# KVM and Serial Access Clients

## User Guide

## Multi-Platform Client Release 5.0.4, Raritan Remote Client Release 4.6.7, Virtual KVM Client, and Raritan Serial Client

### For Use with Raritan's Dominion and IP-Reach Products

**FCC Information**

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

**VCCI Information (Japan)**

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

CE   c(UL)us  1F61
     LISTED   I.T.E.

# Contents

# Chapter 3  Multi-Platform Client and Raritan Remote Client          26

# Chapter 4  Virtual Media     150

# Chapter 5  Raritan Serial Console     162

# Index     189

# What's New in the User Guide

The KVM and Serial Access Clients User Guide was formerly called the MPC and RRC User Guide. The previous version of the guide contained only information about MPC and RRC. This new iteration of the guide contains MPC and RRC information, but now also contains Raritan Serial Client information and Virtual KVM Client information.

In addition to the overall guide contents, the following sections have changed or information has been added to the user guide based on enhancements and changes to the application and/or user documentation.

**MPC and RRC**

- *Keyboard Limitations* (on page 101) - information on known keyboard limitations for Hungarian and Japanese keyboards has been added to the guide.

**MPC**

- *Connected Server Toolbar* (see "Connected Server(s) Toolbar" on page 80) - MPC now allows users to view the Connected Sever Toolbar in full screen mode, as well as return to the standard view using a Close button (see *MPC Target Screen Resolution Mode* (on page 84)).
- *Installing MPC for Linux* (on page 37) - information on creating a desktop shortcut when installing MPC on a Linux machine is noted in this section.

Please see the Release Notes for a more detailed explanation of the changes applied to this version of the application.

# Chapter 1    Introduction

Raritan Multi-Platform Client (MPC), Raritan Remote Client (RRC), and the Virtual KVM Client (VKC) are graphical user interfaces for the Raritan Dominion and IP-Reach product lines, providing remote access to target servers connected to Raritan KVM over IP devices.

By default, generation 2 Raritan devices use VKC. However, generation 2 devices will not work using RRC. Non-Windows users must use Raritan Multi-Platform Client and Windows® users connecting to a generation 1 Raritan device must use RRC.

The standalone Raritan Serial Client (RSC) is used to make direct connections to a serial target without going through the  application. The user specifies the  address and the port number (target), and is then connected.

## In This Chapter

## Use with Raritan Products

The following table lists Raritan products and the applications with which they work:

| Product | Works with... | | | |
|---|---|---|---|---|
| | MPC | RRC | VKC | RSC |
| KX 1 G1 | ✓ | ✓ | | |
| KX II G2 | ✓ | | ✓ | |
| KX II 101 | ✓ | | ✓ | |
| KX 101 G1 | ✓ | ✓ | | |
| KSX G1 | ✓ | ✓ | | |
| KSX II G2 | ✓ | | ✓ | ✓ |
| SX | | | | ✓ |
| IP Reach G1 | ✓ | ✓ | | |
| UST-IP G1 | ✓ | ✓ | | |

Legend:

| G1 | Generation 1 |
|----|--------------|
| G2 | Generation 2 |

Note: There are some differences in MPC when used with the Dominion KX I, Dominion KX II, and Dominion KSX II devices; these differences are noted in the user guide.

# Chapter 2  Virtual KVM Client

## In This Chapter

## Overview

Whenever you access a target server using the Remote Console, a Virtual KVM Client window is opened. There is one Virtual KVM Client for each target server connected to; these windows can be accessed via the Windows task bar. See Connecting to a KVM Target Server in your device user guide for information accessing Virtual KVM Client windows.

Virtual KVM Client windows can be minimized, maximized, and moved around your computer desktop.

Note: Refreshing your HTML browser will close the Virtual KVM Client connection, so please exercise caution.
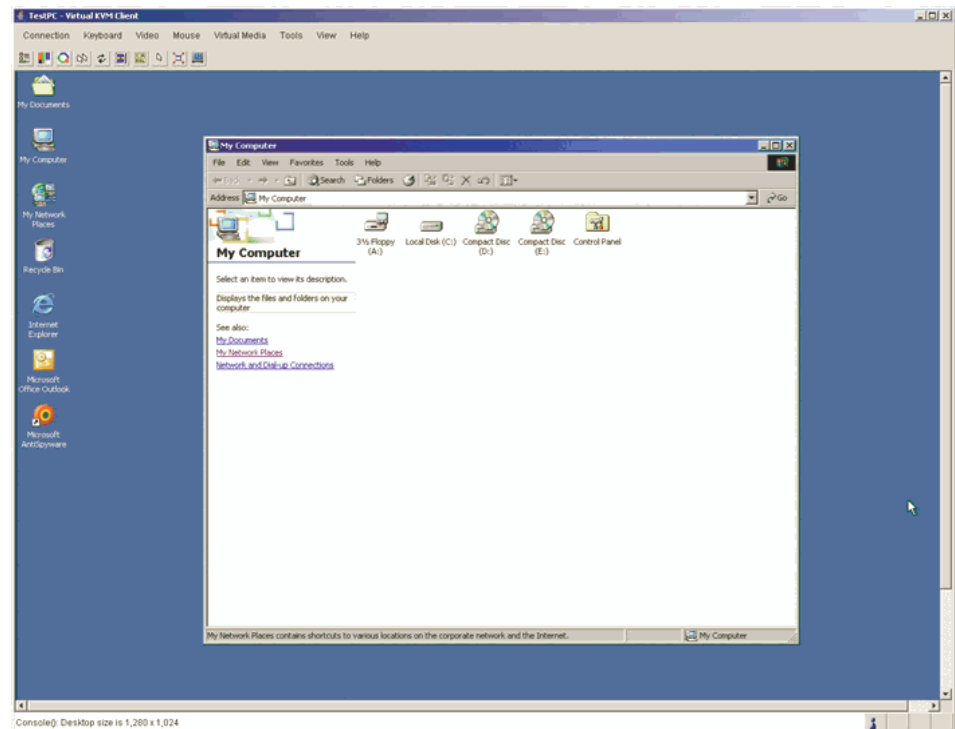


The features available in the Virtual KVM Client are accessible through the menu and toolbar.

| Feature | Description |
| --- | --- |
| Menu Bar | Drop-down menus of commands and settings. |
| Toolbar | Shortcut buttons to frequently used features and commands. |

| Feature | Description |
|---------|-------------|
| Target Server Video Window | Target device display. |
| Status Bar | Real-time information on connection parameters, target server window size, concurrent connections, Caps Lock indicator, and Num Lock indicator. |

## Options

### Menu Tree

The following list contains all of the menus and menu items available in the Virtual KVM Client.

- Connection
  - Properties
  - Connection Info
  - Exit
- Keyboard
  - Send Ctrl + Alt + Delete
  - Keyboard Macros
  - User-Created Macros (Optional)
- Video
  - Refresh Screen
  - Auto-Sense Video Settings
  - Calibrate Color
  - Video Settings
- Mouse
  - Synchronize Mouse
  - Single Mouse Cursor
  - Absolute
  - Intelligent
  - Standard

- Virtual Media
    - Connect Drive
    - Connect CD-ROM/ISO Image
- Tools
    - Options
- View
    - View Toolbar
    - Scaling
    - Target Screen Resolution
- Help
    - About Raritan Virtual KVM Client

## Toolbar

| Button | Description |
|---|---|
| | Properties |
| | Video settings |
| | Calibrate color |
| | Synchronize client and target server mouse cursors |
| | Refresh screen |
| | Auto-sense video |
| | Send Ctrl+Alt+Delete |
| | Toggles single/double mouse modes |
| | Full screen |
| | Resize video to fit screen |

## Mouse Pointer Synchronization

When remotely viewing a target server that uses a mouse, you will see two mouse pointers: one belonging to your remote client workstation and the other belonging to the target server. When the mouse pointer lies within the Virtual KVM Client target server window, mouse movements and clicks are directly transmitted to the connected target server. While in motion, the client mouse pointer slightly leads the target mouse pointer due to mouse acceleration settings.
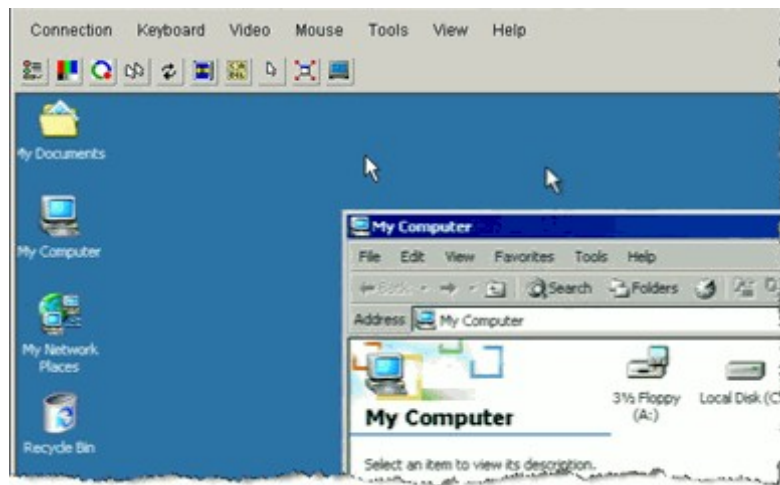


On fast LAN connections, you may want to disable the Virtual KVM Client mouse pointer and view only the target server's pointer. You can toggle between these two modes (single mouse and dual mouse). Refer to *Mouse Menu* (on page 20) for additional information about the available mouse modes.

### Mouse Synchronization Tips

Be sure to follow these steps when obtaining mouse synchronization:

1.  Verify that the selected video resolution and refresh rate is among those supported by the  device. The Virtual KVM Client Connection Info dialog displays the actual values that the  device is seeing. Please refer to Supported Video Resolutions in the device user guide for more information about the video resolutions that are supported.

2.  Verify that the cable length is within the specified limits for the selected video resolution. Please refer to Target Server Connection Distance and Video Resolution in the device user guide for more information.

3. Verify that the mouse and video have been properly configured during the installation process. Please refer to Installation and Configuration in the device user guide for complete instructions.

4. Force an auto-sense by clicking the Virtual KVM Client auto-sense button.

5. If that does not improve the mouse synchronization (for Linux, UNIX, and Solaris KVM target servers):

   a. Open a terminal window.

   b. Enter the xset mouse 1 1 command.

   c. Close the terminal window.

6. Click the Virtual KVM Client mouse synchronization  button.

### Additional Notes for Intelligent Mouse Mode

- Be sure that there are no icons or applications in the upper left section of the screen since that is where the synchronization routine takes place.

- Do not use an animated mouse.

- Disable active desktop on KVM target servers.

# Connection Menu

## Properties Dialog

The dynamic video compression algorithms maintain KVM console usability under varying bandwidth constraints. units optimize KVM output not only for LAN use, but also for WAN use. These units can also control color depth and limit video output, offering an optimal balance between video quality and system responsiveness for any bandwidth.

| | Connection Properties | Manually adjust bandwidth-related options (connection speed, color depth, etc.). |
|---|---|---|

The parameters in the Properties dialog can be optimized to suit your needs for different operating environments.

➢ *To set the connection properties:*

1.  Choose Connection > Properties. The Properties dialog opens.
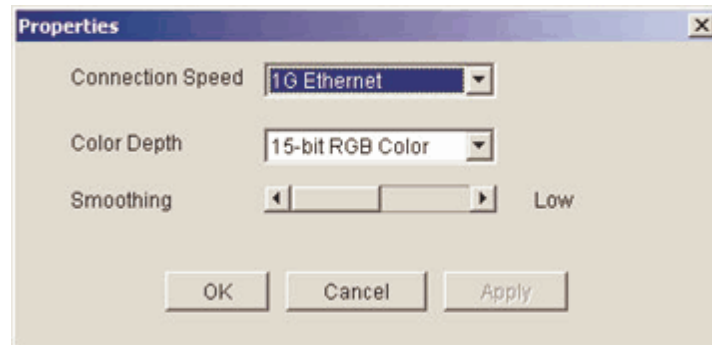


2.  Choose the Connection Speed from the drop-down list. can automatically detect available bandwidth and not limit bandwidth use; but you can also adjust this usage according to bandwidth limitations.

    Auto

    1G Ethernet

    100 Mb Ethernet

    10 Mb Ethernet

    1.5 Mb (MAX DSL/T1)

    1 Mb (Fast DSL/T1)

    512 Kb (Medium DSL/T1)

    384 Kb (Slow DSL/T1)

256 Kb (Cable)

128 Kb (Dual ISDN)

Please note that these settings are an optimization for specific conditions rather than an exact speed. The client and server always attempt to deliver video as quickly as possible on the network regardless of the current network speed and encoding setting. But the system will be most responsive when the settings match the real world environment.

3. Choose the Color Depth from the drop-down list. can dynamically adapt the color depth transmitted to remote users in order to maximize usability in all bandwidths.

15-bit RGB Color

8-bit RGB Color

4-bit Color

4-bit Gray

3-bit Gray

2-bit Gray

Black and White

Important: For most administrative tasks (server monitoring, reconfiguring, etc.), the full 24-bit or 32-bit color spectrum made available by most modern video graphics cards is not necessary. Attempting to transmit such high color depths, wastes network bandwidth.

4. Use the slider to select the desired level of Smoothing (15-bit color mode only). The level of smoothing determines how aggressively to blend screen regions with small color variation into a single smooth color. Smoothing improves the appearance of target video by reducing displayed video noise.

5. Click OK to set these properties.

➢ *To cancel without saving changes:*
• Click Cancel.

## Connection Info

> ### To obtain information about your Virtual KVM Client connection:

- Choose Connection > Connection Info. The Connection Info window opens.

The following information is displayed about the current connection:

- Device Name. The name of the device.

- IP Address. The IP Address of the device.

- Port. The KVM Communication TCP/IP Port used to access the target device.

- Data In/Second. Data rate in.

- Data Out/Second. Data rate out.

- Connect Time. The duration of the connect time.

- FPS. The frames per second transmitted for video.

- Horizontal Resolution. The screen resolution horizontally.

- Vertical Resolution. The screen resolution vertically.

- Refresh Rate. How often the screen is refreshed.

- Protocol Version. RFB Protocol version.

> ### To copy this information:

- Click Copy to Clipboard. The information is available to be pasted into the program of your choice.

## Exit

> ### To close the Virtual KVM Client (the target you are currently accessing):

- Choose Connection > Exit.

# Keyboard Menu

### Send Ctrl+Alt+Delete

Due to its frequent use, a Ctrl+Alt+Delete macro has been pre-programmed into the Virtual KVM Client.

This key sequence is sent to the target server to which you are currently connected. In contrast, if you were to physically press the Ctrl+Alt+Delete keys while using the Virtual KVM Client, the command would first be intercepted by your own PC due to the structure of the operating system, instead of sending the key sequence to the target server as intended.

| | | |
|---|---|---|
| | Send Ctrl+Alt+Delete | Sends a Ctrl+Alt+Delete key sequence to the target server |

➢ *To send a Ctrl+Alt+Delete key sequence to the target server:*

- Choose Keyboard > Send Ctrl+Alt+Delete, or
- Click the Send Ctrl+Alt+Delete button from toolbar

### Keyboard Macros

Keyboard macros ensure that keystroke combinations intended for the target server, are sent to and interpreted only by the target server. Otherwise, they might be interpreted by the computer on which the Virtual KVM Client is running (your client PC).

Macros are stored on the client PC and are PC-specific; therefore, if you use another PC you will not see your macros. In addition, if another person uses your PC and logs in under a different name, that user will see your macros since they are computer-wide. Keyboard macros created in the Virtual KVM Client are available in MPC and vice versa.

## Creating a Keyboard Macro

➢ *To create a keyboard macro (add a macro):*

1. Choose Keyboard > Keyboard Macros. The Keyboard Macros window opens:



2. Click Add. The Add Keyboard Macro window opens:
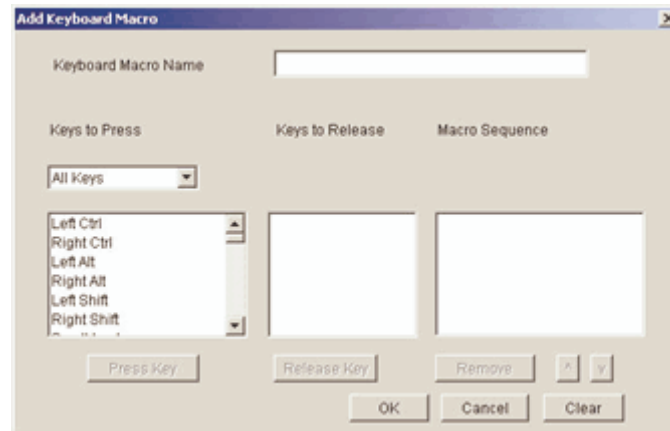


3. Type a name in the Keyboard Macro Name field. This is the name that will display on the Virtual KVM Client menu bar after the macro is created. In this example, type Minimize All Windows.

4. In the Keys to Press drop-down list:

   a. Scroll through and select each key for which you would like to emulate a key press (in the order in which they are to be pressed).

   b. Click the Press Key button after each selection. As each key is selected, it displays in the Keys to Release field.

In this example, select two keys: the Windows key and the letter D key.

5.  In the Keys to Release field:

    a.  Choose each key for which you would like to emulate a key release (in the order in which they are to be released).

    b.  Click Release Key after each selection.

    In this example, both keys pressed must also be released.

6.  Review the Macro Sequence - which has been automatically generated using the Keys to Press and Keys to Release selections. Verify that the Macro Sequence is the exact key sequence you want. (To remove a step in the sequence, select it and click Remove.)
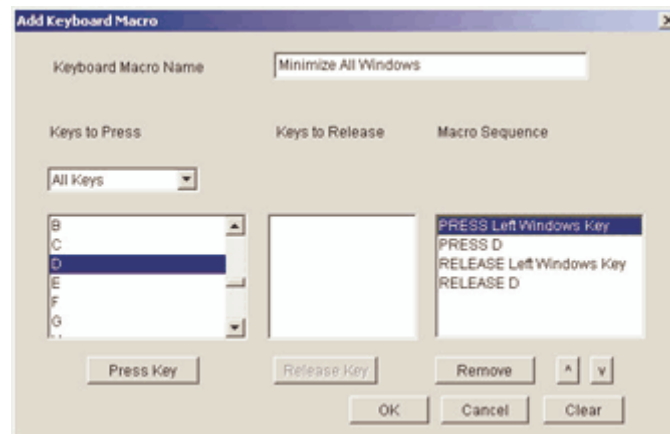


Tip: Use the ^ and v keys to reorder the key sequence.

7.  Click OK in the Add Keyboard Macro window to save the macro.

8.  Click Close from the Keyboard Macros window. The keyboard macro created is now listed as an option from Keyboard menu:
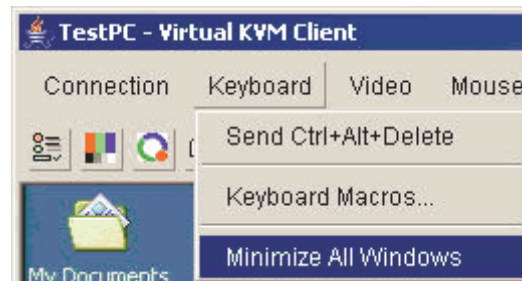
➢ **To cancel without saving changes:**

• Click Cancel.

➢ **To clear all fields and start over:**

• Click the Clear button.

## Running a Keyboard Macro

Once you have created a keyboard macro, execute it by clicking on its name in the Keyboard menu.

➢ **To execute a macro (using this example):**

• Choose Keyboard > Minimize All Windows.

    An alternative method is to select the macro from the Keyboard Macros window.

➢ **To execute a macro:**

1. Choose Keyboard > Keyboard Macros. The Keyboard Macros window opens.

2. Select the macro from among those listed.

3. Click Run Macro.

## Modifying a Keyboard Macro

➢ **To modify a macro:**

1. Choose Keyboard > Keyboard Macros. The Keyboard Macros window opens.

2. Choose the macro from among those listed.

3. Click Modify. The Add/Edit Macro window opens.

4. Make your changes.

5. Click OK.

## Removing a Keyboard Macro

**Please exercise caution in the removal of macros; you are not prompted to confirm their deletion.**

> ➤ **To remove a macro:**

1. Choose Keyboard > Keyboard Macros. The Keyboard Macros window opens.

2. Choose the macro from among those listed.

3. Click Remove. The macro is deleted.

# Video Menu

Video settings can be refreshed automatically in several ways:

- The Refresh Screen option forces a refresh of the video screen

- The Auto-sense Video Settings option automatically detects the target server's video settings

- The Calibrate Color option calibrates the video to enhance the colors being displayed

In addition, you can manually adjust the settings using the Video Settings option.

## Refresh Screen

The Refresh Screen option forces a refresh of the video screen. The entire video screen is redrawn.

| | |
|---|---|
| ♻ | Refresh Screen button |

> ➤ **To refresh the video settings:**
- Choose Video > Refresh Screen, or
- Click the Refresh Screen button from toolbar

## Auto-Sense Video Settings

The Auto-sense Video Settings option forces a re-sensing of the video settings (resolution, refresh rate) and redraws the video screen.

| | |
|---|---|
| 🖼 | Auto-Sense Video Settings button |

> ➤ **To automatically detect the video settings:**
- Choose Video > Auto-sense Video Settings, or
- Click the Auto-Sense Video Settings button from toolbar

A message is displayed that auto adjustment is in progress.

