconds for which you want the toolbar to display, after the mouse cursor is removed.

4 Click **OK** to accept the change you have made and return to the **Viewer** main window.

Expanding and Refreshing Your Viewer

By default, there are three buttons that display on the **Viewer** toolbar that allow you to adjust the **Viewer** display. The first button allows you to set the **Viewer** to **Single Cursor Mode**. This allows you to use the mouse in the Viewer as if it was the mouse on the server. When the Viewer is set to Single Cursor mode the local cursor is not displayed.

![NOTE icon] **NOTE:** Single Cursor mode operates on Windows platforms only.

The second button allows you to refresh the video and the third allows you to align the mouse cursors.

Figure 4.5: Viewer Toolbar- Display Adjustment Buttons

To set the Viewer to Single Cursor mode:

In the **Viewer** toolbar, click the **Single Cursor Mode** button.

To refresh the screen:

Click the **Refresh Image** button on the Viewer toolbar.

-or-

From the Viewer menu, select **View - Refresh**. The digitized video image will be completely regenerated.

To align the mouse cursors:

Click the **Align Local Cursor** button on the Viewer toolbar. The local cursor will align with the cursor on the remote server.

To enter full screen mode:

Click the **Maximize** button in the top right-hand corner of the **Viewer**.

-or-

From the **Viewer** menu, select **View - Full Screen**. The desktop window will disappear and only the accessed server desktop will be visible. The screen will be resized up to a maximum of 1600 x 1200 (standard) and 1680 x 1050 (widescreen). If the desktop has a higher resolution, then a black background will surround the full screen image. The floating toolbar will appear.

To exit full screen mode:

Press <Esc> to exit full screen mode and return to the desktop window.

Adjusting the Viewer Resolution

If **Auto Scale** is enabled, the display automatically adjusts when the **Viewer** window size changes during a session. When you access a channel using sharing, the display adjusts to match the input resolution selected by the primary user of that channel. This prevents the primary user's display from being affected. If the resolution changes any time during a session, the display is adjusted automatically.

When **Full Scale** is selected, the **Viewer** adjusts to the screen resolution of the server and sets the screen size accordingly, up to a maximum resolution of 1600 x 1200 (standard) and 1680 x 1050 (widescreen).

To adjust the size of the **Viewer** window:

From the menu bar, select **View - Scaling - Auto Scale** to allow the server image to be scaled automatically.

-or-

From the menu bar, select **View - Scaling - Full Scale**

-or-

Select a screen resolution from the **Scaling** sub-menu.

Figure 4.6: Viewer Scaling
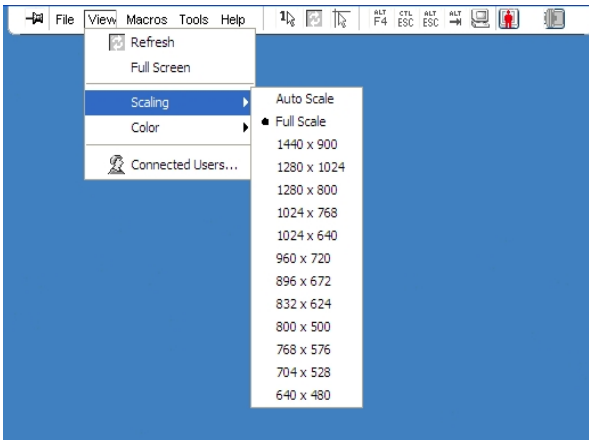
Adjusting the Video Quality

The **Viewer** offers both automatic and manual video adjustment capability. Generally, the **Automatic Video Adjustment** will optimize the video for the best possible view. However, you may wish to alter the video for your specific needs. Use the slider bar for large adjustments. The **Plus (+)** and **Minus (-)** buttons are designed for fine-tuning adjustments. For more information on manual video adjustment, please see Figure 4.7.

Adjusting Color Depth

NOTE: The Color command may only be used by the primary user. The command is not available to non-primary users who are sharing the session.

NOTE: If Background Refresh is enabled from the Session Options dialog, the color depth will be set automatically to Best Color Available and cannot be changed.

The Color sub-menu allows you to set the color depths at which the digital image can be compressed. The Remote Console Switches support the Dambrackas Video Compression (DVC) algorithm, which enables the RCS software users to adjust the number of viewable colors in a remote session window. You may choose to display more colors for the best fidelity, or fewer colors to reduce the volume of data transferred on the network.

The **Viewer** window can be viewed using the **Best Color Available (slower updates)**, **Best Compression (fastest updates)**, a combination of **Best Color** and **Best Compression**, or in **Grayscale**.

The color depths of individual ports and channels can be specified by selecting the **View - Color** command in a **Remote Session** window. These settings are saved individually per port and channel.

To set the color depth:

From the **View** menu, choose **Color** and select a color depth from the Color sub-menu.

To manually adjust the video quality of the **Viewer** window:

1   From the Viewer menu, select **Tools - Manual Video Adjust**. The **Manual Video Adjust** dialog box appears.

2   Click the icon for the feature you wish to adjust.

3   Move the slider bar or click the **Minus** (-) or **Plus** (+) buttons to adjust the parameter for each icon pressed. The adjustments will display immediately in the **Viewer** window.

4   When finished, click **Close** to exit the **Manual Video Adjust** dialog box.

Manual Video Adjust Dialog Box Options

Figure 4.7: Manual Video Adjust Dialog Box
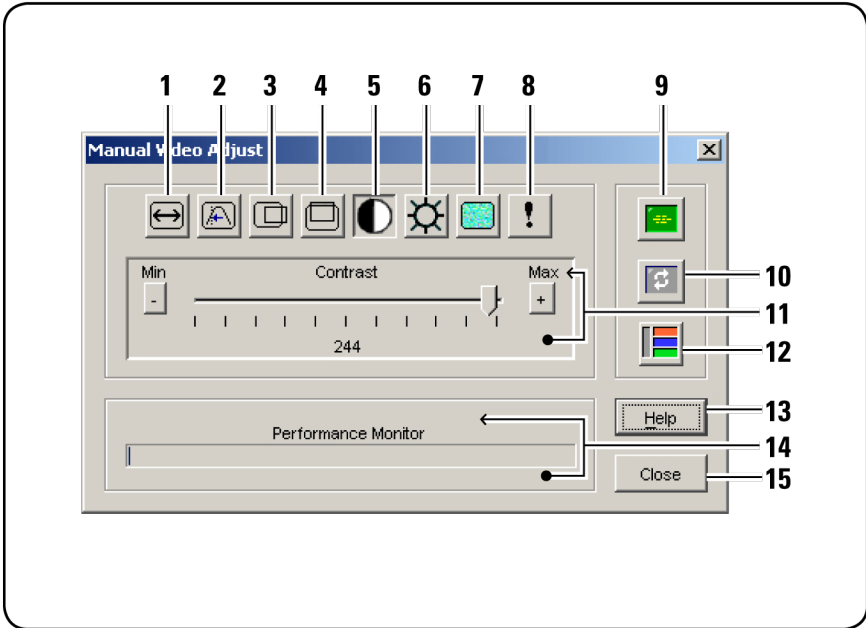
NOTE: If you use theon-board web interface to launch the Viewer, the Manual Video Adjust dialogbox will appear as shown above. If you use the RCS softwareto launch the Viewer, there will also be a Help button above the Close button.