## Calibrate Color

Use the Calibrate Color command to optimize the color levels (hue, brightness, saturation) of the transmitted video images. The  color settings are on a target server-basis.

| | Calibrate Color | Adjusts color settings to optimize the video display. |
|---|---|---|

Note: The Calibrate Color option applies to the current connection only.

➢ *To calibrate the color:*

1. Open a remote KVM connection to any target server running a graphical user interface.

2. Choose Video > Calibrate Color (or click the Calibrate Color button). The target device screen updates its color calibration.

## Video Settings

Use the Video Settings option to manually adjust the video settings.

| | Video Settings | Opens Video Settings for manual adjustment of video parameters. |
|---|---|---|

➢ *To change the video settings:*

1.  Choose Video > Video Settings. The Video Settings window opens displaying the current settings:
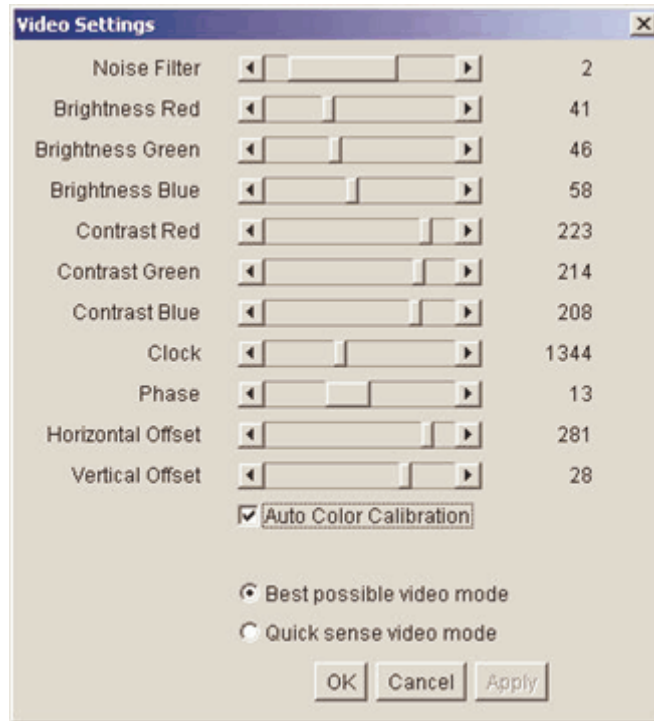


2.  Use the sliders to adjust the settings to achieve the desired results (as you adjust the settings the effects are immediately visible):

    ▪ Noise Filter. can filter out the electrical interference of video output from graphics cards. This feature optimizes picture quality and reduces bandwidth. Higher settings transmit variant pixels only if a large color variation exists in comparison to the neighboring pixels. However, setting the threshold too high can result in the unintentional filtering of desired screen changes. Lower settings transmit most pixel changes. Setting this threshold too low can result in higher bandwidth use.

    ▪ Brightness: Use this setting to adjust the brightness of the target server display.

        ▪ Red. Controls the brightness of the red signal.

        ▪ Green. Controls the brightness of the green signal.

        ▪ Blue. Controls the brightness of the blue signal.

    ▪ Color Contrast Settings: Controls the contrast adjustment.

- Contrast Red. Controls the red signal.

- Contrast Green. Controls the green signal.

- Contrast Blue. Controls the blue signal.

▪ If the video image looks extremely blurry or unfocused, the settings for clock and phase can be adjusted until a better image appears on the active target server.

---

Warning: Please exercise caution when changing the Clock and Phase settings; doing so may result in lost or distorted video and you may not be able to return to the previous state. Contact Raritan Technical Support before making any changes.

---

- Clock. Controls how quickly video pixels are displayed across the video screen. Changes made to clock settings cause the video image to stretch or shrink horizontally; odd number settings are recommended. Under most circumstances this setting should not be changed because the auto-detect is usually quite accurate.

- Phase. Phase values range from 0 to 31 and will wrap around. Stop at the phase value that produces the best video image for the active target server.

▪ Offset: Controls the on-screen positioning:

- Horizontal Offset. Controls the horizontal positioning of the target server display on your monitor.

- Vertical Offset. Controls the vertical positioning of the target server display on your monitor.

▪ Auto Color Calibration. Check this option if you would like automatic color calibration.

▪ Video Sensing: Select the video sensing mode:

- Best possible video mode:  will perform the full Auto Sense process when switching targets or target resolutions. Selecting this option calibrates the video for the best image quality.

- Quick sense video mode: With this option, the  device will use a quick video Auto Sense in order to show the target's video sooner. This option is especially useful for entering a target server's BIOS configuration right after a reboot.

3. Click Apply. The Video Settings are changed.

> Note: Some Sun background screens, such as screens with very dark borders, may not center precisely on certain Sun servers. Use a different background or place a lighter colored icon in the upper left corner of the screen.

➢ **To cancel with saving your changes:**

- Click Cancel.

## Mouse Menu

When controlling a target server, the Remote Console displays two mouse cursors: one belonging to your client workstation and the other belonging to the target server. You can operate in either single mouse mode or dual mouse mode. When in dual mouse mode and properly configured, these two mouse cursors will align. If you experience difficulty with mouse synchronization, refer to Configure Target Servers.

When there are two mouse cursors, the device offers several mouse modes:

- Absolute (Mouse Synchronization)
- Intelligent (Mouse Mode)
- Standard (Mouse Mode)

### Synchronize Mouse

In dual mouse mode, the Synchronize Mouse option forces realignment of the target server mouse pointer with Virtual KVM Client mouse pointer.

| | |
|---|---|
| 🖱 | Synchronize Mouse |

➢ **To synchronize the mouse:**

- Choose Mouse > Synchronize Mouse, or
- Click the Synchronize Mouse button from the toolbar

---

### Single Mouse Cursor

Single Mouse Cursor enters single mouse mode, in which only the target server mouse cursor is shown; the local PC mouse pointer no longer appears on-screen. While in single mouse mode, the Synchronize Mouse option is not available (there is no need to synchronize a single mouse cursor).

| ⌖ | Single Mouse Cursor |
|---|---|

➢ **To enter single mouse mode:**

• Choose Mouse > Single Mouse Cursor, or

• Click the Single/Double Mouse Cursor button from the toolbar

➢ **To exit single mouse mode:**

1. When entering single mouse mode, the following message is displayed. Click OK.
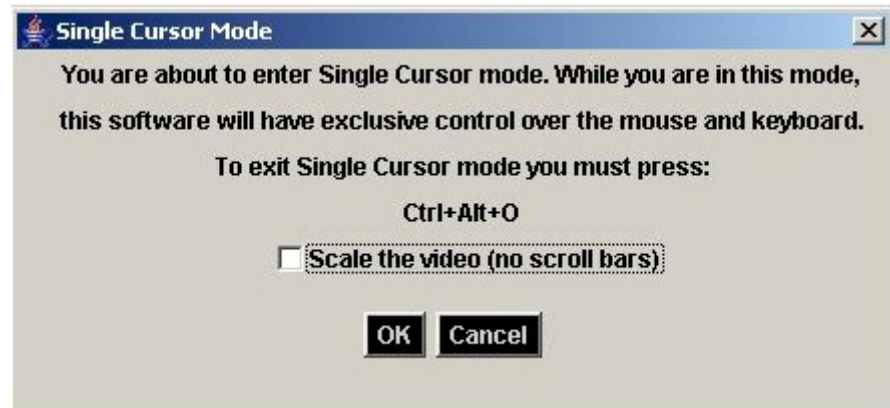


2. Press Ctrl+Alt+O on your keyboard to exit single mouse mode.

---

### Standard

This is the standard mouse synchronization algorithm using relative mouse positions. Standard mouse mode requires that acceleration is disabled and other mouse parameters are set correctly in order for the client and server mouse to stay synchronized. Standard mouse mode is the default.

➢ **To enter standard mouse mode:**

• Choose Mouse > Standard.

---

### Intelligent

In Intelligent mouse mode, the device can detect the target mouse settings and synchronize the mouse pointers accordingly, allowing mouse acceleration on the target. In this mode, the mouse cursor does a "dance" in the top left corner of the screen and calculates the acceleration. For this mode to work properly, certain conditions must be met.

For additional information on Intelligent Mouse mode, refer to the Raritan Multi-Platform Client User Guide (Appendix B: Conditions for Intelligent Mouse Synchronization) available on Raritan's Website http://www.raritan.com/support/productdocumentation, or on the Raritan User Manuals & Quick Setup Guides CD ROM included with your shipment.

➢ **To enter intelligent mouse mode:**

- Choose Mouse > Intelligent.

---

### Absolute

Note: Absolute Mouse Synchronization is available for use with the Virtual Media-enabled USB CIM (D2CIM-VUSB) only.

---

In this mode, absolute coordinates are used to keep the client and target pointers in sync, even when the target mouse is set to a different acceleration or speed. This mode is supported on servers with USB ports; the mouse moves to the exact location on the target server.

➢ **To enter absolute mouse mode:**

- Choose Mouse > Absolute.

---

## Virtual Media

Refer to the chapter on *Virtual Media* (on page 150) for complete information about setting up and using virtual media.

# Tools Menu

## Options

From the Tools menu, you can specify certain options for use with the Virtual KVM Client: synchronize mouse when in dual mouse mode, enable logging, keyboard type, and the exit target screen resolution mode hotkey.

➢ *To set the tools options:*

1. Choose Tools > Options. The Options window opens:
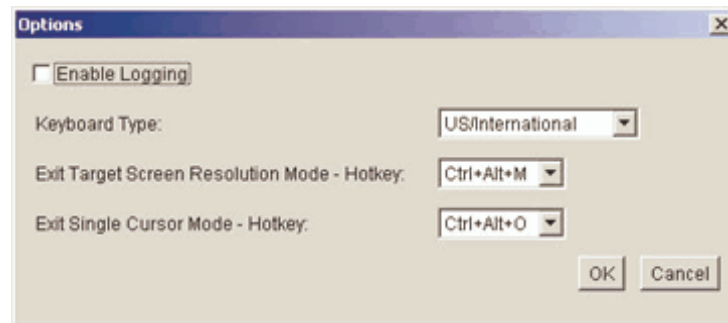


2. Select the Enable Logging checkbox only if directed to by Technical Support. This option creates a log file in your home directory.

3. Choose the Keyboard Type from the drop-down list (if necessary). The options include:
   - US/International
   - French (France)
   - German (Germany)
   - Japanese
   - United Kingdom
   - Korean (Korea)
   - Traditional and Simplified Chinese
   - German
   - Belgian
   - Norwegian
   - Danish
   - Swedish

4. Exit Target Screen Resolution Mode - Hotkey. When you enter target screen resolution mode, the display of the target server becomes full screen and acquires the same resolution as the target server. This is the hotkey used for exiting this mode; select from the drop-down list.

5. Exit Single Cursor Mode - Hotkey. When you enter single cursor mode, only the target server mouse cursor is visible. This is the hotkey used to exit single cursor mode and bring back the client mouse cursor; select from the drop-down list.

6. Click OK.

# View Menu

### View Toolbar

You can use the Virtual KVM client with or without the toolbar display.

➢ *To toggle the display of the toolbar (on and off):*
• Choose View > View Toolbar.

### Scaling

Scaling your target window allows you to view the entire contents of the target server window. This feature increases or reduces the size of the target video to fit the Virtual KVM Client window size, and maintains the aspect ratio so that you see the entire target server desktop without using the scroll bar.

➢ *To toggle scaling (on and off):*
• Choose View > Scaling.

### Target Screen Resolution

When you enter target screen resolution mode, the display of the target server becomes full screen and acquires the same resolution as the target server. The hotkey used for exiting this mode is specified in the Options dialog (default is Ctrl+Alt+M).

➢ *To enter target screen resolution:*

• Choose View > Target Screen Resolution.

➢ *To exit target screen resolution mode:*

• Press the hotkey configured in the Tools Options dialog. The default is Ctrl+Alt+M.

Note to CC-SG Users: Target Screen Resolution is disabled; full screen mode is available only when the device is not under CC-SG management.

## Help Menu

### About Raritan Virtual KVM Client

This menu option provides version information about the Virtual KVM Client should you require assistance from Raritan technical support.

➢ *To obtain version information:*

• Choose Help > About Raritan Virtual KVM Client.

# Chapter 3    Multi-Platform Client and Raritan Remote Client

## In This Chapter

## Requirements and Installation

### MPC Requirements and Installation Instructions

#### Note to CC-SG Users

If you are using Dominion KX II in a CC-SG configuration, do not use the CC-SG proxy mode if you are also planning to use the Multi-Platform Client (MPC).

#### MPC Minimum System Requirements

The minimum system requirements for the Multi-Platform Client are:

- CPU Speed: 1.0 GHz
- RAM: 512 Mbytes

Note: Running the client software on system configurations below either of these specifications may impact performance and result in errors.

#### MPC Supported Browsers

MPC supports the following browsers:

- Internet Explorer 6 and 7
- Firefox® 1.5 and 2.0
- Mozilla® 1.7
- Safari 2.0

**Raritan Multi-Platform Client (MPC) Supported Operating Systems**

When launched as a web applet or as a standalone application, MPC allows you to reach target servers via different Raritan Dominion devices and IP Reach models.

Raritan MPC is compatible with the following platforms:

- Windows XP
- Windows 2000 SP4
- Windows Vista
- Red Hat Linux® 9.0
- Red Hat Enterprise Workstation 3.0 and 4.0
- SUSE Linux Professional 9.2 and 10
- Fedora Core 5 and above
- Mac®
- Solaris™

**Launching MPC from a Web Browser**

Important: Regardless of the browser you use, you must allow pop-ups from the Dominion device's IP address in order to open MPC.

1. To open MPC from a client running any *supported browser* (see "MPC Supported Browsers" on page 26), type http://IP-ADDRESS/mpc into the address line, where IP-ADDRESS is the IP address of your Raritan device. MPC will open in a new window. This window will not contain a menu bar, toolbar, scroll bar, or address bar. Work in this window and toggle to other open windows using the Alt+Tab command.

   Note: The Alt+Tab command will toggle between windows only on the local system.

   When MPC opens, the Raritan devices that were automatically detected and which are found on your subnet are displayed in the Navigator in tree format.

2. If your device is not listed by name in the navigator, add it manually:

   a. Select Connection > New Profile. The Add Connection window opens.

   b. In the Add Connection window, type a device Description, specify a Connection Type, add the device IP Address, and click OK. These specifications can be edited later.

3. In the Navigator panel on the left of the page, double-click on the icon that corresponds to your Raritan device to connect to it.

Note: Depending on your browser and browser security settings, you may see various security and certificate check and warning dialog boxes. It is necessary to accept the options in order to open MPC.
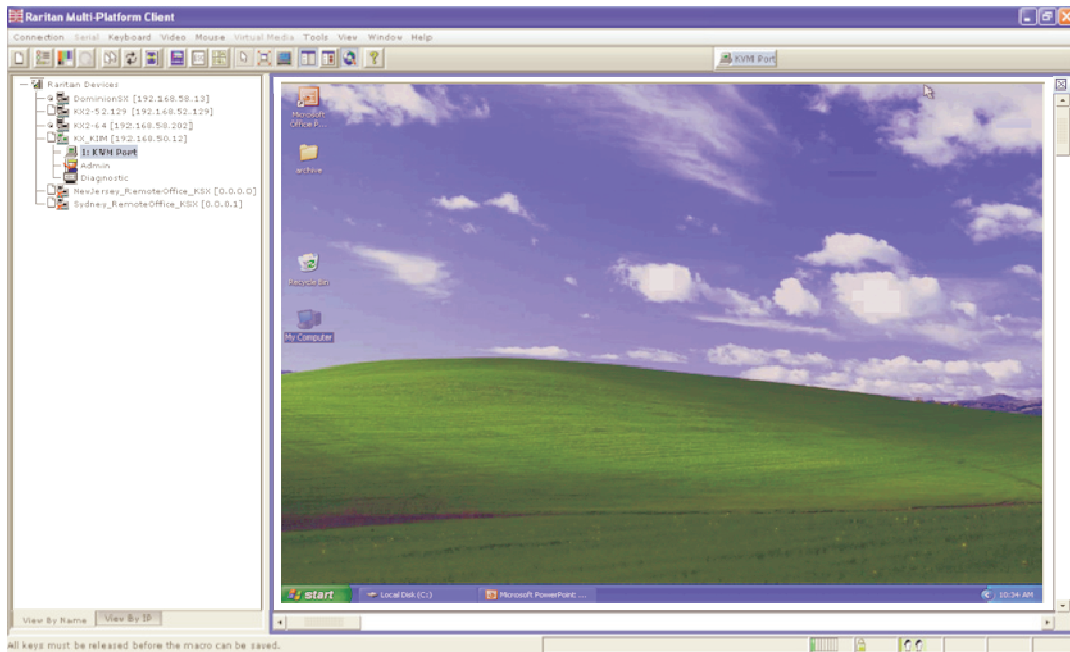


### Installing and Opening Standalone MPC

Raritan recommends that you open only one standalone MPC session at a time. Opening more than one standalone MPC session on the same client at the same time may cause performance problems and system errors.

Note: Please note that the installer file names and the install directories/folder paths that are documented in the device user guides may differ slightly from what is outlined in this guide.

**Important: MPC modem connectivity is supported on Windows, Linux, and Sun Solaris but not Macintosh. When working in Windows, use Standalone MPC.**

You must have the MPC JAR file to install MPC for any of these operating systems.

1. Download the installation file, MPC-installer.jar from the Raritan website on the Support - Firmware Upgrades page (http://www.raritan.com/support/firmwareupgrades). Click on Dominion Family and scroll to the Standalone Multi-Platform Client link.

2. If copying MPC-installer.jar from a known location, double-click on the file to start installation.

### *Windows*

### Checking JRE Version in Windows

1. Do one of the following to check the JRE version in Windows:

   a. Determine your version of the JRE from the Java website: http://www.java.com/en/download/help/testvm.xml.

   b. Or, click on the Windows Start button at the bottom left of your page and click Control Panel.

   Tip: In the upper left corner of the page, you may see a panel named Control Panel with the option Switch to Classic View or Switch to Category View. For easier viewing, opt for Classic View.

   c. Search the Control Panel files for a Java icon. When you locate the Java icon, double-click on it to open the Java Control panel. Click on the General tab and then click on the About button to check the current Java Runtime Environment (JRE).

   d. If the JRE is version 1.4.2_05 or later, proceed with the MPC Installation. If the Java icon does not exist in the Control Panel or if the JRE version is prior to 1.4.2_05, go to the Sun Microsystems website at http://java.sun.com/products/ to download the latest version of JRE.

2. For future Java access and to automatically open it, set your path to the Java executable.

   a. Right-click on the My Computer icon on your desktop and click Properties.

   b. Click on the Advanced tab and then click "Environment variables".

c. Edit the Path address so that it contains the path to the Java executable.
For example, if Java is installed on C:\j2re1.4.2_05 and your path is currently set to C:\WINDOWS\SYSTEM32, then change the path to read C:\WINDOWS\SYSTEM32;C:\j2re1.4.2_05

**Installing MPC for Windows**

1. Download the MPC-installer.jar installation file or copy the file from a known location. See *Installing and Launching Standalone MPC* (see "Installing and Opening Standalone MPC" on page 28) for information on locating the MPC-installer.jar file.

2. Double-click on the jar file icon to open the installation dialog.

3. After the initial dialog appears, click Next.
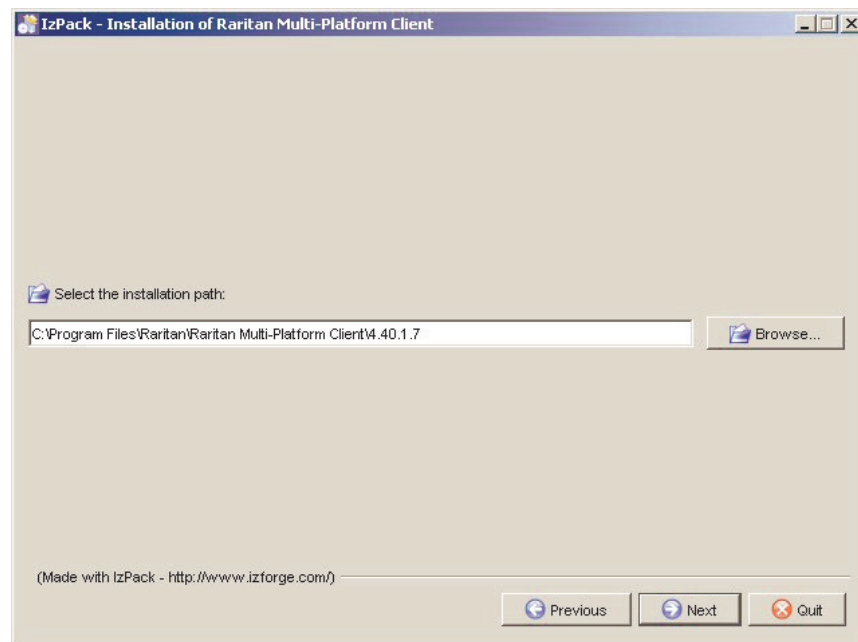


4. Select the directory where you want to install MPC and click Next. Click Browse to locate a non-default directory.

5. Click Next.
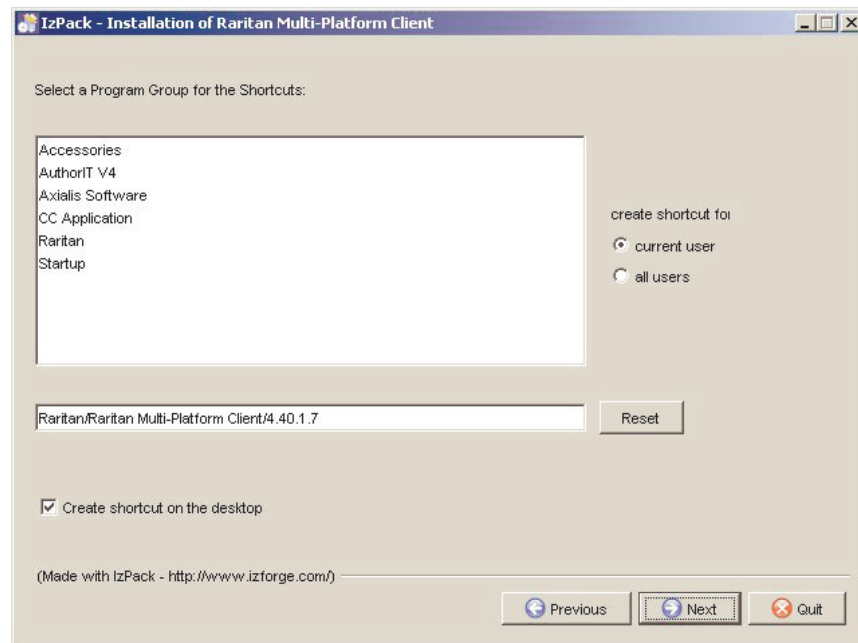


6. In the Shortcut dialog, choose a shortcut location, determine who should have the shortcut, and determine whether you want the shortcut on the desktop. When finished, click Next.

Once the installation is complete, the final dialog indicates where you will find an uninstaller program and provides an option for generating an automatic installation script. Click Done to close the Installation dialog.
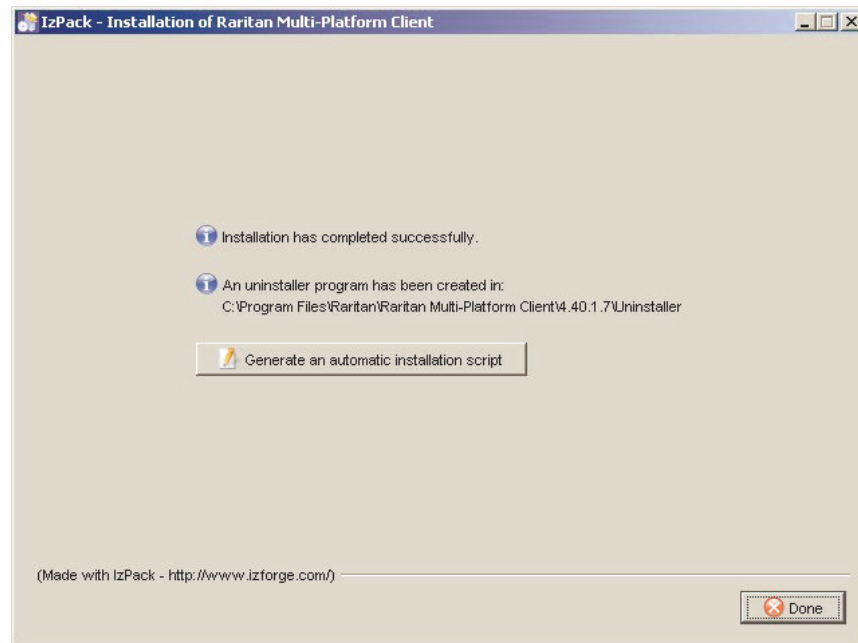


**Opening MPC in Windows**

1.  Click on the Windows Start menu and then click All Programs > Raritan Multi-Platform Client. Alternatively, double-click the MPC desktop shortcut icon if you created one.

2.  Double-click on the desired device in the Navigator to establish a connection.

3.  Type your Username and Password in the device dialog and then click OK to log on.

### Linux

### Java Runtime Environment (JRE) Requirements for MPC

Raritan recommends using Java® Runtime Environment (JRE) version 1.5 for optimum performance but MPC will function with JRE version 1.4.2_05 or greater (with the exception of JRE 1.5.0_02). JRE 1.6 is also supported but has not been fully tested.

Determine your version of the JRE from the Java website: http://www.java.com/en/download/help/testvm.xml.

You may need some configuration depending on your OS and browser. Configuration instructions are provided with the JRE download.

Note: Modem use is not supported with Raritan's Dominion KX101.

**Important: When launching MPC from a browser, it is highly recommended that you disable the Java Applet caching.**

Although no actual problems have occurred when Java caching is turned on, some non-impacting Java exceptions have occurred. Generation of these Java-exceptions can appear in the Java Applet Console window and may degrade performance.

For Linux/UNIX environments, the Java Control Panel is located in the JRE's bin directory; the location varies based on where JRE was installed by your Linux/UNIX administrator.
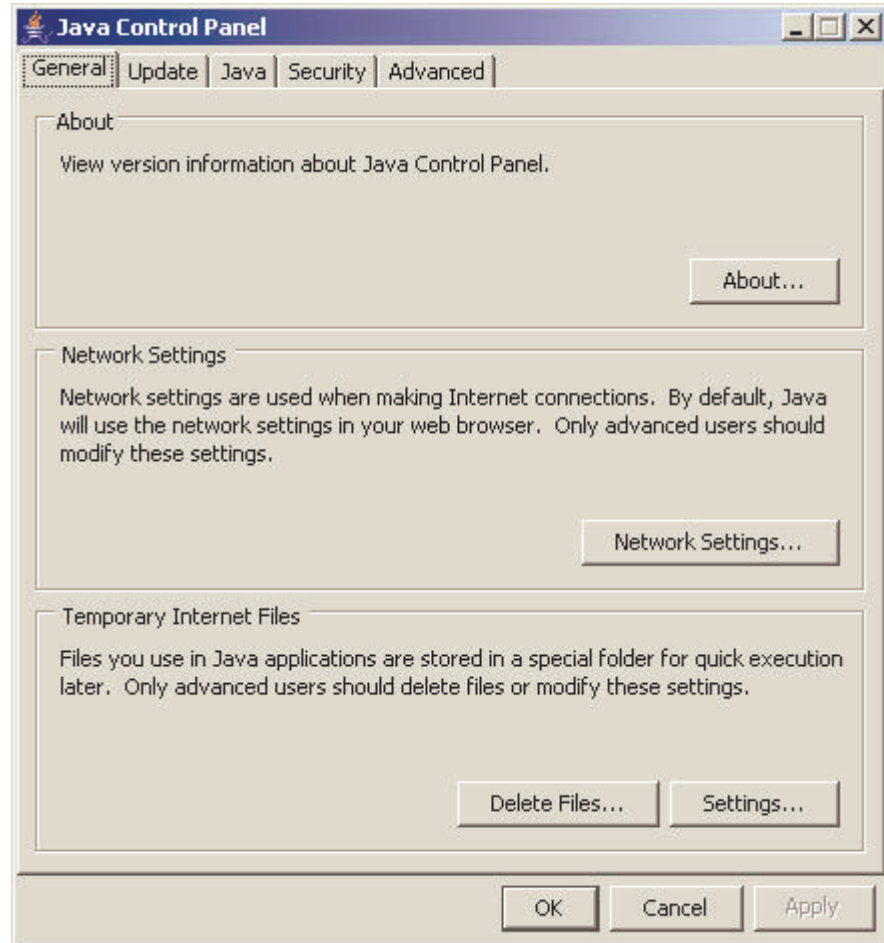
Tip: It is also recommended that you clear the Java cache.

➢ *To disable Java caching and clear the cache (use these steps with Microsoft Windows XP and JRE 1.5.0):*
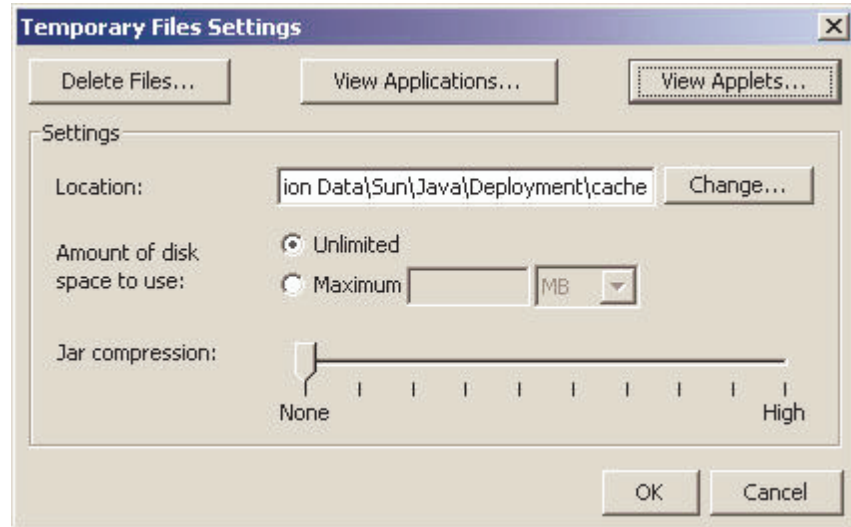
1. From the Start menu, click Control Panel.

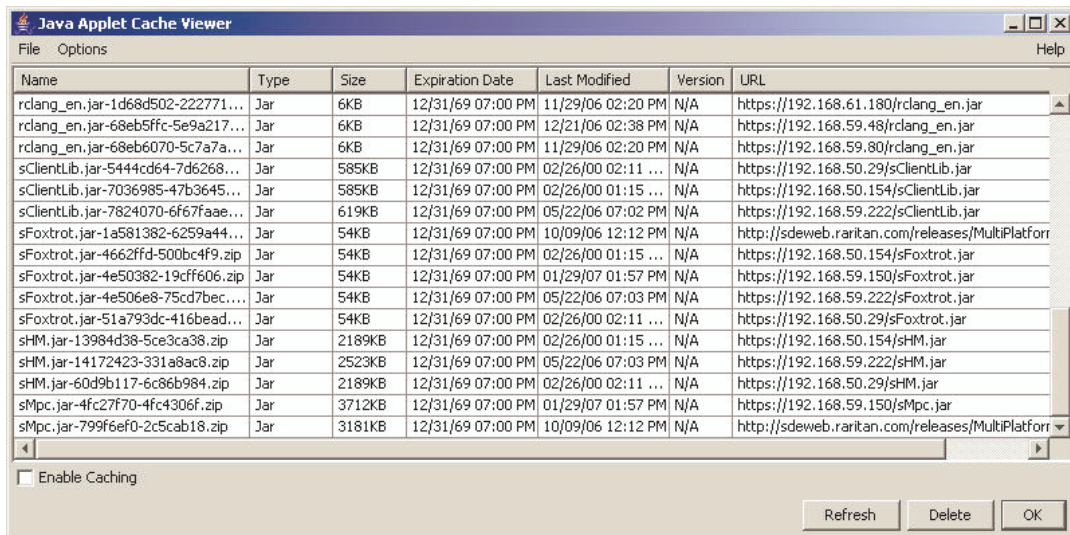2. Double-click on the Java icon to launch it. The Java Control Panel dialog appears.



3. To disable Java caching:

a.  From the General tab, click the Settings button. The Temporary Files Settings dialog appears.



b.  Click the View Applets button. The Java Applet Cache Viewer opens.



c.  Deselect the Enable Caching checkbox if it is already checked.

d.  Click OK.

4.  To clear the Java cache:

a.  From the Temporary Files Settings dialog, click the Delete Files button. The Delete Temporary Files dialog appears.

b. Select the temporary files that you want to delete.
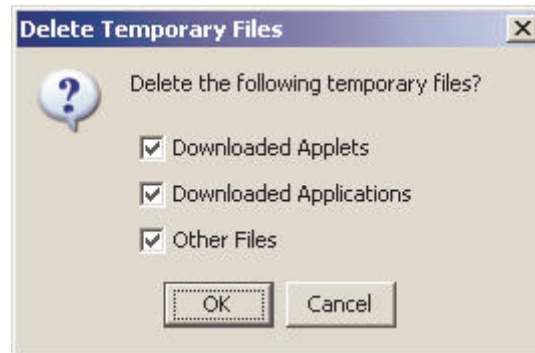


c. Click OK.

**Checking JRE Version in Linux**

1. In a graphical environment, open a terminal window.

2. Type java version in the command line and press Enter on your keyboard. The currently-installed version of Java Runtime Environment (JRE) is displayed.

   If your path variable is not set to where the java binaries have been installed, you may not be able to see the JRE version.

3. Set your path:

   a. To set your path and assuming JRE 1.4.2_05 is installed in /usr/local/java: you must set your PATH variable.

   b. To set the path for bash shell, export PATH=$PATH:/usr/local/java/j2re1.4.2_05/bin.

   c. To set the path for tcsh or csh, set PATH = ($PATH /usr/local/java/j2re1.4.2_05/bin).

   These commands can be typed at the terminal each time you login. Alternatively, you can add it to your .bashrc for bash shell, .cshrc for csh, or tcsh so that each time you login the PATH is already set.

Please refer to your shell documentation if you encounter problems.

```
                          usr1@localhost:~
File  Edit  View  Terminal  Tabs  Help
[usr1@localhost ~]$ java -version
java version "1.4.2_06"
Java(TM) 2 Runtime Environment, Standard Edition (build 1.4.2_06-b03)
Java HotSpot(TM) Client VM (build 1.4.2_06-b03, mixed mode)
[usr1@localhost ~]$
```

4. If the JRE is version 1.4.2_05 or higher, proceed with the MPC installation. If the version is prior to 1.4.2_05, please go to the Java website at http://java.sun.com/products/ to download the latest Runtime Environment.
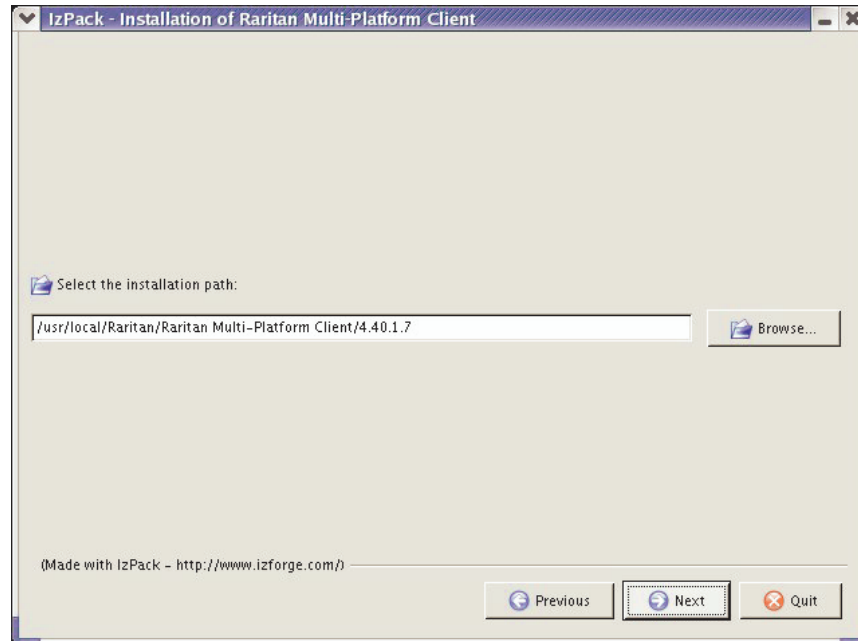
**Installing MPC for Linux**

You must have Administrative privileges to install MPC.

1. Download the MPC-installer.jar file or copy it from a known location.

2. Open a terminal window and open the directory where the installer is saved.

3. Type java -jar MPC-installer.jar and press Enter to run the installer.

4.   After the initial page loads, click Next.



5.   Use the Browse function to select a directory to install MPC if the directory is different from the default path displayed in the "Select the installation path" field.

6.   Click Next to open the Shortcut dialog.

7.   On the Shortcut dialog:

   ▪ Choose a shortcut location from the "Select a Program Group for the Shortcuts:" field.

   ▪ Select either "current user" or "all users" to define who should have access to the shortcut.

   ▪ Check the "Create shortcut on the desktop" checkbox if you want the shortcut to appear on the desktop.

8. When finished, click Next.
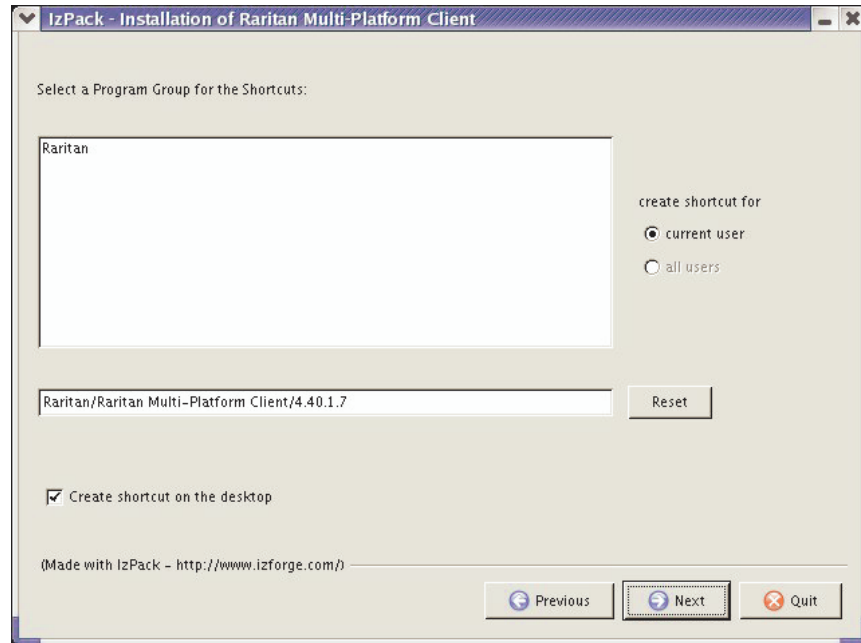


Note: Once MPC is installed successfully, a shortcut will be available on the desktop. However, for Linux users, you will need to log out of and then back into your session before the shortcut will be visible on the desktop.

Once the installation is complete, the final page indicates where you will find an uninstaller program and provides you with the option to generate an automatic installation script.

9.   Click Done to close the Installation dialog.
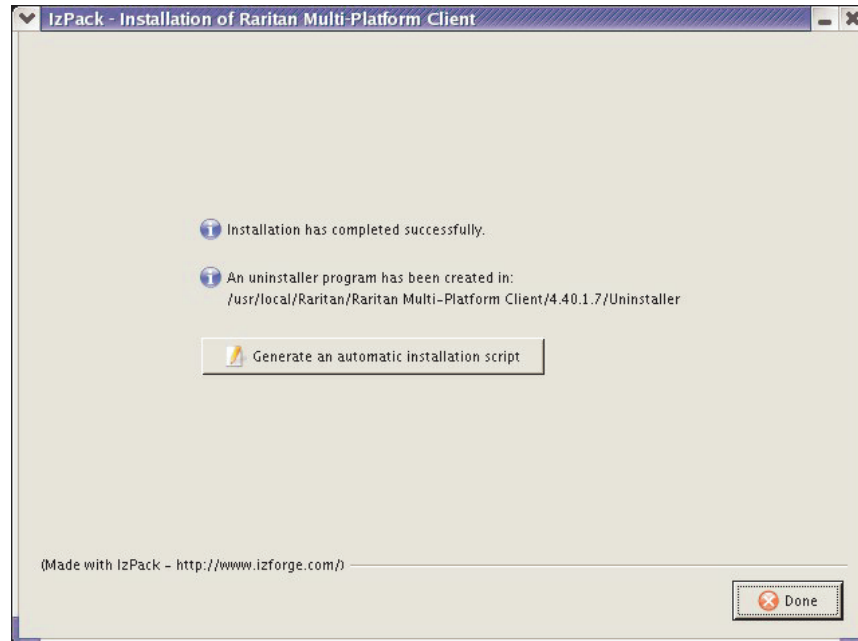


**Opening MPC in Linux**

1.   Open a terminal window and change directories to the directory where you installed MPC (default location: /usr/local/Raritan/Raritan MPC/4.40.1.7/).

2.   Type ./start.sh and press Enter to open MPC.

3.   Double-click on the desired device to establish a connection, type your Username and Password, and click OK to log on.

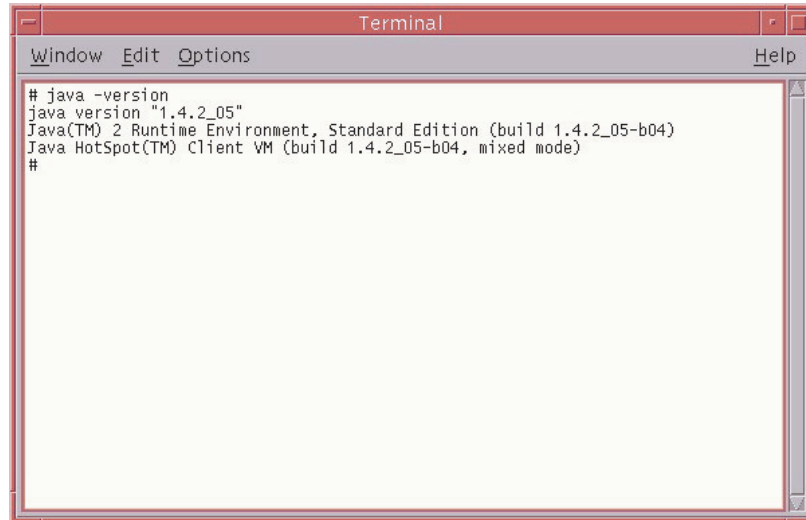*Solaris*

**Checking JRE Version on Sun Solaris**

1.   Launch a terminal window on the Sun Solaris desktop.

2.   Type java version in the command line and press Enter. The currently-installed version of Java Runtime Environment (JRE) appears.