1   Image Capture Width

2   Pixel Sampling Fine Adjust

3   Image Capture Horizontal Position

4   Image Capture Vertical Position

5   Contrast

6   Brightness

7   Noise Threshold

8   Priority Threshold

9   Automatic Video Adjustment

10   Refresh Image

11   Adjustment bar

12   Video Test Pattern

13   Help

14   Performance Monitor

15   Close box

Minimizing Remote Video Session Discoloration

When establishing remote video sessions, pixel discolorations may occur due to network conditions. This condition occurs most often with a solid color background. This condition is minimized by using a black background. If a color background is used, a small number of pixels on the screen will be discolored or white.

To minimize remote video pixel discoloration:

1   From the Viewer menu, select **Tools - Manual Video Adjust**. The **Manual Video Adjust** dialog box appears.

2   Choose contrast or brightness.

3   Incrementally, adjust the contrast and brightness until the image quality improves.

4   A noise threshold setting is also available under **Tools - Manual Video Adjust** for fine incremental adjustments.

NOTE: Reducing the noise threshold to zero causes constant video refresh, high network usage, and a flickering video. Dell recommends that the noise threshold be set to the highest level that allows efficient system performance, while still being able to recover pixel colors over which the mouse cursor travels.

NOTE: When adjusting the noise threshold, use the slider bar for large adjustments and the Plus (+) and Minus (-) buttons at the ends of the slider bar for fine-tuning.

Improving Screen Background Color Display

You may experience inconsistent color display when viewing target servers where photographic images or color-intense gradient backgrounds have been selected. We recommend that you select a solid color display background via the operating system for optimal display quality and performance.

Adjusting the Mouse

The Viewer allows you to select between five different mouse cursor options, set up mouse scaling, and resynchronize your mouse should it no longer track properly. Dell recommends turning off the local cursor by setting the **Local Cursor** option to **None**. This will leave only one cursor on the screen, the remote cursor, and will simplify navigation.

Figure 4.8: Viewer Mouse Session Options dialog box
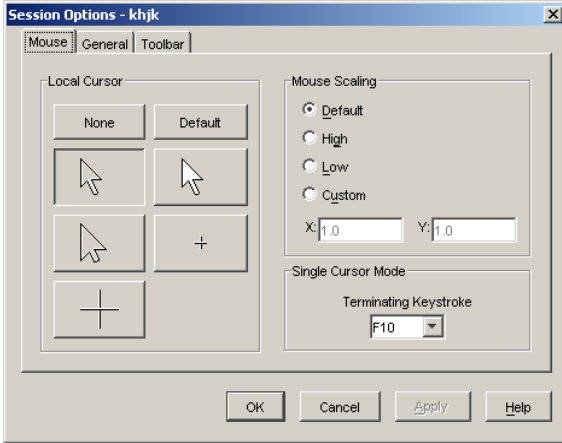
Setting Mouse Scaling

You can choose between three preset mouse scaling options or set your own custom scaling. The three preset settings are: **Default** (1:1), **High** (2:1), or **Low** (1:2). In a 1:1 scaling ratio, every mouse movement on the desktop window will send an equivalent mouse movement to the server. In a 2:1 scaling, the same mouse movement will send a 2X mouse movement. In a 1:2 scaling, the value will be 1/2X.

To set custom mouse scaling:

1   From the **Viewer** menu, select **Tools - Session Options**. The **Session Options** dialog box appears.

2   Click the **Mouse** tab.

3   Click the **Custom** radio button. The **X** and **Y** fields become enabled.

4   Type the mouse scaling values you wish in the **X** and **Y** fields. For every mouse input, the mouse movements are multiplied by the respective X and Y scaling factors. Valid input ranges are 0.25 to 3.00.

Minimizing Mouse Trailing

During a remote video session, as the mouse moves on the screen, some pixels will remain discolored. This condition is referred to as mouse trailing, and is due to varying levels of network and other noise in different environments. To minimize mouse trailing, you may need to reduce the **Noise Threshold** in the **Manual Video Adjust** dialog box.

To reduce the Noise Threshold:

1   From the Viewer menu, select **Tools - Manual Video Adjust**. The **Manual Video Adjust** dialog box appears.

2   Click the **Noise Adjust Threshold** icon for the feature you wish to adjust.

3   Using the mouse, move the slider bar to the center of the scale, and then down to zero.

4   Use the **Plus (+)** and **Minus (-)** buttons at the end of the slider bar to fine-adjust the noise threshold to just above zero.

   NOTE: Leaving the noise threshold at zero triggers constant video refresh, resulting in high network usage and a flickering video. It is recommended that the noise threshold be set at the highest level that allows efficient system performance, while still being able to recover pixel colors that the mouse cursor travels over.

   NOTE: When adjusting the noise threshold, the slider bar is used for large adjustments and the Plus (+) and Minus (-) buttons at either end of the slider bar for fine-tuning.

Improving Mouse Performance

If you are experiencing slow mouse response or if the mouse pointers get out of sync during a remote video session, you may want to deactivate the mouse acceleration in the operating system of the target server.

Microsoft Windows:

1   Turn off mouse acceleration

2   Adjust mouse speed to the exact midpoint of the slider bar.

NOTE: See the documentation included with your Windows operating system for specific instructions.

Red Hat Linux:

1   Select the **Mouse** settings from the **Desktop Controls**.

2   Set **Acceleration** to 1.0.

3   Apply the changes and use the **Align Local Cursor/Mouse** button in the **Viewer** to resynchronize the mouse.

Reducing Mouse Cursor Flickering

If the video driver on the RCS software client machine does not support DirectDraw® and the DirectDraw option in the RCS software has been activated, the mouse cursor will flicker on the screen. The RCS software factory default has DirectDraw disabled. If the video driver on the client system supports DirectDraw and the additional performance is desired, follow the instructions below to enable DirectDraw.