   If your path variable is not set to where the java binaries have been installed, you may not be able to see the JRE version.

   a.   To set your path and assuming JRE 1.4.2_05 is installed in /usr/local/java, you must set your PATH variable.

   b.   To set path for bash shell, export PATH=$PATH:/usr/local/java/j2re1.4.2_05/bin.

   c.   To set path for tcsh or csh, set PATH = ($PATH /usr/local/java/j2re1.4.2_05/bin).

3. These commands can be typed at the terminal each time you login. Alternatively, you can add it to your .bashrc for bash shell, .cshrc for csh, or tcsh so that each time you login the PATH is already set. Please refer to your shell documentation if you encounter problems.

```
Terminal
Window  Edit  Options                                          Help

# java -version
java version "1.4.2_05"
Java(TM) 2 Runtime Environment, Standard Edition (build 1.4.2_05-b04)
Java HotSpot(TM) Client VM (build 1.4.2_05-b04, mixed mode)
#
```

4. If the JRE is version 1.4.2_05 or higher, proceed with the MPC installation. If the version is prior to 1.4.2_05, please go to the Sun website at http://java.sun.com/products/ to download the latest Runtime Environment.
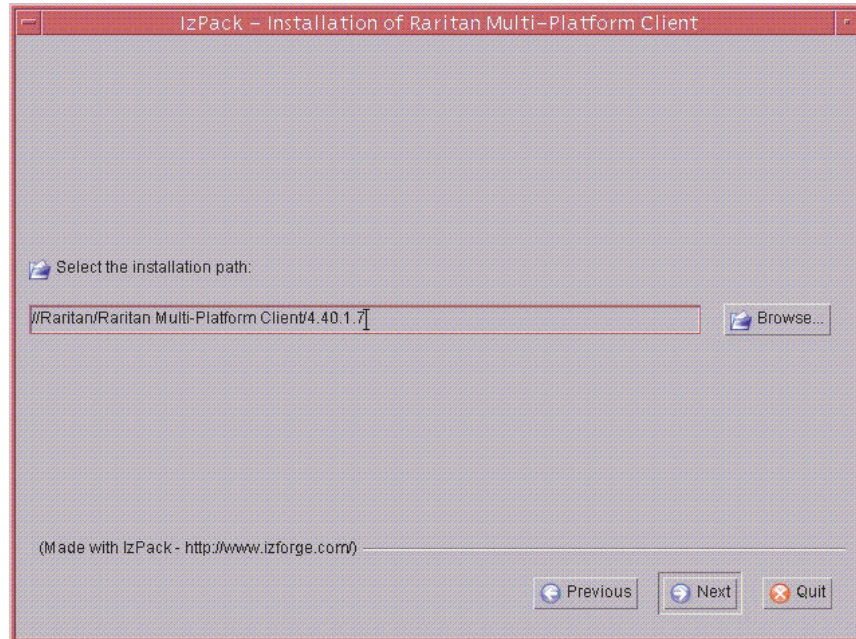
**Installing MPC for Sun Solaris**

You must have administrative privileges to install MPC.

1. Download the MPC-installer.jar file or copy it from a known location.

2. Open a terminal window and navigate to the directory where the installer is saved.

3. Type java -jar MPC-installer.jar and press Enter to run the installer.

4. After the initial page loads, click Next.



5. Use the Browse function to navigate to the directory you want to install MPC or select the default directory displayed in the "Select the installation path" field.

6. Click Next.

7. When installation is complete, click Next.

8. Click Next again.

Once the installation is complete, the final dialog will indicate where you will find an uninstaller program and provides the option to generate an automatic installation script.

9. Click Done to close the Installation window.
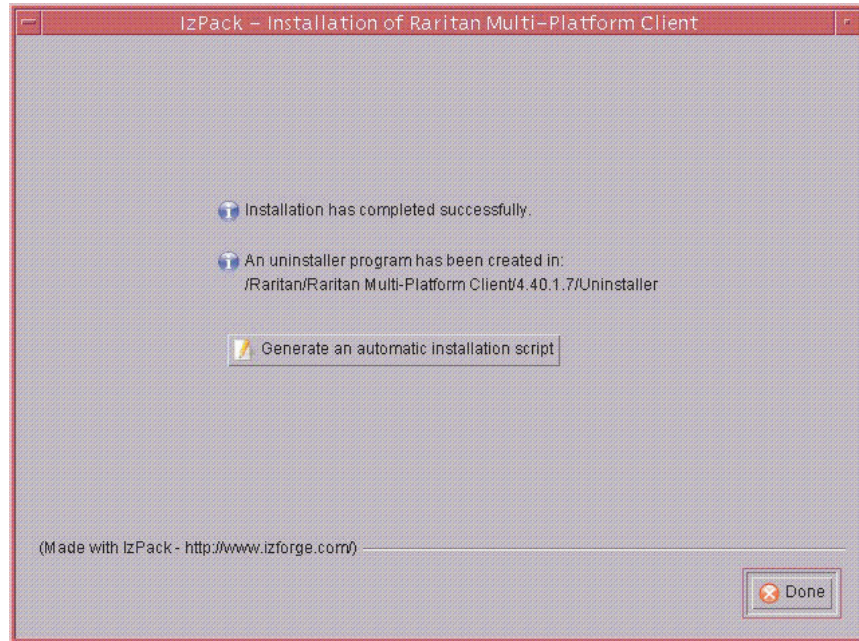


**Opening MPC on Sun Solaris**

1. Open a terminal window and navigate to the directory where you installed MPC (the default location is /usr/local/Raritan/Raritan MPC/4.40.1.7).

2. Type ./start.sh and press Enter to open MPC.

3. Double-click on the desired device to establish a connection, type your Username and Password, and click OK to log on.

*Macintosh*

**Checking JRE Version in Mac OSX**

1. Launch a terminal window on the Macintosh desktop.

2.  Type the java version in the command line and press Enter. The currently-installed version of the Java Runtime Environment (JRE) is displayed.

```
Terminal — sh — 80x24
Last login: Tue Mar 22 09:04:25 on ttyp1
Welcome to Darwin!
Raritan-MIS-Computer:~ root# java -version
java version "1.4.2_05"
Java(TM) 2 Runtime Environment, Standard Edition (build 1.4.2_05-141.3)
Java HotSpot(TM) Client VM (build 1.4.2-38, mixed mode)
Raritan-MIS-Computer:~ root#
```

3.  If the JRE is version 1.4.2_05 or higher, proceed with the MPC installation. If the version is prior to 1.4.2_05, please go to the Apple website to download the latest Runtime Environment.

**Installing MPC for Mac OSX**

You must have administrative privileges to install MPC.

1.  Download the MPC-installer.jar file or copy it from a known location.

2.  Open a Finder window and locate the installer.

3.  Double click on the MPC-installer.jar file to run the installer.

4.  After the initial page opens, click Next.
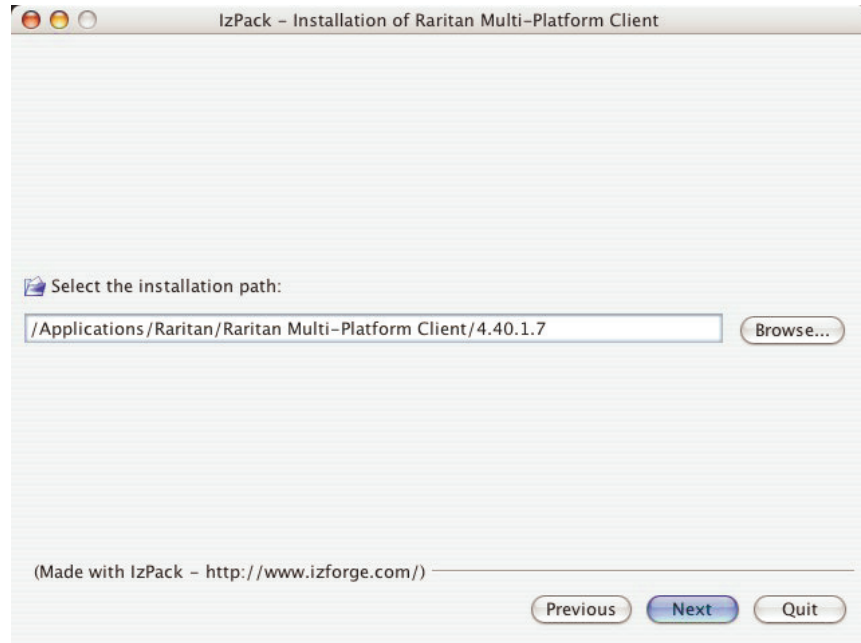


5.  Use the Browse function to select a directory to install MPC if the directory is different from the default path displayed in the "Select the installation path" field.

6.  When installation is complete, click Next.

    Once the installation is complete, the final dialog indicates where you will find an uninstaller program and provides you with the option to generate an automatic installation script.

7. Click Done to close the Installation window.
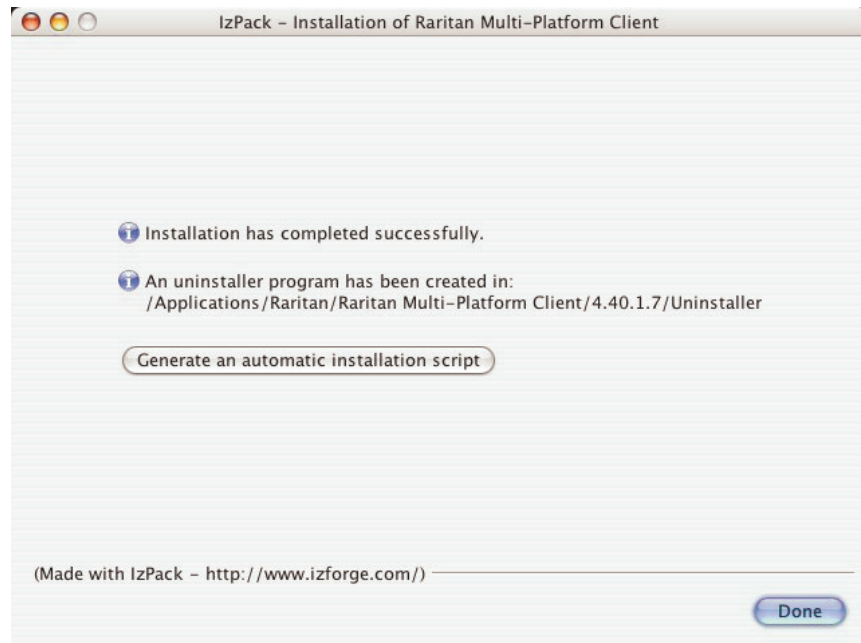


**Opening MPC in Mac OSX**

1. Open a Finder window and navigate to the directory where you installed MPC (the default location is /Applications/Raritan/Raritan MPC/4.40.1.7).



2. Double-click on the desired device to establish a connection, type your Username and Password, and click OK to log on.

## RRC Requirements and Installation Instructions

**Important: RRC works only with Microsoft Internet Explorer. If you are using a different web browser, MPC will load automatically.**
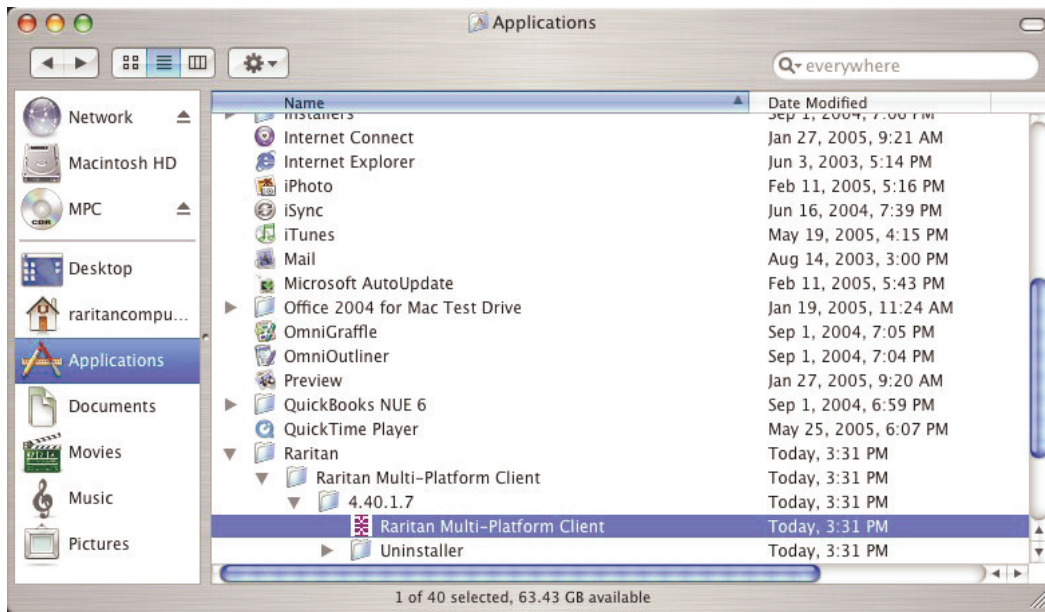
Most users access RRC via Internet Explorer, while other users, particularly those operating over a modem connection, access RRC standalone. Both options are detailed in this guide.

Note: Modem use is not supported with Raritan's Dominion KX101.

### RRC Minimum System Requirements

The minimum system requirements for the Raritan Remote Client are:

- CPU Speed: 1.0 GHz
- RAM: 512 Mbytes

Note: Running the client software on system configurations below either of these specifications may impact performance and result in errors.

### Opening RRC from a Web Browser

Your IP-Reach and Dominion units feature web browser-access capabilities and can provide a connection from any Windows-based, remote PC running Microsoft Internet Explorer 6.0/7.0.

### Security Settings

To access IP-Reach or a Dominion device via the web, your web browser must be configured appropriately on the Internet Explorer security settings tab. Specifically:

- "Download Signed ActiveX controls" should be set to either Enable or Prompt.

- "Run ActiveX controls and plug-ins" should be set to either Enable or Prompt.

Please consult your Microsoft Internet Explorer documentation for additional information.

Note: Microsoft Windows 2000, Microsoft Windows XP, and Microsoft Windows 2003 restrict certain types of users from downloading and running ActiveX controls and plug-ins regardless of the above settings in Internet Explorer. Please consult your Microsoft Windows documentation for more information.

### Opening RRC

1. Ensure that your browser security settings are configured appropriately and type the IP address assigned to your IP-Reach or Dominion unit in the URL field of your web browser. See the Initial Configuration section in the device user guide for additional information on configuring IP addresses.
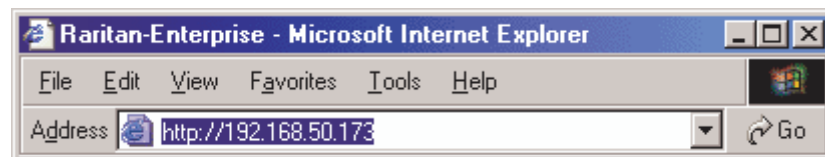


Note: IP-Reach and Dominion units ship with the default IP address of 192.168.0.192. Please note that an IP address must be used. Host names are not currently supported.

You will be redirected to an HTTPS (128-bit) secure webpage so you can open RRC.
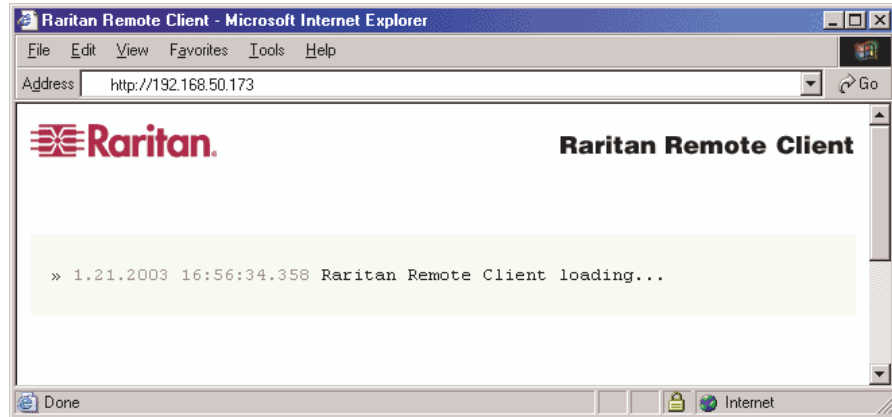


2. Depending on your browser and its security configuration, you may see any or all of the following dialogs asking you to confirm you want to access and open an externally-provided application. Click Yes to accept these prompts.
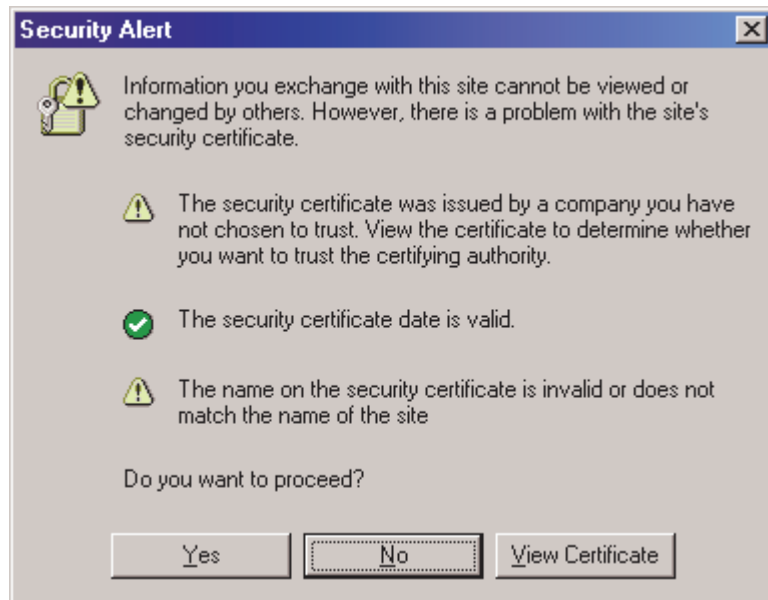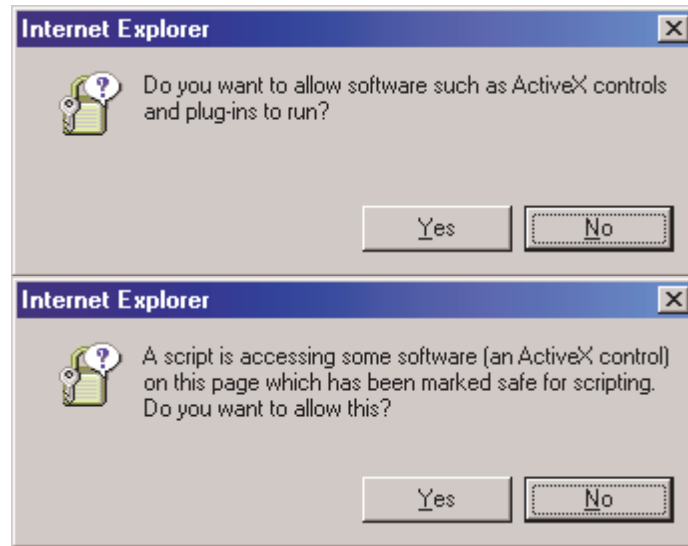
**Removing RRC from the Browser Cache**

- To remove RRC from your browser cache for any reason, follow the standard procedure for your web browser software.

➢ *To remove cached files in Internet Explorer v6.0:*

1. If you have used RRC recently, exit all instances of Internet Explorer and restart Internet Explorer.

2. On the Internet Explorer Tools menu, click Internet Options.

3. When the Internet Options dialog appears, click on the General Settings tab and then click Delete Files.

4. Click on the Settings tab and then click View Objects.

5. Internet Explorer will display a list of cached objects. Select any entries named "TeleControl Class," "Raritan Console," or "Power Board" and delete them.

### Installing and Opening Standalone RRC

Note: This step is optional. IP-Reach or Dominion can be accessed from a remote PC either by installing RRC software or by opening RRC via a web browser. Accessing IP-Reach or Dominion via a web browser does not require any software installation on a remote PC.

This section lists the steps required to invoke RRC using standalone software, which may be useful for accessing IP-Reach or Dominion via modem or if you wish to close firewall access to ports 80 and/or 443.

1.  Launch your web browser and go to Raritan's website (http://www.raritan.com/).

2.  Click Support in the top navigation bar and then click Firmware Upgrades in the left navigation panel (or type the URL http://www.raritan.com/support/firmwareupgrades).

3.  Scroll down the page until you see the appropriate product name and click on it.

4.  Locate the version of the standalone RRC client you are using. The entry for the standalone RRC client is a .zip file which contains the release notes and the installer for standalone RRC. Check the release notes for the latest information.

5.  Download the .zip file or simply click on the .zip file entry.

6.  Double-click on the installer executable in the .zip file and follow the instructions in the InstallShield Wizard to complete the RRC installation. Be sure to check the release notes for the latest information and any release specific instructions.

    Depending upon the configuration of your PC, the RRC installation program may also automatically install DirectX and Microsoft Foundation Class libraries (if they are required). If they are installed, you will be asked to restart your PC after the installation.

7.  A Raritan Remote Client icon will appear on your desktop after the installation is complete. Click on this icon to open the standalone RRC application.

    The standalone application can be uninstalled using the Add or Remove Programs function in the Windows Control Panel.

Note: You must uninstall the application before installing a new version of standalone RRC.

---

**Modem Connectivity  in MPC**

➢ *To make modem connectivity available on Unix, Linux, and Mac OS for non-root users:*

1. As the root, change the group for /etc/ppp directory and required files:

   a. chgrp uucp /etc/ppp

   b. chgrp uucp /etc/ppp/pap-secrets

   c. chgrp uucp /etc/ppp/peers

2. Change the permissions for /etc/ppp chmod g+rwx /etc/ppp

3. Change the permissions for /etc/ppp/pap-secrets chmod g+rwx /etc/ppp/pap-secrets

4. Change the permissions for /etc/ppp/peers chmod g+rwx /etc/ppp/peers

5. Set the suid bit to pppd chmod u+s /usr/sbin/pppd (/usr/bin/pppd depending on the location of pppd)

6. Assign users to the uucp group:

   a. /usr/sbin/usermod -G {existing groups for user1},uucp user1

   b. /usr/sbin/usermod -G {existing groups for user2},uucp user2, etc.

7. When logged in as the normal user, update the path for access to pppd and the chat export PATH=$PATH:/usr/sbin (/usr/bin depending on the location of pppd).

---

Note: For both root and non-root users, ensure that the options file exists under /etc/ppp

---

# Operation

---

Note: Unless otherwise indicated, the contents of this section are the same in MPC and RRC.

---

## Connection Profiles

Connection profiles store important information about your Raritan device such as the IP address, custom TCP ports, preferred compression settings, and custom security keys. A profile is required to access devices outside your subnet and to access devices using a dial-up connection.

Through profiles, you can set up personalized connections. These profiles are not shared among other users.

Tip: If your Raritan device is configured to use a custom TCP port or a group security key, first create a connection profile so that you can access the device.

Connection profiles are created, modified, deleted, established, and closed in the same way for both MPC and RRC.

### Creating Profiles

#### ➢ *To create a profile:*

1. There are two ways to create a profile:

   - For automatically discovered devices, right-click on the device name in the Navigator and select Add Profile from the shortcut menu.

   - For other devices, select Connection > New Profile.

   The Add Connection dialog appears. Options are organized into three tabs.

2. On the Connect tab, type a meaningful description of the device in the Description field (up to 32 alphanumeric, *special characters* (see "Special Characters in MPC" on page 148) characters are allowed). This description identifies the Raritan device in the Navigator.

3. From the Product drop-down, select the Raritan product you are using.

4. Select the Connection Type from the drop-down to specify the type of connection.

   Note: Only TCP/IP is available for Generation 2 (G2) Raritan devices.

   a. If TCP/IP Connection is selected for a LAN/WAN connection, complete the information in the Find Raritan device By section:

   - Type the IP Address assigned to your Raritan device.

- Type the name assigned to your Raritan device during initial setup.

- Type the Domain Name Server (DNS) name. Use this option if you use a DNS server to resolve a DNS name to the IP Address assigned to your Raritan device.

Note: You cannot use this option for Raritan Generation 2 (G2) devices.



a. Select Dial Up Connection from the Connection Type drop-down for a direct analog modem connection to the Raritan device. Type the parameters that MPC or RRC should use to establish a connection. Dial up connection does not apply to Generation 2 (G2) or KX101.

- Enter the phone number for the dial-up connection. Remember to include any additional codes that should be dialed to establish a connection, such as country codes, area codes, or outside line access codes.

- Select the modem (as configured in Windows) from the drop-down list that will be used to dial and connect to your Raritan device.

Note: For security reasons, you must use the MPC standalone client if you require modem access. Further, one modem on a client PC can be used for only one device connection.



- Check Use Default Port Number to use the default port number (5000). For TCP Ports, Dominion KX and IP-Reach are automatically configured to use TCP Port 5000 when communicating with MPC/RRC. If you do not want to use the default port number, uncheck the checkbox and type the port number in the Port Number field.

1. Update the Compression tab (not available for Generation 2 (G2) Raritan devices):

   a. Select the Connection Speed from the drop-down. IP Reach and Dominion can automatically detect available bandwidth and not limit bandwidth use, but you can also adjust this usage according to bandwidth limitations. Depending on the Raritan device in use, different options may be available.

- Auto Detect
- 100mb Ethernet
- 10mb Ethernet
- 1.5mb (Max DSL/T1)
- 1mb (Fast DSL/T1)
- 512 kb (Medium DSL/T1)
- 384 kb (Slow DSL/T1)
- 256 kb (Cable)
- 128 kb (Dual ISDN)
- 56 kb (ISP Modem)
- 33 kb (Fast Modem)
- 24 kb (Slow Modem)

a. Select the Color Depth from the drop-down. IP-Reach and Dominion can dynamically adapt the color depth transmitted to remote users in order to maximize usability in all bandwidth constraints. Depending on the Raritan device in use, different options may be available.

- Auto Select Color
- 15-bit RGB Color
- 12-bit RGB Color
- 8-bit RGB Color
- 5-bit Color
- 4-bit Color
- 4-bit Gray
- 3-bit Gray
- 2-bit Gray
- Black and White

Important: For most administrative tasks (server monitoring, reconfiguring, etc.), administrators do not require the full 24-bit or 32-bit color spectrum made available by most video graphics cards. Attempting to transmit such high color depths wastes network bandwidth.

a. Select Progressive Update to increase the usability in constrained bandwidth environments. When Progressive Update is enabled, IP-Reach or Dominion initially sends an image of the remote desktop at lower color depths, and then provides higher color depth images as bandwidth allows.

Note: When Color Depth is set to Auto Select Color (default), Progressive Update is automatic. IP-Reach or Dominion will enable/disable Progressive Update as required, disabling it for fast connections and enabling it for slow connections.

b.  When using IP-Reach or Dominion over an unpredictable public WAN (particularly in international scenarios), checking the Internet Flow Control check box ensures that packets transmitted by IP-Reach or Dominion are received and reconstructed by MPC/RRC in the correct order.

c.  Use the slider to select the desired level of video Smoothing (15-bit mode only). The level determines how aggressively to blend page regions with small color variation into a single smooth color. Smoothing improves the appearance of the target video by reducing the video noise that is displayed.

d.  Select the "Frames per second". This setting instructs MPC on how often to redraw the video display of the target. This only affects the client display behavior and has no bearing on the data rate of the video being sent to the client. Setting this option higher makes the video appear smoother but also requires more processing power.

Note: "Frames per second" option is only available in MPC.
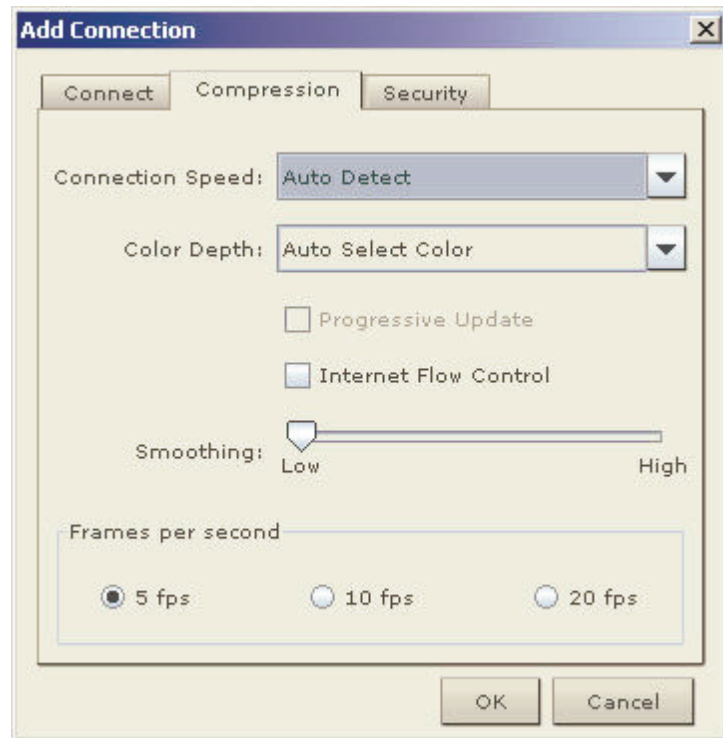
1. Update the Security tab.

   Please note that the Security tab is disabled for Generation 2 Raritan devices. If your Dominion or IP-Reach unit is configured to use a private security key, input that key to gain the authorization required to initiate a connection to that IP-Reach or Dominion unit.

   a. Type the private security key in the Private Key field.

   b. Retype the private security key in the Confirm Private Key field to ensure no typographical errors were made.

2. Click OK to create the connection profile.



**Modifying Profiles**

➢ *To modify a profile in MPC or RRC:*

1. Select the device in the Navigator panel and right-click on it.

2. Select Modify Profile. The Modify Connection dialog appears.



3. Update the fields as appropriate.

4. Click OK.

**Deleting Profiles**

➢ *To delete a profile in MPC or RRC:*

1. Select the device with a profile in the Navigator and right-click on it.

2. Select Delete Profile.

3. When prompted to confirm the deletion, click Yes to delete the profile for this device or click No to return to the application without deleting.

### Establishing a New Connection

Note: Depending on your version of the JRE, you might receive a certificate message when using the standalone application to access a Dominion device. You have to accept the certificate in order to establish the connection.

To connect to a device, double-click the device's icon in the Navigator, then type your user name and password to connect. You can also right-click on the device name in the Navigator and select New Connection.

Note: The default IP-Reach or Dominion login user name is admin and the default password is raritan. You have administrative privileges using these login credentials.

Passwords are case sensitive and must be entered in the exact case combination in which they were created. To ensure security, change the default username password as soon as possible.

If you do not see an icon for your IP-Reach or Dominion device in the Navigator, please follow the instructions in the *Creating Profiles section* (see "Creating Profiles" on page 53) to create a new connection profile.

If you are having problems connecting to a device, be sure to check the following:

- Username: Raritan usernames *are not* case-sensitive.

- Password: Raritan passwords *are* case-sensitive.

- TCP Port: If you have configured your device to use a non-default TCP Port, this information must be entered into its connection profile.

- Firewall Settings: If you are accessing a device through a firewall, that firewall must be configured to allow two-way communication on TCP Port 5000 (or the custom TCP Port to which your device has been configured).

- Security Key: If you have configured your device to require a group security key, that key must be entered into the device's connection profile.

Note: If you are running MPC on Internet Explorer with both a Microsoft firewall and a non-Microsoft firewall utility installed, IE will display a message telling you that MPC is already running (even if it is not in fact running). To avoid this, deactivate one of your firewalls, or use a browser such as Mozilla or Firefox.

**Closing a Remote Connection**

To close the IP-Reach or Dominion connection, select the device in the Navigator and right-click on it. Select Disconnect from the shortcut menu.
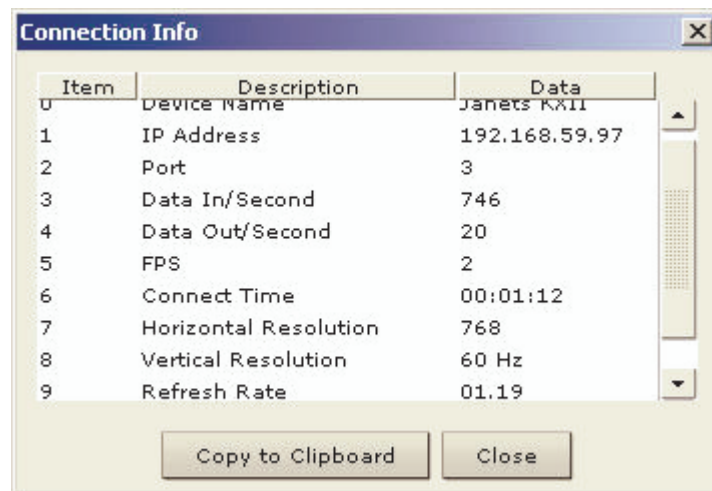
To exit MPC or RRC completely, click Exit on the Connection menu.

**MPC Connection Information**

Note: RRC can support only one modem connection at one time.

➢ *To obtain information about your MPC connection:*

- Select Connection > Connection Info. The Connection Info dialog appears.



The following information is displayed about the current connection:

| Connection information | Description |
|---|---|
| Device Name | The name of your Dominion or IP-Reach device. |
| IP Address | The IP Address of your Dominion or IP-Reach device. |
| Port | The KVM Communication TCP/IP Port used to access the target device. |
| Data In/Second | Data rate in. |

| Connection information | Description |
| --- | --- |
| Data Out/Second | Data rate out. |
| FPS | The frames per second transmitted for video. |
| Connect Time | The duration of the connect time. |
| Horizontal Resolution | The page resolution horizontally. |
| Vertical Resolution | The page resolution vertically. |
| Refresh Rate | How often the page is refreshed. |
| Protocol Version | The RFB Protocol version. |

➢ **To copy this information:**

• Click Copy to Clipboard in the Connection Info dialog. The information is now available to be pasted into the program of your choice.

## Connect to a Remote KVM Console

Once you establish a connection with a Raritan IP-Reach or Dominion device, that unit's icon in the navigator expands to display all ports enabled for remote access.
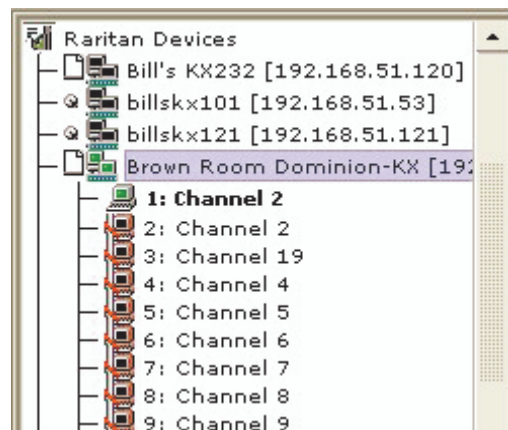
Choose one of the following options to establish a remote KVM console connection:

- Double-click on the KVM port you want to control. This method closes any previous connection before connecting to the new port.

- Right-click on the port and select Switch from the shortcut menu. This method closes any previous connection before connecting to the new port.

- Right-click on the port and select New Connection from the shortcut menu. This method allows you to connect to the selected port without closing any previous connections and create a new connection if the device supports multiple concurrent connections.

Once connected, Raritan KVM over IP devices display real-time video output of the target server (this video is compressed and encrypted according to the configuration settings specified by the Administrator). You now have complete, low-level control of the KVM console as if you were physically located next to the server.

- To close a connection, right-click on the connected device and click Disconnect.

- To exit completely, on Connection > Exit.

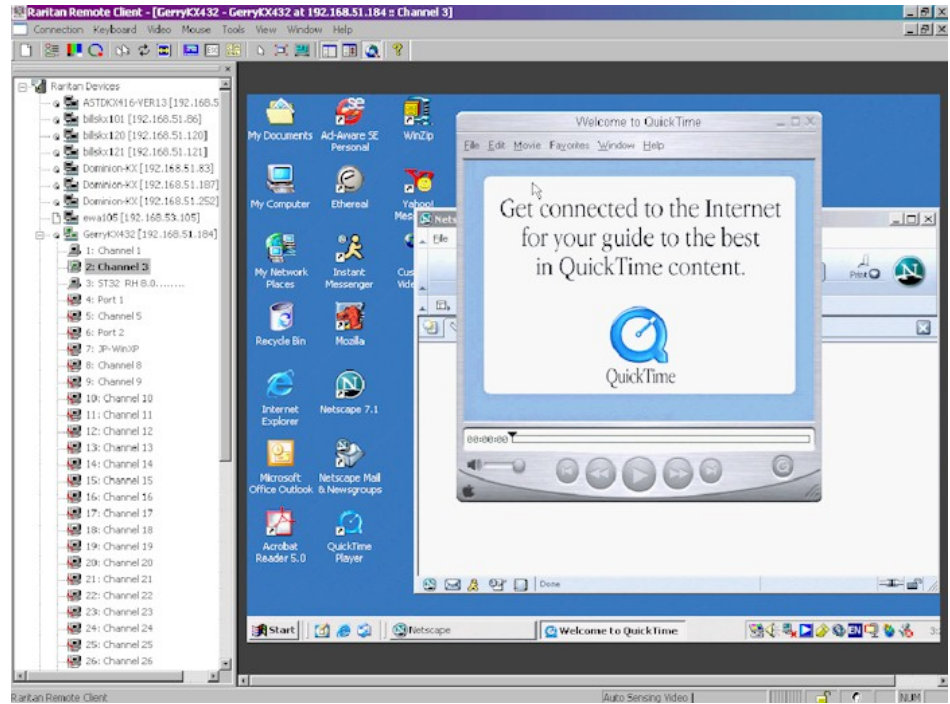## Window Layout

### MPC Interface

MPC functions are grouped into six general sections on the page. As a standalone product or using a web browser, the MPC window contains these main sections.
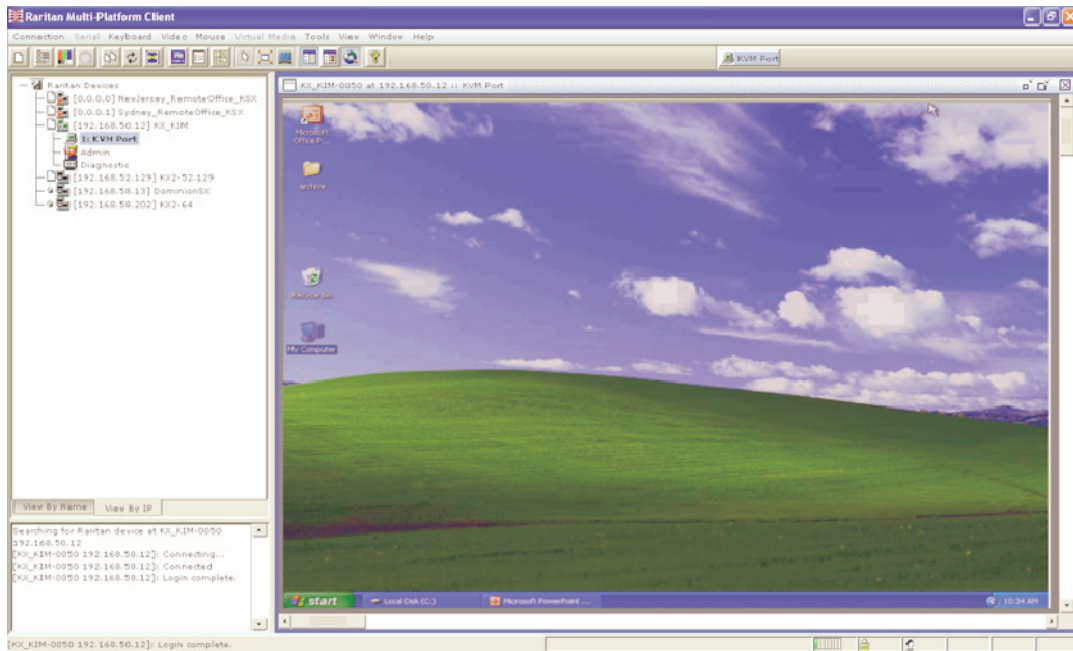
### RRC Interface

The RRC window is almost identical to the MPC window.

### Navigator

The navigator provides a tree view of every known Raritan device. From this panel, you can access all Raritan networked devices for which a connection profile exists and/or all Raritan devices automatically identified on the network.

Note: Automatic Raritan device identification uses the UDP protocol and will typically identify all Raritan devices on your subnet. Network administrators rarely allow UDP broadcasts to function outside of a subnet. Automatic Raritan device identification will find only those Raritan devices that are configured to use the default TCP Port (5000) or another broadcast port, which is defined on the Advanced tab of the Options dialog (select Tools > Options to access the Options dialog in MPC and RRC).
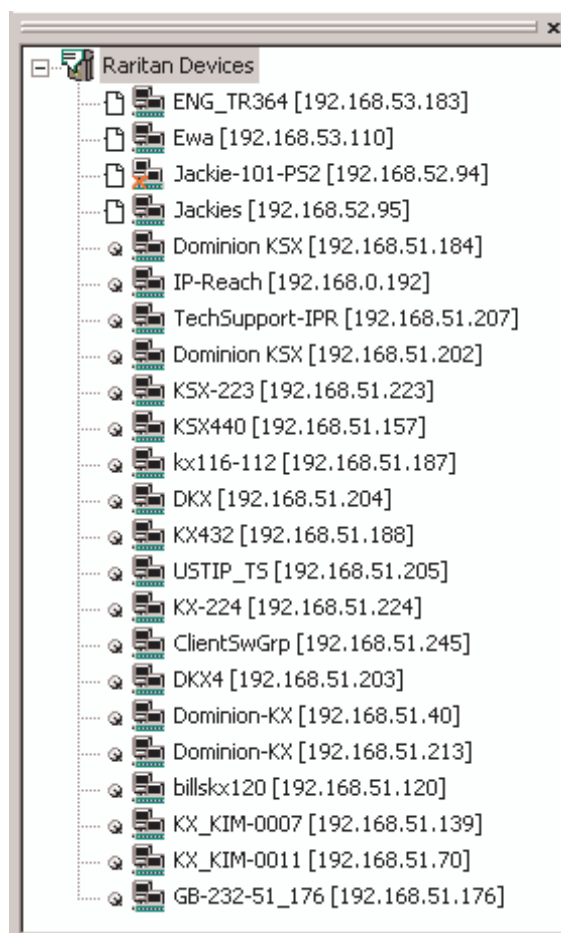
### Devices

In MPC, devices are named according to the Manager Name field on the Manager's Network Configuration page. Dominion devices are named according to the Device Name field on the Dominion Console Network Settings page.