To enable or disable DirectDraw:

1   In the Explorer window, select **Tools - Options**.

2   Click to enable or disable the **DirectDraw** check box.

3   Click **OK**.

4   Restart the RCS software.

Viewing Multiple Servers Using the Scan Mode

The Viewer allows you to simultaneously view multiple servers through the Thumbnail Viewer of the Scan mode. This view contains a series of thumbnail frames, each containing a small, scaled, non-interactive version of a server's screen image. The server name displays below each thumbnail as well as the status indicator.

Scanning Your Servers

Using the Thumbnail Viewer, you can set up a scan sequence of up to 16 servers to monitor your servers. The scan mode moves from one thumbnail image to the next, logging into a server and displaying an updated server image for a user-specified length of time (**View Time Per Server**), before logging out of that server and moving on to the next thumbnail image. You can also specify a scan delay between thumbnails (**Time Between Servers**). During the delay, you will see the last thumbnail image for all servers in the scan sequence, though you won't be logged into any servers.

An indicator light at the bottom of each frame displays the status of the server. The default thumbnail size is based on the number of servers in the scan list.

Figure 4.9: Viewer - Thumbnail Viewer
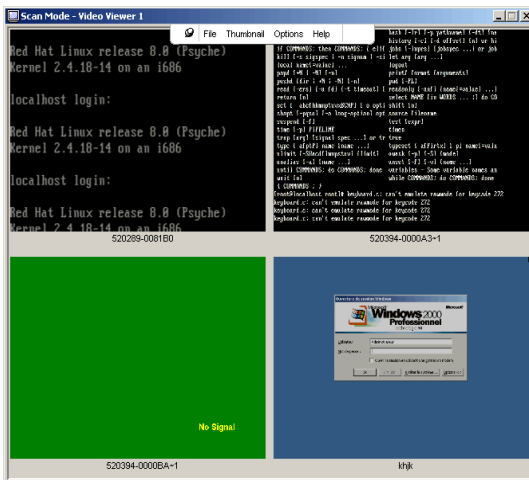
Scan mode is a lower priority than an active connection. If you have an interactive session with a server, that server will be skipped in the scan sequence and the scan mode will proceed to the next server. No login error messages will appear. Once the interactive session is closed, then the thumbnail will be included in the scan sequence again. If another user has an active connection to

a server, the server will be skipped and a red "X" will be displayed in the indicator light below the frame.

The RCS software can scan connected servers on multiple Remote Console Switches.

Accessing Scan Mode from the RCS Software

Figure 4.10: RCS Software- Scanning Servers
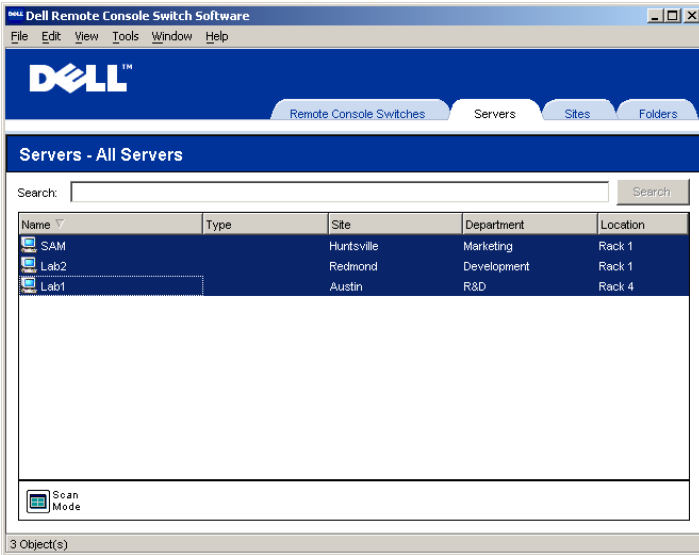
To access the Scan mode in the RCS software:

1   In the Explorer, select the **Remote Console Switches**, **Servers**, **Sites**, or **Folders** tab.

2   Select two or more servers in the **Unit Selector** pane by pressing the <Shift> key.

    -or-

    Press the <Ctrl> key. The **Scan Mode** task button appears.

3   Click the **Scan Mode** task button. The **Thumbnail Viewer** window appears.

Thumbnail View Status Indicators

The green LED indicates that a server is currently being scanned. The red X indicates that the last scan of the server was not successful. The scan may have failed due to a credential or path failure (the server path on the Remote Console Switch was not available), or because of some other reason. When the mouse pointer is placed on the red X a tool tip appears and indicates the reason for the failure. Setting up your Scanning Preferences

To set scan preferences:

1   From the Thumbnail Viewer, select **Options - Preferences**. The **Preferences** dialog box appears.

2   Enter the time each thumbnail will be active during the scan (10 to 60 seconds) in the **View Time Per Server** box.

3   Enter the length of time the scan stops between each server (5 to 60 seconds) in the **Time Between Servers** box.

4   Click **OK**.

Navigating the Thumbnail Viewer

When you highlight an individual thumbnail frame and select the Thumbnail menu, you can launch an interactive session to that server, add that server to the scan sequence or set the login credentials for that server. The Options menu allows you to access scanning preferences as well as pause the scan and set the thumbnail size for all servers.

To launch a server Video session:

1   Select a server thumbnail.

2   From the Thumbnail Viewer, select **Thumbnail - [server name] - View Interactive Session**.

    -or-
    Right-click a server thumbnail and select **View Interactive Session**.
    That server's video will be launched in an interactive **Viewer** window.

To enable or disable a server in the scan sequence:

1   Select a server thumbnail.

2   From the Thumbnail Viewer, select **Thumbnail - [server name] - Enable**.

-or-

Right-click a server thumbnail and select **Enable**. That server will be included/excluded in the server thumbnail scan sequence.

> **NOTE:** The Enable menu item state can be toggled from checked (enabled) to unchecked (disabled) each time it is selected.

> **NOTE:** If a server is being accessed by a user, the Enable menu will be disabled for that server thumbnail.

To pause or restart a scan sequence:

From the Thumbnail Viewer, select **Options - Pause Scan**. The scan sequence will pause at the current thumbnail if the Thumbnail Viewer has a scan in progress or will restart the scan if currently paused.