In RRC, profiled devices are listed in the Navigator according to the data in the Description field of the device's profile. Automatically-identified devices will be identified according to the name assigned to them in that device's network configuration setting.

### Device Ports

For each device to which you are connected, you are able to expand the tree associated with it to see each device port to which you have access. Ports with a green icon indicate that you are connected to that port. The port that is bolded in the Navigator indicates that it is the port currently displayed (active) in the remote desktop area of the application.

If no name is assigned to a port, by default it is listed as 'Unnamed' in the Navigator. So, if you create a port and do not provide a name for it or if you delete an existing port's name, it will be use 'Unnamed' when you reconnect to the device.

If all device ports to which you are connecting are already occupied, an alert message appears and you must wait until one of the ports is available in order to connect.

### Navigator Icons

Each device in the Navigator is assigned two icons. One icon represents the device's connection profile and the other icon represents its network status. A connection profile is generally created by a user in order to store personalized information about specific devices (see *Creating Profiles* (on page 53) for additional information). The connection status indicates the current status of the device.

### Device Connection Profile Icons (Left Icon)

| Icon | Description |
|------|-------------|
| | Profiled - A network connection profile exists for this device. |
| | Modem Profile - A modem connection profile exists for this device. |
| | Not Profiled - The device was found on the network but a connection profile does not exist for it. |

### Device Network Status Icons (Right Icon)

| Icon | Description |
|------|-------------|
| | Connected (green) - You are currently authenticated and connected to this device. |
| | Available (black) - This device is currently available on the network but you are not currently connected to it. |
| | Unavailable - A profile exists for this device but it is not currently available on the network. (Note that all devices to which you *are not* currently connected and that have modem profiles will use this icon.) |

### Port Connection Status Icons

For each server port listed in the Navigator, the following icons can be associated with it depending on its status:

| Icon | Description |
|------|-------------|
| | Connected |
| | Available for connection. |
| | Unavailable (either no device is connected or access is blocked). |

| Icon | Description |
|------|-------------|
| 🖥 | In use by another user (may be unavailable depending on permissions). |

### *Customizing the Navigator*

### *Navigator Customization*

Use specific tools in the Toolbar to customize some Navigator attributes:

| Icon | Description |
|------|-------------|
| ▤ | Display/Hide Navigator. You can also select Navigator in the View menu to toggle between displaying and hiding the Navigator. |
| ▤ | Refresh Navigator. Updates the device status information displayed in the Navigator. |
| 🌐 | Browse Discovered Devices. When enabled, Show Discovered Devices will display devices that are "not profiled" but have been found on the network. This option can also be enabled by selecting View > Show > Discovered Devices. |
| | Note: The Browse Discovered Devices option is the only method of connecting to a Raritan device configured to use a DHCP IP address. |

### *MPC Navigator Tabs*

MPC tabs at the base of its Navigator pane. These tabs allow you to change how you display devices.

Click the View By Name tab to sort the list alphabetically by name or click the View By IP tab to sort the list numerically by IP address.



Please note that these tabs are available only in the MPC interface.

### Display and Sorting Options

To better organize your view of all ports, use the Show and Sort options in the View menu. Note that you do not need an open connection to a target to show and sort targets in the Navigation panel.

### Showing Ports

- Discovered Devices: Shows or hides discovered devices from the Navigator view. You will not see broadcast messages when this option is disabled (not selected).

- Unassigned Channels: Shows or hides channels with no assigned targets. Note that the default for Generation 1 (G1) devices is to show unassigned channels (option is enabled), whereas the default is to hide unassigned channels (option is disabled) for Generation 2 (G2) devices.

- Tools: Shows or hides the Admin and Diagnostic ports.
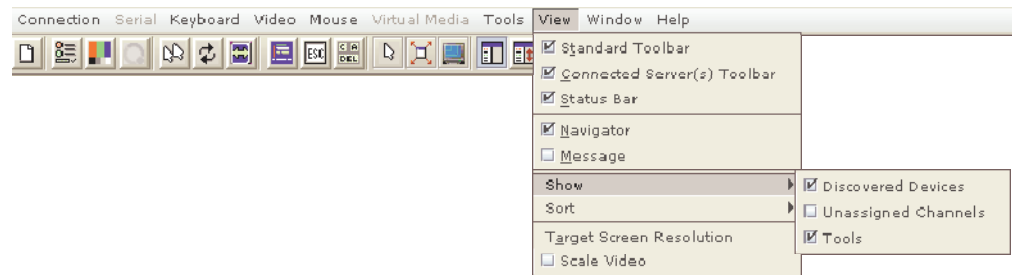
Note: These settings are saved from session to session.

### Sorting Ports

Use the Sort options on the View menu to organize port information. You are able to sort ports by channel number, channel name, or channel status.
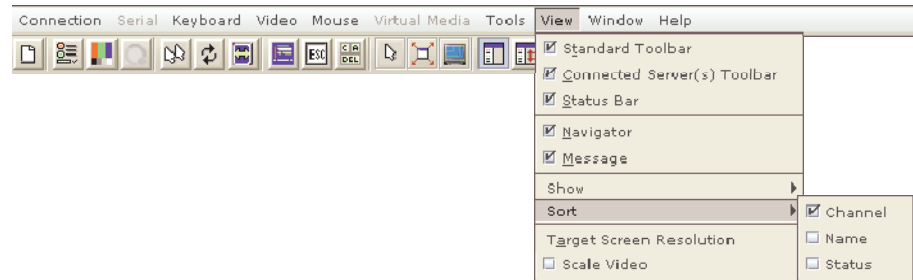


Channel Number: When sorted by channel (View > Sort > Channel), ports are listed numerically.

Dominion-KX [192.168.51.34]
Dominion-KX [192.168.51.184]
   1: SUN Solaris
   2: Win2000
   3: Mac OSX
   4: Linux
   5: Dave
   6: Alice
   7: Charley
   8: Barbara
   9: Ellen
   10: Frank
   11: Gail
   12: Henry
   13: Irene
   14: Jack
   15: Dave 2
   16: Dave 0003
   17: Karen
   18: Larry
   19: Mary
   20: Neil
   21: Olivia
   22: Peter
   23: Quixote
   24: Randy
   25: Arthur
   26: Bill
   27: Charlene
   28: Deborah
   29: Xavier
   30: Evan
   31: Francine
   32: Gerry
   Admin
   Diagnostic
Dominion-KX [192.168.51.231]
Dominion-KX [192.168.51.252]
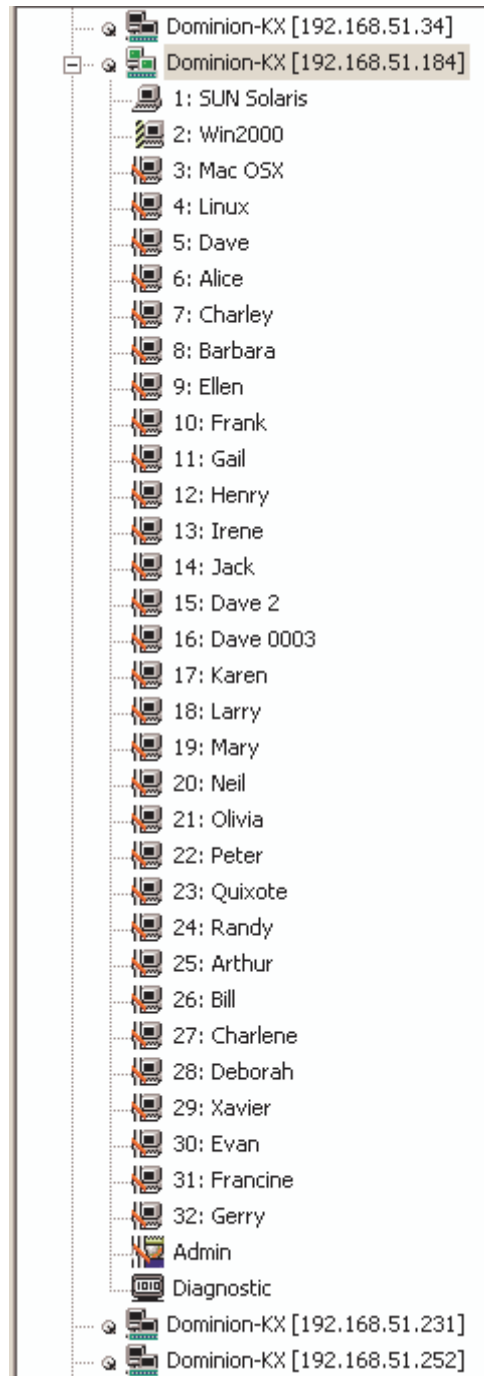
Name: When sorted by name (View > Sort > Name), port names are sorted alphanumerically within each group.
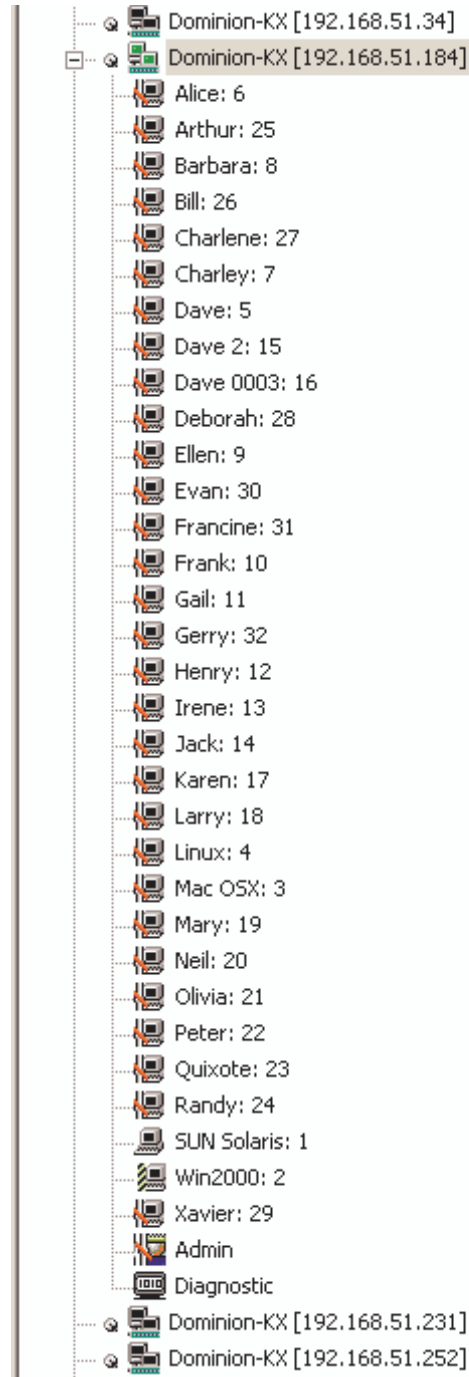
Status: When sorted by status (View > Sort > Status), ports are sorted in the following order:

- Active Channels
- Busy Channels
- Available Devices
- Unavailable Devices
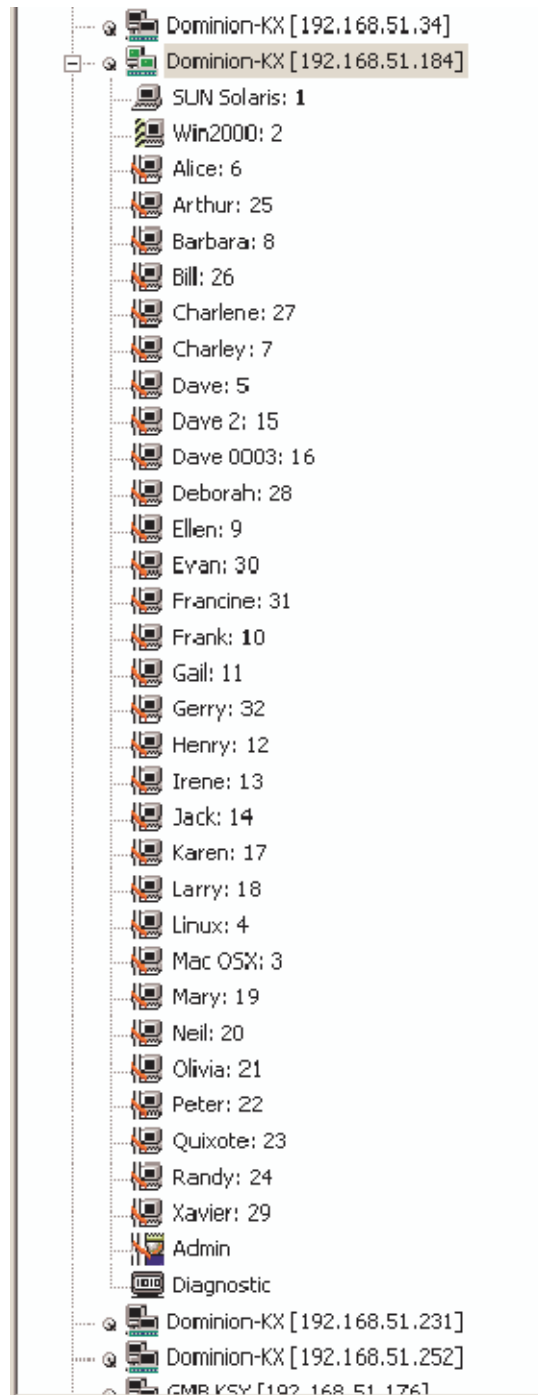
**Toolbars**

*Standard Toolbar*

The Standard toolbar provides one-click access to the most frequently-used commands.

➢ **To display the Standard toolbar:**

- Select View > Standard Toolbar.

Following is a list of the buttons in the standard toolbar as well as a description of the action performed once the buttons are selected. Additionally, if there are menu options or shortcut menu options that will perform the same task, they are listed, too.

| Button | Button Name | Description |
|---|---|---|
| | New Profile | Creates a new Navigator entry for a Raritan device. Same result as selecting Connection > New Profile in the menu. |
| | Connection Properties | Opens the Modify Connection Properties dialog from which you can manually adjust bandwidth options (such as connection speed, color depth, and so forth). Same as selecting Connection > Properties or selecting Connection Properties on the shortcut menu, which is opened by pressing Ctrl+Left Alt+M. |
| | Video Settings | Opens the Video Settings dialog, allowing you to manually adjust video conversion parameters. Same as selecting Video > Video Settings or selecting Video Settings on the shortcut menu, which is opened by pressing Ctrl+Left Alt+M. |
| | Color Calibration | Adjusts color settings to reduce excess color noise. Same as selecting Video > Color Calibrate. |

| Button | Button Name | Description |
|---|---|---|
| | Synchronize Mouse | In dual-mouse mode, forces realignment of the target server mouse pointer with the mouse pointer.<br><br>Same as selecting Mouse > Synchronize Mouse or selecting Synchronize Mouse on the shortcut menu, which is opened by pressing Ctrl+Left Alt+M. |
| | Refresh Screen | Forces a refresh of the video screen.<br><br>Same as selecting Video > Refresh Screen or selecting Refresh Screen on the shortcut menu, which is opened by pressing Ctrl+Left Alt+M. |
| | Auto-sense Video Settings | Forces a refresh of the video settings (resolution, refresh rate).<br><br>Same as selecting Video > Auto-sense Video Settings. |
| | Enter On-Screen Menu | Not applicable for IP-Reach or Dominion. Used by the application with other Raritan products.<br><br>Same as selecting Keyboard > Enter On-Screen Menu. |
| | Exit On-Screen Menu | Not applicable for IP-Reach or Dominion. Used by the application with other Raritan products.<br><br>Alternatively, select Esc on the keyboard. Same as selecting Keyboard > Exit On-Screen Menu. |
| | Send Ctrl+Alt+Del | Sends a Ctrl+Alt+Del hot key combination to the target server.<br><br>Same as selecting Keyboard > Send Ctrl+Alt+Del. |

| Button | Button Name | Description |
|---|---|---|
|  | Single Cursor Mode | Starts Single Cursor mode in which the local mouse pointer no longer appears on-screen.<br><br>Same as selecting Mouse > Single Cursor Mode. Press Ctrl+Alt+X to exit this mode. Alternatively, select Single/Double Cursor from the shortcut menu, which is opened by pressing Ctrl+Left Alt+M. |
|  | Full Screen Mode | Maximizes the screen real estate to view the target server desktop.<br><br>Same as selecting View > Target Screen Resolution (in MPC) or Full Screen (in RRC). Alternatively, press Ctrl+Left Alt+M to open the shortcut menu and then select Full/Normal Screen or press the F key on your keyboard. |
|  | Scaling | Increases or reduces the target video size so you can view the entire contents of the target server window without using the scroll bar. |
|  | Show/Hide Navigator | Toggles the Navigator panel between visible and hidden.<br><br>Same as selecting View > Navigator. |
|  | Refresh Navigator | Forces a refresh of the data displayed in the Navigator. |
|  | Show/Hide Browse All Devices | Toggles between displaying and not displaying Raritan devices in the Navigator that are automatically identified on the network and that do not have preconfigured profiles associated with them. |
|  | About | Displays the application version information.<br><br>Same as selecting Help in the menu bar. |

### Connected Server(s) Toolbar

The Connected Server(s) toolbar is comprised of a button for each connected target server port, thus enabling quick access to connected targets. When you connect to a port, a button corresponding to that port is added to the toolbar and labeled with the name of the port. Conversely, when you disconnect from a port, the corresponding button is removed from the toolbar. When a Raritan device is disconnected, all of the buttons corresponding to the ports of that device are removed from the toolbar.

Note: The Connected Server(s) Toolbar does not appear in Single Mouse mode.

By default, the Connected Server(s) toolbar is enabled (visible). To disable it, deselect Connected Server(s) Toolbar in the View menu. Buttons corresponding to windows that do not support full screen mode are not shown in the toolbar. For example, serial ports, generation one (G1) admin ports, and G1 diagnostic ports will not be displayed in the toolbar in full screen mode.

While in full screen mode, you are able to view the Connected Server(s) toolbar by hovering your mouse over the top of the screen. To use this feature, the Connected Servers Toolbar option must be selected in the View menu.



> ### To display the Connected Server(s) toolbar (when not already visible):

- Select View > Connected Server(s) Toolbar.

> ### To view the window for a target server:

- Click the button that corresponds to the appropriate connected target server you want to view. The window for the corresponding target server is displayed and the button for the selected port is highlighted. In full screen mode, note that this action is window swapping, not video switching.

Note: When you click a button that is already highlighted, the corresponding window is minimized. If you click that button again, the window is brought forward and maximized.

## Status Bar

The status bar displays session information about your connection to a Raritan IP-Reach or Dominion device. This information includes:



| Diagram key | Session information | Description |
|---|---|---|
| 1 | Video sensing status/path indicator | Indicates when video sensing occurs during connections to target KVM server ports. |
| 2 | Bandwidth usage indicator | Indicates how much of your total available bandwidth is currently being used. The connection speed setting determines total available bandwidth. <br><br> This setting is defined on the Compression tab of the Connection Properties dialog, which is accessed by selecting Connection > Properties, or pressing Ctrl+Left Alt+ M and then selecting Connection Properties. |
| 3 | Security indicator | Indicates whether the current remote connection is protected by encryption. Encryption requirements are set during IP-Reach or Dominion configuration of your Raritan KVM over IP device. <br><br> When a Raritan IP-Reach or Dominion device is configured for no encryption or SSL authentication, the Security Indicator is represented on the status bar by an open lock icon. <br><br> When SSL authentication, data encryption, or SSL encryption is applied, the security indicator is represented on the status bar by a closed lock. |

| Diagram key | Session information | Description |
|---|---|---|
| 4 | Concurrent connections indicator | Indicates that multiple remote users are currently connected to the same IP-Reach or Dominion target server on the device. One icon indicates a single user is connected and two icons indicates two or more users are connected. Concurrent connection ability can be set globally under PC share mode on the Manager Security Settings page or set per individual user in the Concurrent Access Mode setting on the KX Manager User Account Settings page. For Dominion KX II, concurrent connection ability can be set using the PC Share Mode option in the Dominion KX II Security Settings page: PC-Share permits concurrent access and Private limits server access to one user at a time. |
| 5 | Lock key indicators | Indicates the status of the current target KVM Server, in respect to the activation of the Caps-Lock, Num-Lock, and Scroll-Lock keys. If these keys are enabled on the target server being viewed, this affirmative status will be reflected on the status bar. |

Note: If a light is used on your keyboard to indicate the Scroll Lock, Num Lock, and Caps Lock key is active, it may or may not be in sync with the lock key indicator status displayed on the RRC status bar. Refer to the status bar as your guide if this occurs.

**Screen Modes**

Besides a standard view, MPC and RRC provide a full screen view and a scaling option. These options increase the remote desktop area and make viewing the target video easier.

This option it is called Full Screen mode in RRC and Target Screen Resolution mode in RRC. In both applications, you can click the Full Screen button ⊡ on the toolbar to activate Full Screen mode or use the Ctrl+Left Alt+M+F hot key combination to enable it.

### *MPC Target Screen Resolution Mode*

Target Screen Resolution mode provides you with the ability to view the target server desktop in full screen mode, which removes all toolbars from view.

Activate Target Screen Resolution mode once you are connected to a target by doing one of the following:

- Click the Full Screen icon ⊡ in the toolbar and then click OK in the confirmation message that appears.

- Click View > Target Screen Resolution and then click OK in the confirmation message that appears.

- Press Ctrl+Left Alt+M to open the shortcut menu. Next, press the F key on your keyboard or use your mouse to select Full/Normal Screen. Click OK in the confirmation message that appears.
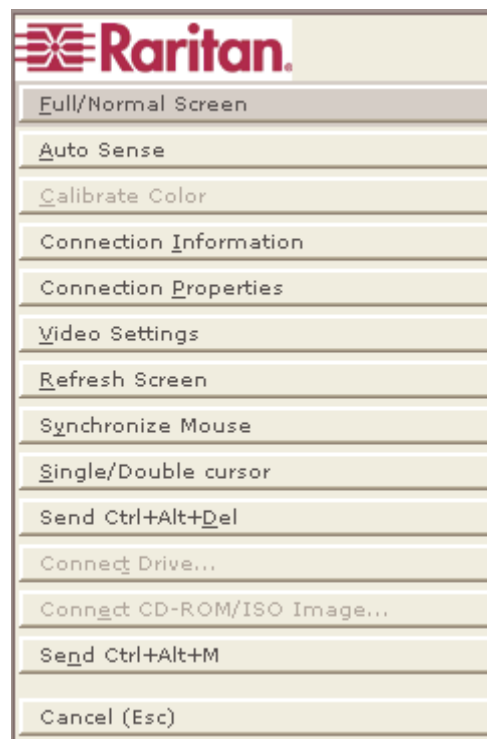
To exit full screen mode, use the shortcut menu or click the Close icon

that appears at the top right of the page when you hover your mouse along the top of the screen.

While in Target Screen Resolution mode, you are able to view the Connect Server toolbar by hovering your mouse over the top of the screen. To use this feature, the Connected Servers Toolbar option must be selected in the View menu.

Additionally, while in Target Screen mode, your monitor's resolution may be adjusted to match the resolution of the target server (provided your graphics system supports it). If your graphics system does not support the resolution of the target system, you will be unable to activate full screen mode and a message will appear requesting that you change your video resolutions first.

Tip: To view the video resolutions your system supports in a Windows environment, access your computer's Control Panel from the Windows Start menu, double-click on Display, and click on the Settings tab.
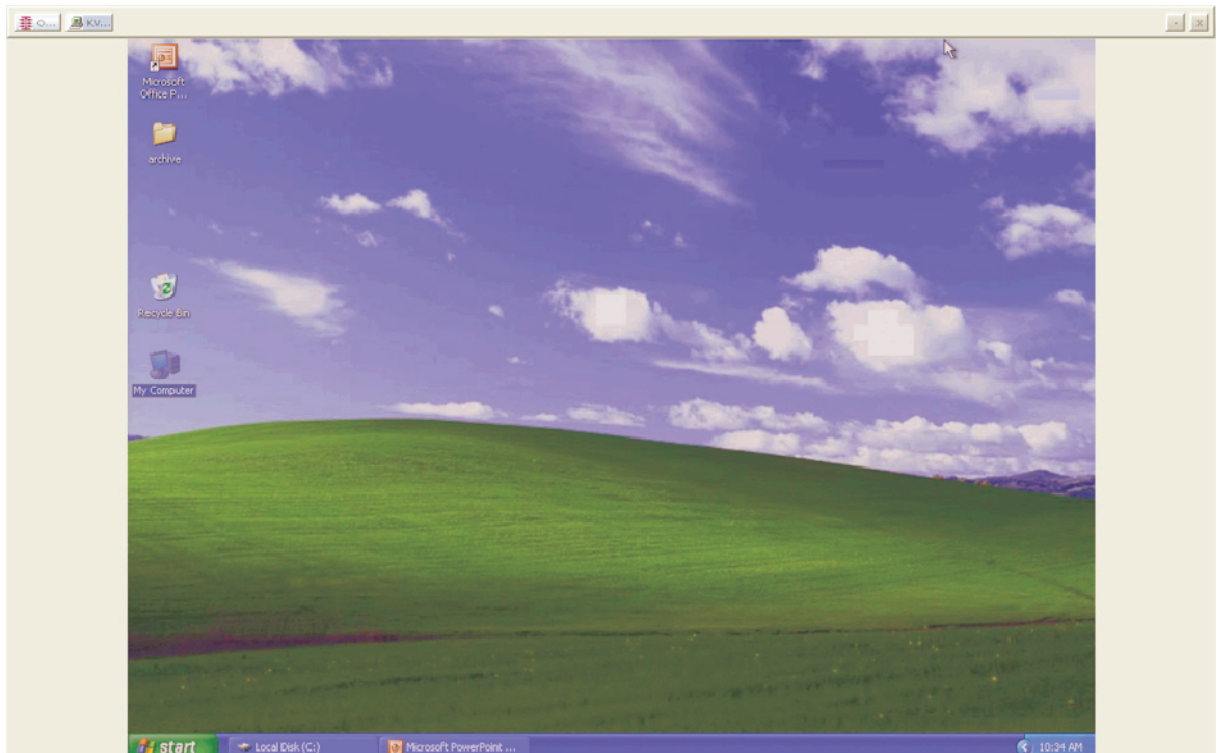


Note: The Ctrl+Left Alt+M key combination does not work for certain target servers if you are running JRE 1.5.0_01. To return from full page mode, use Alt+Tab and select MPC.

### *RRC Full Screen Mode*

Full screen mode removes the surrounding RRC graphical interface and your local desktop area, filling your screen with the video from the target server. Your screen's resolution will be adjusted to match the resolution of the target server (provided your graphics system supports it). If your graphics system does not support the resolution of the target system, you will be unable to activate full screen mode and a message will appear requesting that you change your video resolutions first.

Note: To view the video resolutions your system supports in a Windows environment, access your computer's Control Panel from the Windows Start menu, double-click on Display, and click on the Settings tab.

Activate full screen mode in one of the following ways once you are connected to a target:

- Click the Full Screen icon  in the toolbar and then click OK in the confirmation message that appears.
- Click View > Full Screen and then click OK in the confirmation message that appears.
- Press Ctrl+Left Alt+M to open the shortcut menu. Next, press the F key on your keyboard or use your mouse to select Full/Normal Screen. Click OK in the confirmation message that appears.
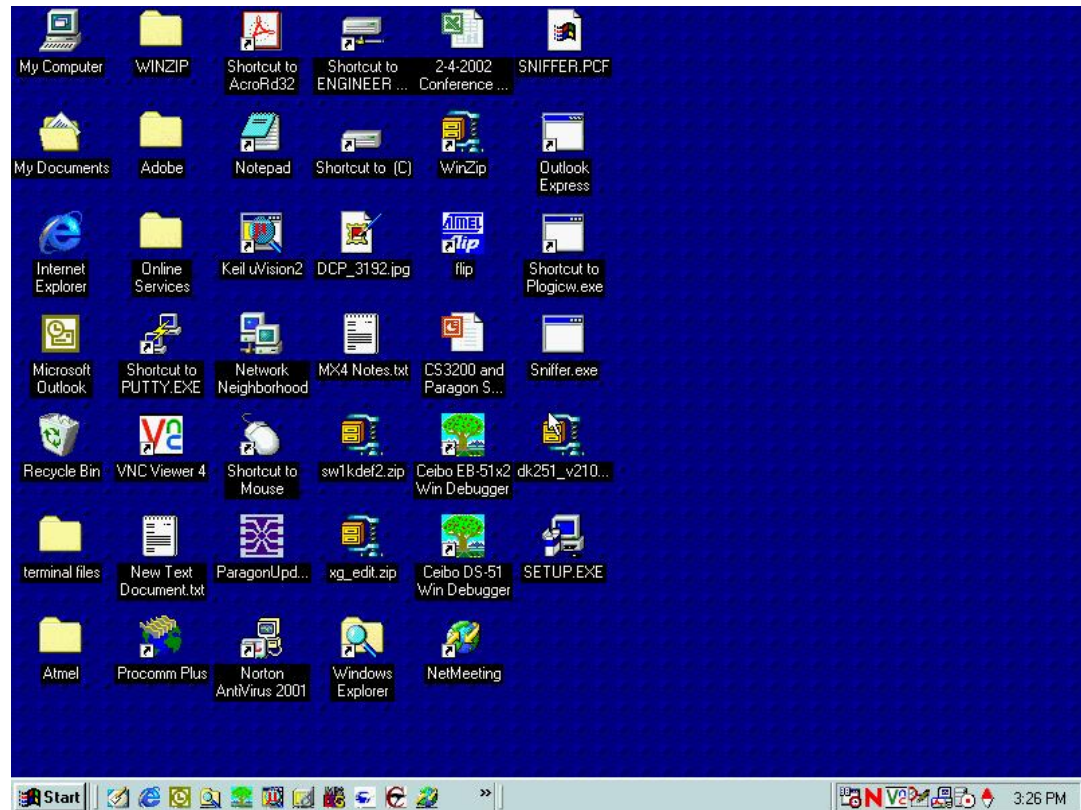
### Scaling

Scaling your target window size allows you to view the entire contents of the target server window. This feature increases or reduces the size of the target video to fit the window size and maintains the aspect ratio. This allows you to see the entire target server desktop while in standard view.

To activate Scale Video mode, do one of the following:

- Click View > Scale Video.

- Click the Scaling button ![icon] on the toolbar.

To exit this mode and return the target window to its previous size, deselect Scale Video on the View menu or click the Scaling button once again.
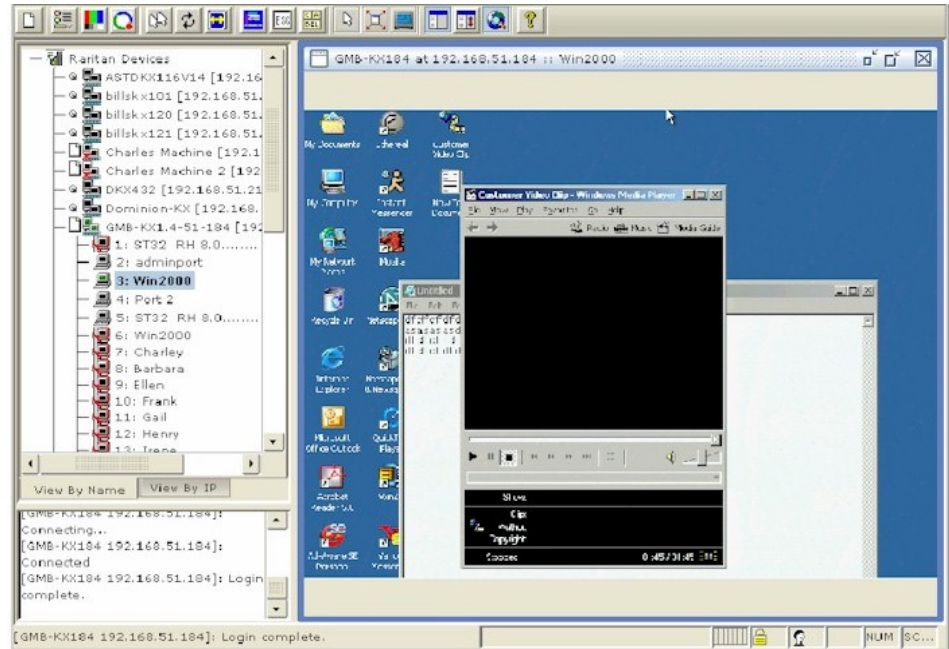


Note: Enabling Scale Video will scale the complete target video image to fit the remote desktop area as it grows or shrinks. You can combine this setting with target screen resolution for a full page affect on targets with a higher resolution than your desktop.

### RRC Scaling (Shared)

Scaling your target window size allows you to view the entire contents of the target server window. This feature increases or reduces the size of the target video to fit the window size and maintains the aspect ratio. This allows you to see the entire target server desktop while in standard view.

To activate Scale Video mode, do one of the following:

• Click View > Scale.
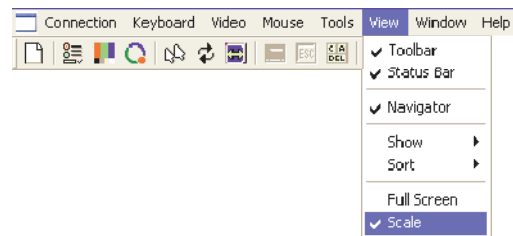


• Click the Scaling button  on the toolbar.

To exit this mode and return the target window to its previous size, click Scale on the View menu or click the Scaling button once again.

Note: Enabling Scale Video will scale the complete target video image to fit the remote desktop area as it grows or shrinks. You can combine this setting with target screen resolution for a full page affect on targets with a higher resolution than your desktop.

*Auto-Scroll*

The auto-scroll feature automatically scrolls the video display in the direction of the cursor as the cursor approaches the edge of the display. A thin border appears around the perimeter of the remote desktop area to indicate the function is on. When enabled, if you see scroll bars and then move the cursor onto the border, the page will automatically scroll in the appropriate direction.

The scroll border is activated by selecting Show Scroll Borders in the Options dialog, which is accessed by selecting Tools > Options.
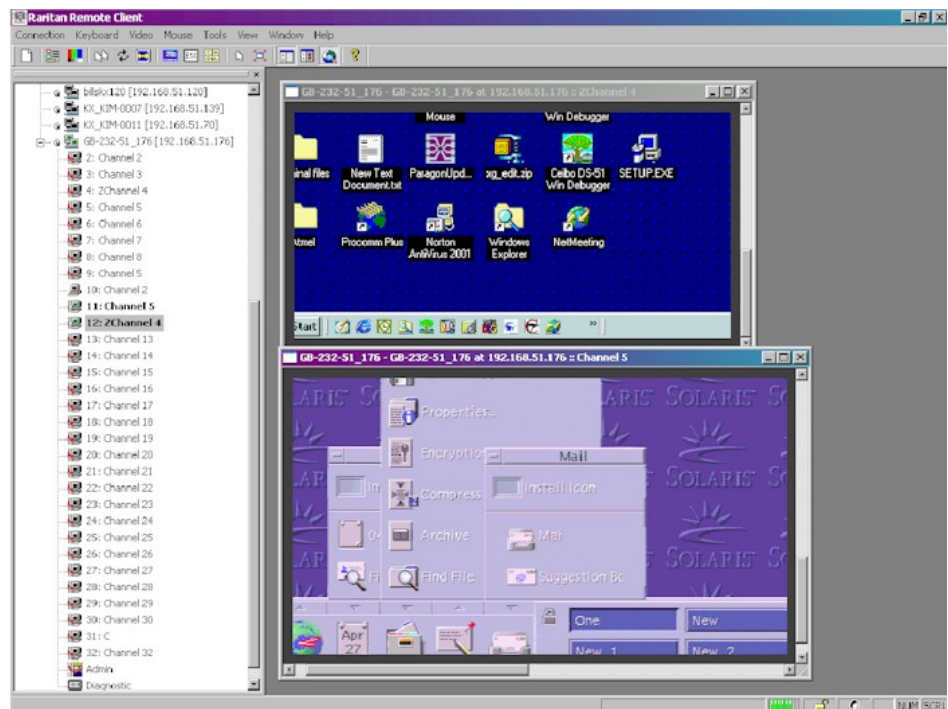
## Shortcut Menu

To access the shortcut menu, use either the default keyboard combination of Ctrl+Left Alt+M or the keyboard combination you assign. See *Changing the Shortcut Menu Keyboard Combination* (on page 92) for more information.

Execute any of the commands on the shortcut menu by either clicking the command in the menu or using a key combination. If you are using a key combination to execute a command, you will press Ctrl+Left Alt+M and then press the key on your keyboard that corresponds to the underlined letter in the shortcut menu. For example, press Ctrl+Left Alt+M+F to enter full screen mode. See the table below for information on invoking commands from the shortcut menu using keyboard combinations.

Note: You must use the Left Alt key on your keyboard when using the Ctrl+Left+Alt combination.

| To | Press Ctrl+Left Alt+M+_ |
|---|---|
| Toggle between Full/Normal screen mode* | F |
| Perform video autosensing** | A |
| Display connection information* | I |
| Display or set connection properties* | P |
| Display or set video settings* | V |
| Refresh the page | R |
| Color calibrate** | C |
| Synchronize mouse | Y |
| Change to/from single/double cursor mode | S |
| Send Ctrl+Alt+Del to the target system | D |
| Send Ctrl+Alt+M to the target system | N |
| Exit a dialog or menu without altering the keyboard state | Esc |

\* If Full Screen mode is active, executing this command will automatically end Full Screen mode.

\*\* If Full Screen mode is active, executing this command will automatically end Full Screen mode only in RRC.

TIP: If at some point you forget the keyboard combination used to open the shortcut menu, press Ctrl+Left Alt at the same time. The keyboard combination will be displayed across the bottom of the page for five seconds.
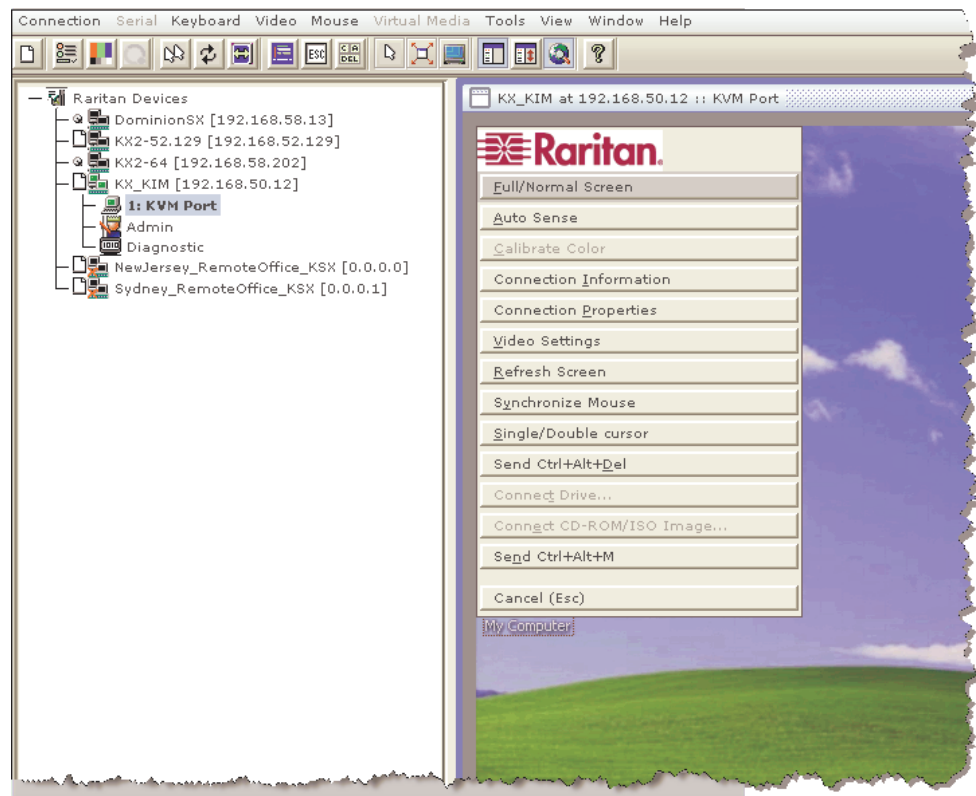


**Changing the Shortcut Menu Keyboard Combination**

➢ *To change the keyboard combination that opens the shortcut menu used in MPC, do the following:*

1. Select Tools > Options to open the Options dialog.

2. From the Keyboard Shortcut Menu HotKey drop-down, select the keyboard combination you want to use to open the shortcut menu.

3. Click OK or Apply.

Once a new keyboard combination is assigned, the new combination will be displayed in the shortcut menu and the onscreen message that displays when the combination is used.

---
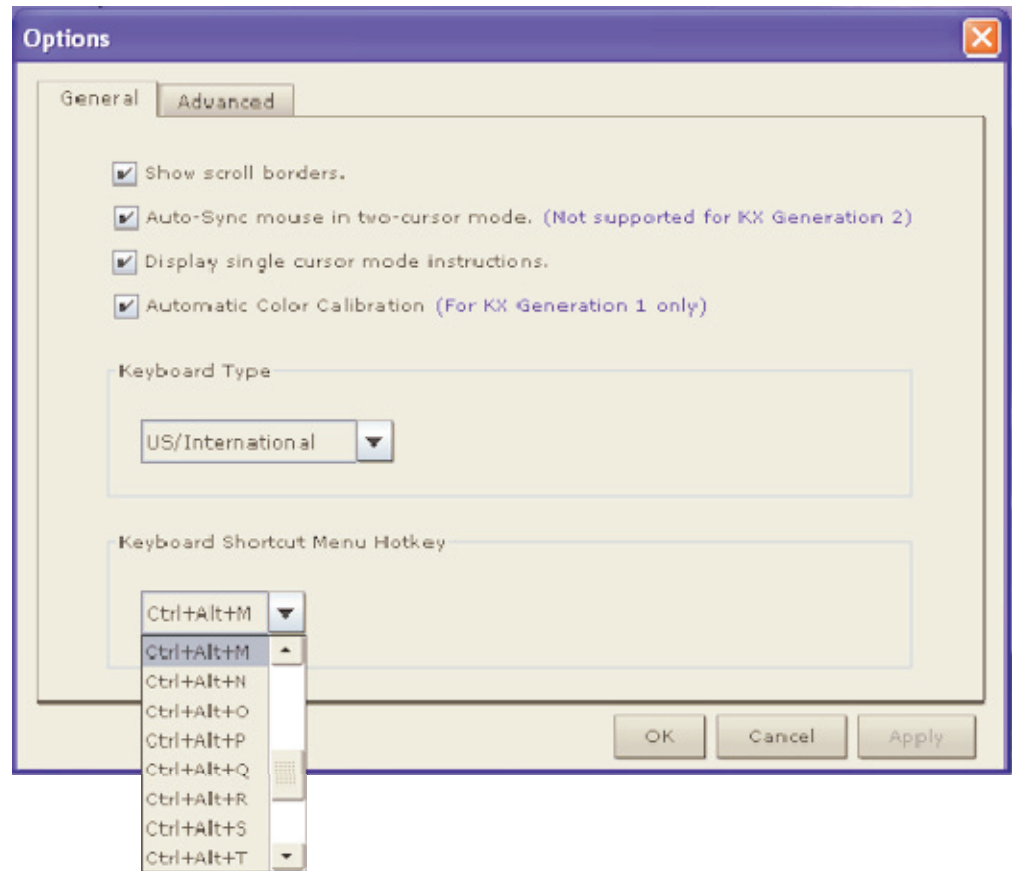
**Keyboard Macros**

A hot key combination is a set of keystrokes that performs an action when pressed. For example, the hot key combination Ctrl+Alt+0 might be created to minimize all windows.