To change the thumbnail size:

1   From the Thumbnail Viewer, select **Options - Thumbnail Size**.

2   Select the desired thumbnail size from the menu.

Using Macros to Send Keystrokes to the Server

The Macros menu in the Viewer allows you an easy way to send multiple keystrokes to the server. The Viewer provides a list of available keystroke selections for Microsoft Windows, Sun, and Linux systems.

To choose which system you are using:

Click the **Macro** menu in the Viewer. Select **Display on Menu**, and select either **Windows**, **Sun**, or **Linux**.

To send keystrokes to the server:

Click the **Macro** menu in the Viewer and choose the name of the macro containing the keystrokes you wish to send to the server. Figure 4.11, Figure 4.12, and Figure 4.13 show the available macros.

Figure 4.11: Viewer Macro Menu Expanded - Windows Option
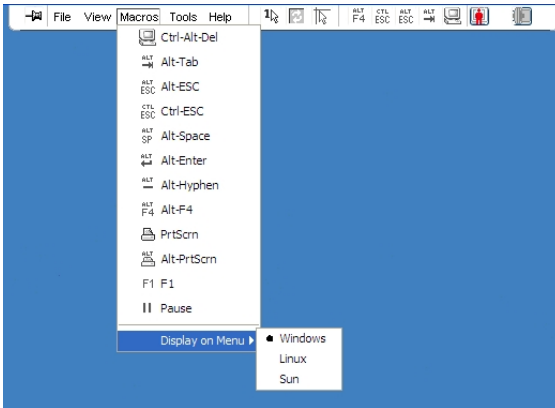
Figure 4.12: Viewer Macro Menu Expanded - Sun Option
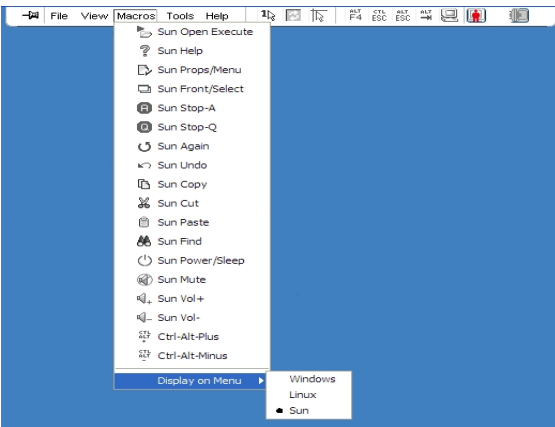
Figure 4.13: Viewer Macro Menu Expanded - Linux Option
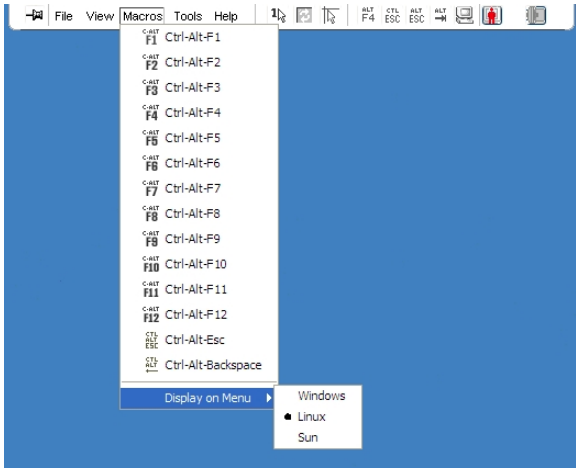
Session Options - General Tab

The **General** tab in the Session Options dialog box allows you to control the **Keyboard Passthrough** option in non-full screen mode, the **Menu Activation Keystroke**, and the **Background Refresh** selection.

The **Keyboard Pass-through** check box allows you to specify whether **Keyboard Pass-through** mode is enabled, or not. The **Keyboard Pass-through** option is not selected by default.

Figure 4.14: Session Options - General Tab
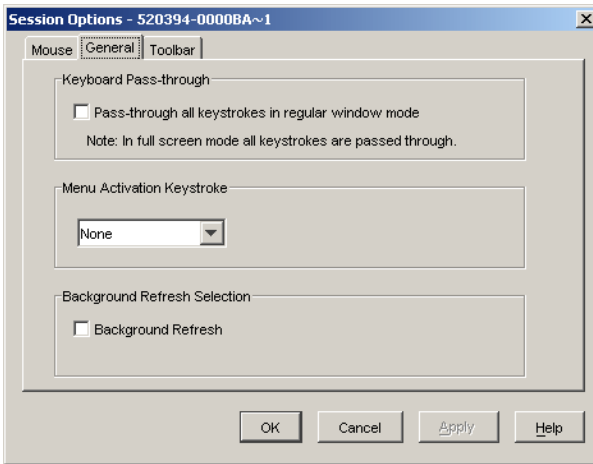
The **Menu Activation Keystroke** list (None, Pause, and F1-F12) allows you to select a keystroke that activates the toolbar.

The **Background Refresh** check box allows you to specify whether background refreshing occurs. When this option is selected the **Viewer** is sent a constant stream of data from the device whether or not a change has occurred on the device.

To change session options:

1   From the **Tools** menu in the **Viewer**, choose **Session Options**. The Session Options toolbar is displayed.

2   Click the **General** tab.

3   Modify the session options as desired.

4   Click **OK**.

Screen Capturing

The **Viewer** allows you to capture the contents of the screen and to save it to a file or to copy it to the clipboard.

To capture a screen as a file:

1 In the **Viewer**, choose **File - Capture to File**. The **Save** dialog is displayed.

2 Browse to the location where you want to save the file.

3 In the **File Name** field, type a file name and click **Save**.

To copy a screen to the clipboard:

In the **Viewer**, choose **File - Capture to Clipboard**. The image is saved to the clipboard and can be pasted into a document or image editing application.

NOTE: The Capture to Clipboard function is not available in Linux.

Session Sharing Options

NOTE: For Dell 1081AD and 2161AD switches the optional Dell Remote Access Key is required to support session sharing.

Session sharing can be configured by Admin and other users with Appliance Administrator or User Administrator rights. The first user with a KVM session with a target device is called the primary user. If another (secondary) user attempts to start a KVM session with the same target device, options for the secondary user depend on the following two conditions:

• The access rights of the two users

• Whether an administrator has configured global connection sharing

Automatic Sharing, Exclusive Connections, and Stealth Connections all are configurable options that require connection sharing to be enabled.

Automatic Sharing

Connection sharing allows multiple users to interact with a target device at the same time. When you are a primary user, you may be notified by a dialog box that another user would like to share your connection. You may select **Yes** to

accept sharing, **No** to reject sharing, or click the **Passive Share** box to allow the new user to share without having any control over the connection.

When you attempt to open a Video session with a device that is already being viewed by another user, you are notified that the device is already being viewed. Depending on the configuration of sharing settings, you may be offered the option to share or preempt the video session. You may also be offered the option to open a stealth Video session.

Access to the device is governed by the nature of the current user's connection to the device. There are two types of Video session users: a Primary user and up to 11 simultaneous Secondary users. Only the Primary user can accept or reject preemption requests for all users sharing a connection. The Primary user also maintains control of video parameters and the display resolution of the Video session.

Secondary users may be either Active users who have the ability to input mouse and keyboard data, or Passive users who may not input mouse and keyboard data.

If **Automatic Sharing** is enabled on the Remote Console Switch, Secondary Users do not need the permission of the Primary User to join the session.

If a Primary user leaves the session, then the oldest Secondary user with Active user privileges will become the Primary user. If there are no Secondary users with Active user privileges sharing the session when the Primary user leaves the session, then the session will be closed.

Multiple users can view and interact with a target device using digital share mode. When a session is shared, the secondary user can be an active user with keyboard and mouse control or a passive user that does not have keyboard and mouse control.

To configure a switch to share KVM sessions, complete the following steps:

1   Click the **Appliances** button in the Explorer.

2   Complete one of the following steps:

   • Double-click on a Remote Console Switch in the Unit list.

- Select a Remote Console Switch from the Unit list, then click the Manage Appliance button.

- Right-click on a Remote Console Switch in the Unit list. Select **Manage Appliance** from the pop-up menu.

- Select a Remote Console Switch in the Unit list and press Enter.

3   Select the **Global - Sessions** subcategory.

4   Select **Enable Share Mode** in the **Connection Sharing** area.

5   You can choose to select **Automatic Sharing**. This enables secondary users to automatically share a KVM session without first requesting permission from the primary user.

To share a digital connection, complete the following steps:

1   Click the **Devices** button in the Explorer.

2   Complete one of the following steps:

- Double-click on the target device in the Unit list.

- Select the target device, then click the **Connect Video** button.

- Right-click on the target device. Select **Connect Video** from the pop-up menu.

- Select the target device and press Enter.

When another user is viewing this target device, a message indicates that the target device is already involved in a KVM session.

If connection sharing is enabled on the switch and your access rights (as compared with those of the primary user) allow it, you are prompted to either share or preempt the existing session.

1   If the option is available, select **Share**.

2   Complete one of the following steps:

- Click **OK** or **Yes**. If Automatic Sharing is not enabled, a share request is sent to the primary user, who can accept the share request as either an active or passive (read-only) session, or reject the share request entirely.

- Click **No** to cancel the share request.

If the primary user accepts the share request, or if Automatic Sharing is enabled, a KVM session to the target device session opens, and the session type icon within the new Video Viewer window indicates if the session status is active or passive. If the request is rejected, a message indicates that the request was denied. Administrators have several options at this point. They can either try to connect again and preempt the session or connect in stealth mode, or they can terminate the session entirely.

If you are not prompted to connect in share mode, either the switch to which the target device is connected is not configured to allow digital share mode sessions or it is not a Remote Console Switch.

Exclusive Mode

If session sharing and exclusive connections are enabled, you can create an exclusive KVM session. When operating a session in exclusive mode, you cannot receive any share requests from other users. However, administrators can choose to preempt (or terminate) the session or monitor the session in stealth mode.

If other users are sharing the session when you select **Exclusive Mode**, you are warned that selecting **Exclusive Mode** will cause the other users to become disconnected from the session.

NOTE: Only the Primary user can request an Exclusive session. If other users are sharing at the time Exclusive Mode is requested, they are disconnected, regardless of the Primary users access level.

To enable exclusive KVM sessions on a switch, complete the following steps:

1 Click the **Appliances** button in the Explorer.

2 Complete one of the following steps:

- Double-click on a Remote Console Switch in the Unit list.

- Select a Remote Console Switch from the Unit list, then click the **Manage Appliance** button.

- Right-click on a Remote Console Switch in the Unit list. Select **Manage Appliance** from the pop-up menu.

- Select a Remote Console Switch in the Unit list and press Enter.

1 Select the Global - Sessions subcategory.

2 Select the **Enable Shared** Sessions check box in the Connection Sharing area.

3 Select **Exclusive Connections** in the **Connection Sharing** area.

Only the primary user of a shared connection or the only user of a non-shared session can access the Video Viewer in exclusive mode.

To access the Video Viewer in exclusive mode, complete the following steps:

1 Open a KVM session to a target device.

2 Select T**ools - Exclusive Mode** from the Video Viewer toolbar.

3 If the KVM session is currently shared, only the primary user can designate the session as exclusive. A message warns the primary user that secondary sessions will be terminated if an exclusive session is invoked.

   Complete one of the following steps:

- Select **Yes** to terminate the sessions of the secondary users.

- Select **No** to cancel the exclusive mode action.

Secondary users cannot share the exclusive KVM session. However, administrators or users with certain access rights can still terminate the session.

Stealth Connection

Administrators can connect to a target device in stealth mode to view the video output of a remote user undetected. When in stealth mode, the administrator does not have keyboard or mouse control over the target device.

To enable stealth KVM sessions on a switch, complete the following steps:

1   Click the **Appliances** button in the Explorer.

2   Complete one of the following steps:

- Double-click on a Remote Console Switch in the Unit list.

- Select a Remote Console Switch from the Unit list, then click the **Manage Appliance** button.

- Right-click on a Remote Console Switch in the Unit list. Select **Manage Appliance** from the pop-up menu.

- Select a Remote Console Switch in the Unit list and press Enter.

3   Select the **Global - Sessions** subcategory.

4   Select **Stealth Connections** in the **Connection Sharing** area.

To monitor a target device in stealth mode, complete the following steps:

1   Click the **Devices** button in the Explorer.

2   Complete one of the following steps:

- Double-click on the target device in the Unit list.

- Select the target device, then click the **Connect Video** button.

- Right-click on the target device. Select **Connect Video** from the pop-up menu.

- Select the target device and press Enter.

3   If another user is already viewing this target device, a message indicates that the target device is already involved in a KVM session.

If connection sharing and stealth connections are enabled on the switch and your access rights (as compared with those of the primary user) allow it, you are prompted to either share or preempt the existing session. If the option is available, select **Stealth**.

4   Complete one of the following steps:

- Click **OK** or **Yes**.

- Click **No** to cancel the stealth request.

A KVM session to the target device opens, and the administrator can view all video output of the target device while remaining undetected.

If Stealth is not listed as an option, one of the following conditions exist:

- the switch to which the target device is connected is not configured to allow Stealth Connections

- you do not have the necessary access rights (Stealth permissions follow Preemption permissions)

- the switch the target device is connected to is not a Remote Console Switch

Preemption Mode

Preemption provides a means for users with sufficient privilege to take control of a server from another user with lesser or equal privilege.

NOTE: All users sharing the connection that is being preempted will be warned, but only the primary user will be able to reject the preemption (if allowed).

Table 4-3 outlines the preemption scenarios and detailed scenarios in which preemption requests can be rejected. For information about preemption and reserved or locked virtual media sessions, see "Session Sharing Options" on page 87.

Table 4.3: Preemption Scenarios

Current User	Preempted by	Preemption can be rejected
Remote User	Local User	No
Remote User	Remote Administrator	No
Remote User	Remote Console Switch Administrator	No

Current User	Preempted by	Preemption can be rejected
Remote Console Switch Administrator	Local User	Yes
Remote Console Switch Administrator	Remote Console Switch Administrator	Yes
Remote Administrator	Local User	No
Remote Administrator	Remote Administrator	Yes
Remote Administrator	Remote Console Switch Administrator	No
Local User	Remote Administrator	Yes
Local User	Remote Console Switch Administrator	Yes

Preemption of a Remote User by a Remote Administrator

If a remote administrator attempts to access a server that is being accessed by a remote user, a message appears asking that the administrator wait while the user is informed that they will be preempted. The remote user cannot reject the preemption request and will be disconnected. The time period given before disconnection is defined by the Video session preemption timeout setting in the Session dialog box.

NOTE: No time period will be displayed in cases where the server being viewed is attached to an Avocent switch.

Preemption of a Local User/Remote Administrator by a Remote Administrator

If an administrator attempts to access a server that is being accessed by the local user or by another remote administrator with equal privileges, the currently

connected user can accept or reject the preemption request. A message appears asking the connected local user or remote administrator whether they want to accept the preemption request. If the preemption request is rejected a message appears informing the remote administrator that their request has been rejected and that they cannot access the server.

> **NOTE:** If the server being viewed is attached to an Avocent switch, the user is not given the option to accept or reject preemption.

> **NOTE:** In scenarios where a preemption request can be rejected, the Session Preemption Request dialog box will appear. This dialog allows you to accept the preemption request by clicking the Accept button or to reject the preemption request by clicking the Reject button or by closing the dialog box.

To preempt the current user, complete the following steps:

1   Click the **Devices** button in the Explorer.

2   Complete one of the following steps:

   • Double-click on the target device in the Unit list.

   • Select the target device, then click the **Connect Video** button.

   • Right-click on the target device. Select **Connect Video** from the pop-up menu.

   • Select the target device and press Enter.

   When another user is viewing this target device, a message indicates that the target device is already involved in a KVM session.

   If the switch has connection sharing enabled, you are given the option to share the session. For information about connection sharing, see "Preemption Mode". If your access rights (as compared with those of the primary user) allow it, you are prompted to either share or preempt the existing session.

3   If the option is available, select **Preempt**.

4   Complete one of the following steps:

- Click **OK** or **Yes**. A preemption notification is sent to the primary user. Depending on your access rights, the primary user might be able to reject the preemption.

- Click **No** to let the primary user retain the connection.

5   If the preemption completes, the Video Viewer of the target device session opens.

Virtual Media

With virtual media support, a USB media device can be connected directly to the appliance USB ports and made available to any target device that is connected to the appliance. The virtual media can also be accessed remotely. Remote media sessions use devices attached directly to the client computer.

Virtual media allows you to view, move, or copy data located on virtual media to and from any server. You can manage remote systems more efficiently by allowing operating system installation, operating system recovery, hard drive recovery or duplication, BIOS updating, and server backup.

Any user operating a KVM session can access any media device that is mapped to that target device. To avoid the security risk of unauthorized user access, you can lock a virtual media session to a KVM session.

To change the media in a virtual media device, you must first unmap the virtual media device. You can then insert the new media and remap the virtual media device. The media will be available in the new virtual media session.

The following are requirements for virtual media support.

- You can have one DVD-ROM drive and one mass storage device mapped concurrently.

  - A CD/DVD-ROM drive, or ISO disk image file is mapped as a virtual DVD drive.

  - A diskette drive, diskette image file, USB memory device, or other media type is mapped as a virtual mass storage device.

- To use virtual media on a given server, a Dell USB2 SIP, Dell USB2+CAC SIP, Avocent MPUIQ-VMC, DSAVIQ-PS2M, or DSAVIQ-USB2 module must be used to connect that server to the KVM.

- A virtual media session cannot be opened to a server that is connected to a passive expansion module.

- The target device must support the types of USB2-compatible media that you virtually map. In other words, if the target device does not support a portable USB 2.0 memory device, you cannot map the local device as a virtual media drive on the target device.

- You (or the user group to which you belong) must have permission to establish virtual media sessions or reserved virtual media sessions to the target device.

- A 1082DS will support up to three concurrent virtual media sessions (including local and remote). A 2162DS will support up to four concurrent virtual media sessions (including local and remote). A 4322DS will support up to six concurrent virtual media sessions (including local and remote). Only one virtual media session can be active to a target device at one time.

Sharing and Preemption

The KVM and virtual media sessions are separate; therefore, there are many options for sharing, reserving, or preempting sessions.

For example, the KVM and virtual media sessions can be locked together. In this mode, when a KVM session is disconnected, so is the associated virtual media session. If the sessions are not locked together, the KVM session can be closed but the virtual media session remains active.

After a target device has an active virtual media session without an associated active KVM session, either the original user (User A) can reconnect or a different user (User B) can connect to that channel. You can set an option in the Virtual Media window (Reserved) that lets only User A access the associated target device with a KVM session.

If User B has access to that KVM session (the Reserved option is not enabled), User B could control the media that is being used in the virtual media session. In some environments, this might not be desirable.

By using the Reserved option in a tiered environment, only User A can access the lower appliance and the KVM channel between the upper appliance and lower appliance is reserved for User A.

Preemption levels offer additional flexibility of combinations. See "Preemption Mode" on page 93.

Launching Virtual Media

Virtual media is launched remotely from the appliance using the Viewer, which may be launched from the on-board web interface or the RCS software. The virtual media client will allow a user to map a local drive to a virtual drive on the target server.

To launch virtual media from the RCS software:

1 Launch the Viewer from the software. (See "Using the Viewer" on page 63 for more information.)

2 Select **Tools - Virtual Media**.

3 If you want to make this a reserved session, on the Virtual Media window click **Details**, then select the **Reserved** check box.

There are two devices available for mapping on the target server: a floppy/flash drive or a CD/DVD drive. The virtual media client allows one of each to be mapped at a time. Alternatively, the virtual media client will also allow a floppy image (*.img) file or a CD image (*.iso) file to be mapped to a virtual device.

The virtual media interface consists of three main areas: the Floppy Drive section, the CD/DVD section, and the Status section. If the virtual media session is locked to a KVM session, there will be a locked icon at the top right of the virtual media client screen.

Mapping Virtual Media Drives

To map a virtual media drives:

1 Open a virtual media session from the Video Viewer toolbar by selecting **Tools - Virtual Media**.

2 To map a physical drive as a virtual media drive, complete the following steps:

    a. In the Virtual Media window, select the **Mapped** check box next to the drive or drives you want to map.

    b. If you want to limit the mapped drive to read-only access, select the **Read Only** check box next to the drive prior to mapping the drive. If the virtual media session settings were previously configured so that all mapped drives must be read-only, this check box is already enabled and cannot be changed.

       You might want to select the **Read Only** check box if the session settings enabled read and write access, but you want to limit the access of a particular drive to read-only.

3 To add and map an ISO or diskette image as a virtual media drive, complete the following steps:

    a. In the Virtual Media window, click **Add Image**.

    b. The Common File Chooser window opens, with the directory containing disk image files (ending in .iso or .img) visible. Select an ISO or diskette image file and click **Open**.

    c. The file header is checked to make sure it is correct. If it is, the Common File Chooser window closes and the chosen image file opens in the Virtual Media window, where it can be mapped by selecting the Mapped check box.

    d. Repeat steps a through c for any additional ISO or diskette images you want to add. You can add any number of image files (up to the limits imposed by memory), but you can only have one virtual DVD-ROM or virtual mass storage mapped concurrently.

       If you attempt to map too many drives (one DVD and one mass storage device) or too many drives of a particular type

(more than one DVD or mass storage device), a message is displayed. If you still want to map a new drive, you must first unmap an existing mapped drive, then map the new drive. After a physical drive or image is mapped, it can be used on the target device.

To unmap a virtual media drive:

Eject the mapped drive from the target device. Clear the Mapped check box.

Virtual Media Connection Status

The status section displays specific information about the virtual media connections. If there is no current connection, the columns will read "No connection" or "n/a" as applicable.

To display virtual media drive status, complete the following steps:

1   In the Virtual Media window, click **Details**. The window expands to display the Details table. Each row indicates:

   - Target Drive - the virtual device connected to the target server

   - Connected To - the name of the local drive connected to the virtual device

   - Read Bytes - the number of bytes read by the target server from the local device

   - Write Bytes - the number of bytes written to the local device by the target server

   - Duration - Elapsed time since the drive was mapped.

2   To close the Details view, click **Details** again.

Virtual Media Sessions

A virtual media session is when two USB connections are made through a single cable. These connections are visible to the computer as a USB CD/DVD drive or a USB mass storage device. Virtual media session settings are Locked, Mapped drive access, and Encryption level.

- **Locked** - A virtual media session that is associated with a specified KVM session. If the KVM session is closed, the virtual media session will end. (For example, if the KVM session is preempted, closed by a user, or stopped when the screen saver starts, the appliance will close the associated virtual media session). However, closing a locked virtual media session will not close the corresponding KVM session.

- **Mapped drive access** - You can set the access mode for mapped drives to read-only. When the access mode is read-only, you cannot write data to the mapped drive on the client computer. When the access mode is not set as read-only, you can read and write data from or to the mapped drive. If the mapped drive is read-only by design (for example, certain CD drives, DVD drives, or ISO images), the configured read-write access mode is ignored. Setting the read-only mode can be helpful when a read-write drive such as a mass storage device or a USB removable media is mapped, and you want to prevent the user from writing data to it.

- **Encryption level** - You can configure up to three encryption levels for virtual media sessions. Any combination is valid. The choices are: AES, DES, 3DES, and 128-bit RC4 (ARCFOUR) SSL encryptions. The highest level selected is used. The default is no encryption (no encryption levels selected).

Reserving a Virtual Media Session

A virtual media session can also be reserved to allow only a specified user name or administrator to access or close a session. If you want to continue a virtual media session after the KVM session is closed, you can reserve the virtual media session. If the virtual media session is reserved, it will remain active when the associated KVM session is closed.

To reserve a virtual media session:

On the Virtual Media window, click **Details** and select the **Reserve** check box.

Resetting the USB Bus

The USB reset feature resets every USB device on the target device, including the mouse and keyboard. It should only be used when the target device is not

responding.

To reset the USB bus:

1   In the Virtual Media window, click **Details**.

2   Select **USB Reset**.

Closing a Virtual Media Session

To close the Virtual Media window, complete the following steps:

1   Click **Exit** or **X** to close the window.

2   If you have any mapped drives, a message indicates that the drives will be unmapped. Click **Yes** to confirm and close the window or click **No** to cancel the close.

If you attempt to disconnect an active KVM session that has an associated locked virtual media session, a confirmation message indicates that any virtual media mappings will be lost.

Virtual Media and USB2 Constraints

The virtual media feature of the Remote Console Switch enables you to connect to the USB port of an attached device. With this feature, a user located at the switch or using the RCS software can access a local USB storage device, such as a USB CD/DVD-ROM drive, diskette drive, or flash drive, from an attached computer.

The USB2 SIP is a composite device that addresses four functions: keyboard, mouse, DVD drive, and mass storage device. The CD/DVD drive and mass storage device will be present on the target device whether or not a virtual media session is mapped. If a media device is not mapped, it is shown without media present. When a virtual media device is mapped to the target device, the target device will be notified that media has been inserted. When the media device is unmapped, the target device will be notified that the media was removed. Therefore, the USB2 virtual device is not disconnected from the target device.

The USB2 SIP presents the keyboard and mouse as a composite USB2 device. Therefore, the BIOS must support a composite USB 2.0 human interface device

(HID). If the BIOS of the connected computer does not support this type of device, the keyboard and mouse might not work until the operating system loads USB 2.0 device drivers. If this occurs, there might be a BIOS update provided by the computer manufacturer that will provide BIOS support for a USB 2.0 connected keyboard and mouse.

Booting a Computer Using Virtual Media

In many cases the virtual media feature can boot an attached computer from a device attached to the USB port on the switch. Most computers with a USB port can use virtual media; however, limitations in some USB media devices and the BIOS of some computers might prevent the computer from booting from a USB device attached to the Remote Console Switch.

Booting from a virtual USB device is dependant on the target device supporting booting from an external composite USB device. It also requires a CD/DVD of the operating system that supports external USB 2.0 booting. The following is a partial list of operating systems that support booting from an external USB 2.0 device:

- Windows Server 2003

- Windows XP

- Windows 2000 Server with Service Pack 4 (SP4) or later

To determine if your computer can be booted from virtual media, complete the following steps:

1   Connect a USB CD/DVD-ROM drive to the Remote Console Switch with an operating system installation CD/DVD that is bootable, and map it to the target device. Reboot the target device to determine if it will boot from this attached CD/DVD drive. The BIOS might need to be set to boot from an external USB device.

2   If the target device will not boot, connect the USB CD/DVD drive to a USB port on the target device and reboot the target device. If the target device successfully boots from the CD/DVD drive, the BIOS is not supporting booting from a composite USB 2.0 device. Check the support

Web site from the target device manufacturer to determine if a later BIOS is available that might support booting from a composite USB 2.0 device. If so, update the BIOS and retry.

3   If the target device is not capable of booting from an external USB 2.0 device, try the following methods to remotely boot this target device:

- Some BIOS versions provide an option to limit USB speeds. If this option is available to you, change the USB port setting to "USB 1.1" or "Full Speed" mode and try booting again.

- Insert a USB 1.1 card and try booting again.

- Insert a USB 1.1 Hub between the USB2 cable and the target device and try booting again.

- Contact the manufacturer of the target device for information on availability or plans of a BIOS revision that will support booting from a composite USB 2.0 device.

A

Appendix A: Updating RCS Software

For optimal operation of your system, ensure that you have the latest version of the RCS software available from Dell support website at **dell.com/support**.

To update the RCS software:

1   Download the update file from the Dell support website - **dell.com/support**.

2   Double-click on the installer. The installer will check to see if a previous version of the RCS software resides on your system.

3   If no previous version has been detected and a dialog box appears to confirm the upgrade, click **Continue**.

    -or-

    If a previous version is detected and a dialog box appears alerting you to another version of the product, click **Overwrite** to confirm the upgrade.

    -or-

    Click **Cancel** to exit without upgrading the software.

4   Installation commences. Program Files, Shortcuts, Environment Variables, and Registry Entries (Win32 systems only), will be installed or will be overwritten with the new files and settings of the current version.

> **NOTE:** In order for the upgrade detection process to work, you must first either reboot or log out. Registry keys set by the installer are not permanent on Win 32 platforms or Linux until you have logged out or rebooted the system.

B

Appendix B: Keyboard and Mouse

Table B.1: Divider Pane Keyboard and Mouse Shortcuts

Operation	Description
F6	Navigates between the split-screens and gives focus to the last element that had focus.
F8	Gives focus to the divider.
Left or Up Arrow	Moves the divider left if the divider has the focus.
Right or Down Arrow	Moves the divider right if the divider has the focus.
Home	Gives the right pane of the split-screen all of the area (left pane disappears) if the divider has the focus.
End	Gives the left pane of the split-screen all of the area (right pane disappears) if the divider has the focus.
Click + Mouse Drag	Moves the divider left or right.

Table B.2: Tree View Control Keyboard and Mouse Shortcuts

Operation	Description
Mouse Single-Click	Deselects the existing selection and selects the node the mouse pointer is over.
Mouse Double-Click	Toggles the expand/collapse state of an expandable node (a node that has children). Does nothing on a leaf node (a node that does not have children).
Up Arrow	Deselects the existing selection and selects the next node above the current focus point.
Down Arrow	Deselects the existing selection and selects the next node below the current focus point.
Spacebar	Alternately selects/deselects the node that currently has the focus.
Enter	Alternately collapses/expands the node that has focus. Only applies to nodes that have children. Does nothing if the node does not have children.
Home	Deselects the existing selection and selects the root node.
End	Deselects the existing selection and selects the last node displayed in the tree.

Table B.3: Keyboard and Mouse Operations for the Unit List

Operation	Description
Enter or Return	Launches the default action for the selected unit.
Up Arrow	Deselects current selection and moves selection up one row.

Operation	Description
Down Arrow	Deselects current selection and moves selection down one row.
Page Up	Deselects current selection and scrolls up one page then selects the first item on the page.
Page Down	Deselects current selection and scrolls down one page then selects the last item on the page.
Delete	Performs the Delete function. Works the same as the Edit-Delete menu function. Please see that section for more information.
Ctrl + Home	Moves the focus and the selection to the first row in the table.
Ctrl + End	Moves the focus and the selection to the last row in the table.
Shift + Up Arrow	Extends selection up one row.
Shift + Down Arrow	Extends selection down one row.
Shift + Page Up	Extends selection up one page.
Shift + Page Down	Extends selection down one page.
Shift + Mouse Click	Deselects any existing selection and selects the range of rows between the current focus point and the row the mouse pointer is over when the mouse is clicked.

Operation	Description
Ctrl + Mouse Click	Toggles the selection state of the row the mouse pointer is over without affecting the selection state of any other row.
Mouse double-click	Launches the default action for the selected unit.

C

Appendix C: TCP Ports

The following table lists the functions performed by the Remote Console Switch and which ports are used.

Table C.1: Ports Used

Port	Function
TCP 80/443	Default HTTP/HTTPS.
TCP 2068	Video Viewer video, keyboard, mouse, user authentication, and virtual media.
TCP/UDP 3211	Management and install/discovery.

NOTE: The TCP/IP ports are fixed and cannot be altered.

NOTE: All data on ports 2068 and 3211 is encrypted using the Secure Socket Layer (SSL) protocol.

NOTE: For 1081AD and 2161AD switches, the RAK is required to support TCP 2068 and TCP/UDP 3211 ports.

D

Appendix D: Technical Support

Our Technical Support staff is ready to assist you with any installation or operating issues you encounter with your Dell product. If an issue should develop, follow the steps below for the fastest possible service.

To resolve an issue:

1   Check the pertinent section of this manual to see if the issue can be resolved by following the procedures outlined.

2   Check our web site at **dell.com/support** to search the knowledge base or use the on-line service request.

3   Call the Dell Technical Support location nearest you.