A keyboard macro is a shortcut that sends a hot key combination to a target server. Using keyboard macros ensures that hot key combinations intended to be used on the target server are sent to and interpreted only by the target server, and not by the computer on which MPC or RRC is running.

Raritan strongly suggests the use of keyboard macros instead of hot key combinations since certain hot key combinations have been found not to work properly, depending on the platform and behavioral difference between the application and web browser version. Specifically, using hot keys can result in your own client PC intercepting the command and performing the action instead of sending the command to the target server as intended.

**Building a Keyboard Macro**

➢ *To build a macro:*

1. On the Keyboard menu, click Keyboard Macros.

2. When the Keyboard Macros dialog appears, click Add. The Add Keyboard Macro dialog then appears.

3. Build the keyboard macro by editing the fields in the dialog.

    a. Type a name in the Keyboard Macro Name field. This name will appear in the Keyboard menu after it is created.

    b. From the Hot-Key Combination field, select a keyboard combination from the drop-down list. This allows you to execute the macro with a predefined keystroke. **Optional**

    c. In the Keys to Press drop-down list, select each key you would like to use to emulate keystrokes. Select the keys in the order by which they are to be pressed. After each selection, select Press Key.

       As each key is selected, it will appear in the Keys to Release field. For example, select the Windows key and the letter D key. When these keys are selected, the macro will be executed. Add a key release attribute to the macro if needed (see next step).

d. In the Keys to Release field, you can define the keys you want released in order to run the macro. For example, specify that the keys to be pressed must also be released in order for the macro to be executed. Select the keys in the order by which they are to be released. Click Release Key after each selection.

e. Review the Macro Sequence field to be sure the macro sequence is defined correctly. The contents of this field are automatically generated and are based on the selections made in the Keys to Press and Keys to Release fields. To remove a step in the sequence, select it and click Remove. To change the order of steps in the sequence, click on the step and then click the up or down arrow buttons to reorder them as needed.

4. Click OK to save the macro. Click Clear to clear all field and start over. When you click OK, the Keyboard Macros dialog appears and lists the new keyboard macro.



5. Click Close to close the window. The macro will now appear on the Keyboard menu in the application. Select the new macro on the menu to run it or use the keystrokes you assigned to the macro.

Note: Foreign keyboard layouts are not supported when using keyboard macros, except for those keys listed in the "Add Keyboard Macro" dialog for Japanese and Korean.

### Running a Keyboard Macro

Once you have created a keyboard macro, execute it using the keyboard macro you assigned to it or by selecting it from the Keyboard menu.

#### Run a Macro from the Menu Bar

When you create a macro, it appears under the Keyboard menu. Execute the keyboard macro by clicking on its name on the Keyboard menu.

### Run a Macro Using a Keyboard Combination

If you assigned a keyboard combination to a macro when building it, you can execute the macro by pressing its assigned keystrokes. For example, press the keys Ctrl+Alt+0 simultaneously to minimize all windows on a Windows target server.

### Ctrl+Alt+Del Macro

Due to its frequent use, a Ctrl+Alt+Delete macro, used to reboot the target computer, has been preprogrammed into MPC and RRC. Clicking on the Ctrl+Alt+Delete button  in the toolbar sends this key sequence to the server or to the KVM switch to which you are currently connected.

In contrast, if you were to physically press the Ctrl+Alt+Del keys while using MPC or RRC, the command would first be intercepted by your own PC due to the structure of the Windows operating system, instead of sending the key sequence to the target server as intended.

### Common Hot Key Exceptions for MPC

The following common hot key combinations are *not* sent to the target system:

| Hot Key Combination | Description |
| --- | --- |
| Ctrl+Alt+Delete | Reboots the computer. The sequence is sent to the local system and the Windows Security (Task Manager, Shutdown, and so on) dialog is displayed. |
| Ctrl+Left Alt+M | Brings up the *shortcut menu* (on page 91). |
| Print Scrn | Treated locally and copies the page to the clipboard. |

Following are limitations to specific keyboards and hot key combinations:

| Hot Key Combination | Description |
|---|---|
| Alt Gr | Because of a limitation in the Java Runtime Environment (JRE), Fedora, Linux, and Solaris clients receive an invalid response from Alt Gr on United Kingdom and US International language keyboards.<br><br>Fedora, Linux, and Solaris do not pick up events for the Alt Gr key combination for Java 1.4.2 or 1.5. Java 1.6 appears to improve on this, although the keyPressed and keyReleased events for Alt Gr still identify it as an "unknown key code".<br><br>Further, a key pressed in combination with Alt Gr (such as on the UK keyboard Alt Gr-4, which is the Euro symbol), will only generate a keyTyped followed by a keyReleased event for that value without a keyPressed event. Java 1.6 improves upon this by filling in the keyPressed event as well. |
| Alt+SysRq+[key] | Since the SysRq keyboard stroke is used by some operating systems as a print shortcut, the Alt + SysRq + [key] combination is supported only as a macro when using DKX with RRC and MPC to a Linux target. |

### Common Hot Key Combinations for RRC

The following common hot key combinations are *not* sent to the target system:

| Hot Key Combination | Description |
|---|---|
| Ctrl+Alt+Delete | Reboots the computer. The sequence is sent to the local system and the Windows Security (Task Manager, Shutdown, and so on) dialog is displayed. |

| Hot Key Combination | Description |
|---|---|
| Ctrl+Num Lock | This toggles the state of the Num Lock light if the Num Lock state on the local system is not the same as the target system. |
| Ctrl+Caps Lock | This toggles the state of the Caps Lock light if the Caps Lock state of the local system is not the same as the target system. |
| Ctrl+Scroll Lock | This toggles the state of the Scroll Lock light if the Scroll Lock state of the local system is not the same as the target system. |
| Ctrl+Left Alt+M | Brings up the *shortcut menu* (on page 91). |
| Print Scrn | Treated locally and copies the page to the clipboard. |

Following are limitations to specific keyboards and hot key combinations:

| Hot Key Combination | Description |
|---|---|
| Alt+SysRq+[key] | Since the SysRq keyboard stroke is used by some operating systems as a print shortcut, the Alt + SysRq + [key] combination is supported only as a macro when using DKX with RRC and MPC to a Linux target. |

## Keyboard Type

### Specifying a Keyboard Type in MPC

MPC will not autodetect the type of keyboard you use, so you must specify your keyboard type to ensure accurate keyboard mapping. Options include US/International, French, German, Japanese, UK English, Korean, Belgian, and Norwegian.

➢ **To specify a keyboard type:**

1. On the Tools menu, click Options. The Options dialog will appear.

2. Click on the Keyboard Type drop-down and select your keyboard type from the list.

3. Click OK.
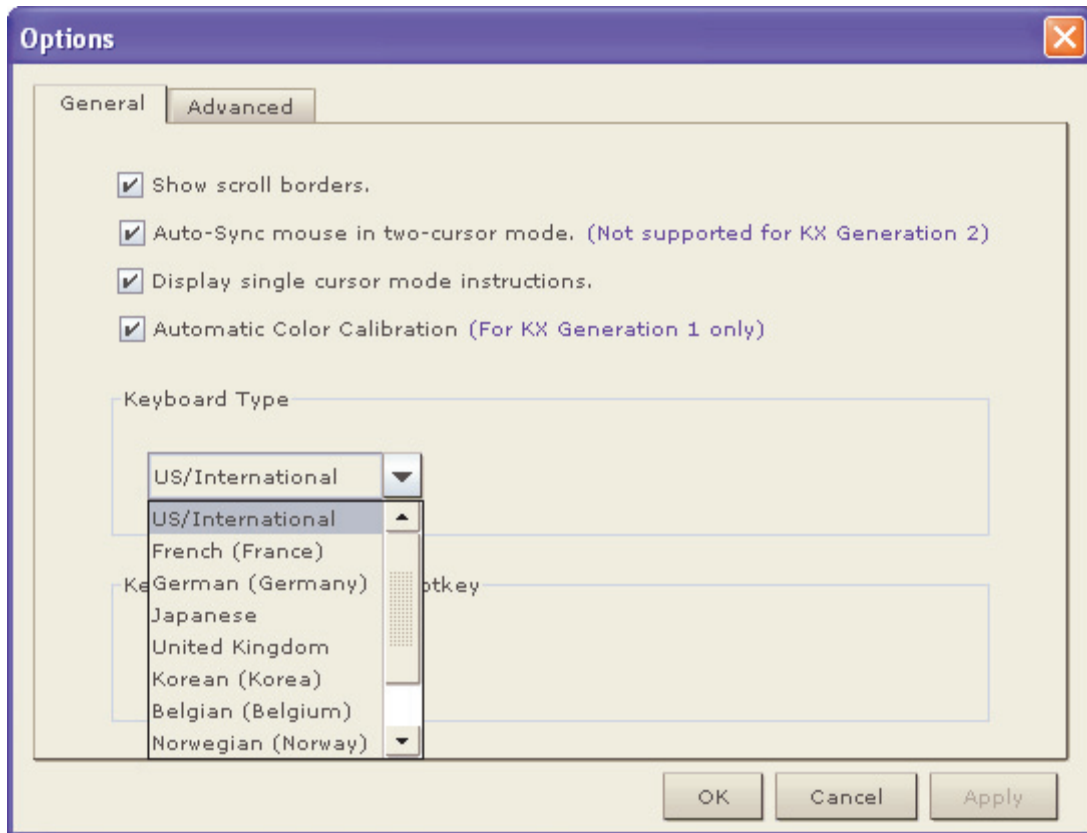
### Windows Key in MPC

When running MPC on a Windows JRE 1.4.2_x platform, if you press the Windows key 🏁 to display the Start menu, the Start menu will only appear on the client machine; the key is not sent to the target device.

When running MPC on a Windows JRE 1.5.0_x platform, if you press the Windows key, the Start menu appears on both the client and the target devices. Use your mouse to manually close the Start menu if you do not want to use.

Please note that if you do not close the target device's Start menu properly, any key that you touch on your keyboard (that has a Windows key combination function) will send that command to the target device. For example, if you press E, the target device will open a new Explorer window; if you press D, all target windows will be minimized so you can view the desktop. To close the Start menu on the target device, click on the Start button or click off of the Start menu.

### Keyboard Limitations

### Japanese Kanji Keyboards

For Kanji keyboards, when using DCIM-USBs and MPC, the remote client cannot enter EISU mode by pressing the Caps Lock key (key#30). Local port access is not affected. You can access the DCIM-USBs using RRC or using the keyboard macro Shift + Caps Lock in MPC.

### Language Configuration on Linux

Because the Sun JRE on Linux has problems generating the correct KeyEvents for foreign-language keyboards configured using System Preferences, Raritan recommends that you configure foreign keyboards using the methods described in the following table.

| Language | Configuration method |
|----------|----------------------|
| US Intl | Default |
| UK | System Settings (Control Center) |
| French | Keyboard Indicator |
| German | System Settings (Control Center) |
| Norwegian | Keyboard Indicator |
| Swedish | Keyboard Indicator |
| Danish | Keyboard Indicator |

| Language | Configuration method |
| --- | --- |
| Japanese | System Settings (Control Center) |
| Korean | System Settings (Control Center) |
| Hungarian | System Settings (Control Center) |

Note: The Keyboard Indicator should be used on Linux systems using Gnome as a desktop environment.

### Single Mouse Mode/Dual Mouse Mode

When remotely viewing a target server that uses a mouse, you will see two mouse pointers on the remote desktop. When your mouse pointer lies within the remote desktop area, mouse movements and clicks are directly transmitted to the connected target server. The pointer, generated by the operating system on which MPC or RRC is running, slightly leads the target server's mouse pointer during movement. This is a result of digital delay.

On fast LAN connections, you may want to disable the mouse pointer and view only the target server's pointer. To toggle between these two modes, select Single/Double Cursor on the shortcut menu to enable single/double cursor mode. Alternatively, click the Single Mouse Pointer icon ⌕ in the toolbar or click Mouse > Single Cursor Mode.
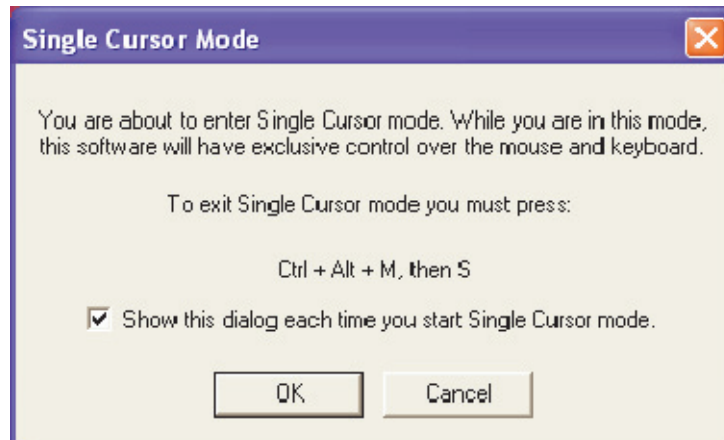
When in Dual Cursor mode, press Ctrl+Left Alt+M and execute the Synchronize Mouse shortcut to force realignment of the mouse pointers. If the mouse pointers still remain out of sync, click on the Auto-Sense Video Settings button  on the toolbar.

Note: When in Dual Cursor mode, if the dual mouse pointers are synchronized but left idle for five minutes or longer, the target mouse pointer will automatically align itself with the upper left corner of the target window. Execute the Synchronize Mouse command to ensure local and target mouse pointer alignment.

Single Mouse Cursor mode for Apple Mac target servers is supported for MPC. Select Single Mouse Cursor on the Mouse menu in MPC to enter this mode. While in this mode, the cursor will remain in the video window for the Mac Server. To exit, open the shortcut menu and press S on the keyboard.

### Automatic Mouse Synchronization

When in Dual Cursor mode, the system will automatically align the mouse pointers when the cursor is inactive for 15 seconds. Enable this feature by selecting Options from the Tools menu and clicking on the checkbox before Auto-Sync mouse in two-cursor mode.

### Mouse Synchronization Options

In addition to synchronizing mouse pointers or toggling between single and double cursor mode, the Mouse menu provides three options for synching pointers when in Dual Cursor mode:

| Menu Option | Description |
| --- | --- |
| Absolute | When connected to selected Dominion devices and targets with USB ports, the application will use absolute coordinates to keep the pointers in sync. |
| | Note: The absolute mouse setting requires a USB target system and is the recommended mouse setting for KX101. |

| Menu Option | Description |
| --- | --- |
| Intelligent | Under certain conditions, the application can detect the target mouse settings and synchronize the mouse pointers accordingly, accelerating the mouse on the target device. See *Intelligent Mouse Synchronization Conditions* (see "Intelligent Mouse Synchronization" on page 105) for more details. |
| Standard | This is the standard mouse synchronization algorithm. For the proper target mouse settings, see the user guide of your Raritan device. |

Please note that the intelligent and standard mouse are only available to users working on Dominion devices.

**Intelligent Mouse Synchronization**

The Intelligent Mouse Synchronization command, available on the Mouse menu, automatically synchronizes mouse cursors during moments of inactivity. For this to work properly, however, the following conditions must be met:

- The active desktop should be disabled on the target.

- No windows should appear in the top left corner of the target page.

- There should not be an animated background in the top left corner of the target page.

- The target mouse cursor shape should be normal and not animated.

- The target mouse speeds should not be set to very slow or very high values.

- Advanced mouse properties such as "Enhanced pointer precision" or "Snap mouse to default button in dialogs" should be disabled.

- Choose "Best Possible Video Mode" in the Video Settings window.

- The edges of the target video should be clearly visible (that is, a black border should be visible between the target desktop and the remote KVM console window when you scroll to an edge of the target video image).

After autosensing the target video, manually initiate mouse synchronization by clicking the Synchronize Mouse button on the toolbar. This also applies when the resolution of the target changes if the mouse cursors start to desync from each other.

If intelligent mouse synchronization fails, this mode will revert to standard mouse synchronization behavior.

Please note that mouse configurations will vary on different target operating systems. Consult your OS guidelines for further details. Also note that intelligent mouse synchronization does not work with UNIX targets.
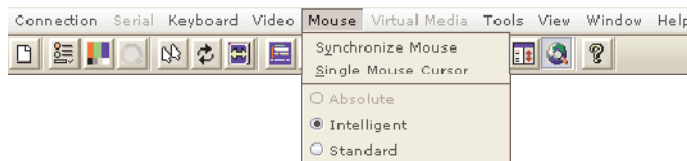
## Connection and Video Properties

The IP-Reach and Dominion dynamic video compression algorithms maintain KVM console usability under varying bandwidth constraints. The IP-Reach and Dominion devices optimize KVM output not only for LAN use, but also for WAN and dial-up use. These units can also control color depth and limit video output, offering an optimal balance between video quality and system responsiveness for any bandwidth constraint.
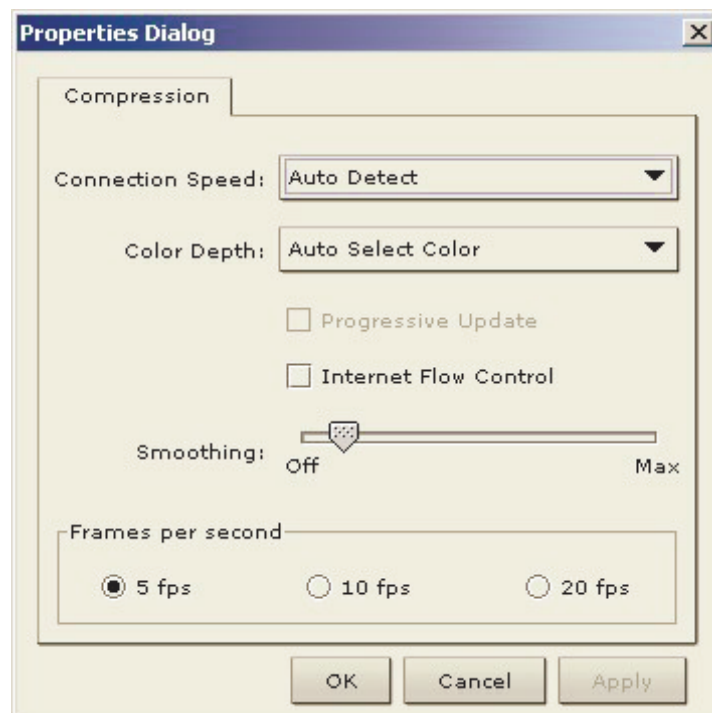
The parameters discussed in this section can be optimized in the Connection Properties dialog and Video Settings dialog to suit your requirements for different operating environments.

**MPC Connection and Video Properties**

*MPC Connections*

➢ *To set connection properties in MPC:*

1. Select Connection > Properties or click the Connection Properties button in the toolbar. Update the settings in the Compression tab.

2. Connection Speed: Use this setting to manually adjust the connection speed to accommodate bandwidth constraints. IP-Reach and Dominion can automatically detect available bandwidth and not limit bandwidth use, but you can also adjust this usage according to your needs. Depending on the Raritan device in use, different options may be available.

   - Auto Detect

   - 1G Ethernet

   - 100mb Ethernet

   - 10mb Ethernet

   - 1.5mb (Max DSL/T1)

   - 1mb (Fast DSL/T1)

   - 512 kb (Medium DSL/T1)

   - 384 kb (Slow DSL/T1)

   - 256 kb (Cable)

   - 128 kb (Dual ISDN)

   - 56 kb (ISP Modem)

   - 33 kb (Fast Modem)

   - 24 kb (Slow Modem)

3. Color Depth: IP-Reach and Dominion can dynamically adapt the color depth transmitted to remote users in order to maximize usability in all bandwidths. Select from among the options in the drop-down list (depending on the Raritan device in use, different options may be available):

   - 15-bit RGB Color

   - 8-bit RGB Color

   - 4-bit Color

   - 4-bit Gray

   - 3-bit Gray

   - 2-bit Gray

   - Black and White

   - For information on Progressive Update, Internet Flow Control, Smoothing (15-bit mode only), and Frames per second (MPC only), please refer to *Connection Profiles* (on page 53).

Important: For most administrative tasks (server monitoring, reconfiguring, etc.), administrators do not require the full 24-bit or 32-bit color spectrum made available by most video graphics cards. Attempting to transmit such high color depths wastes network bandwidth.

4. Click OK to change the Connection Properties.
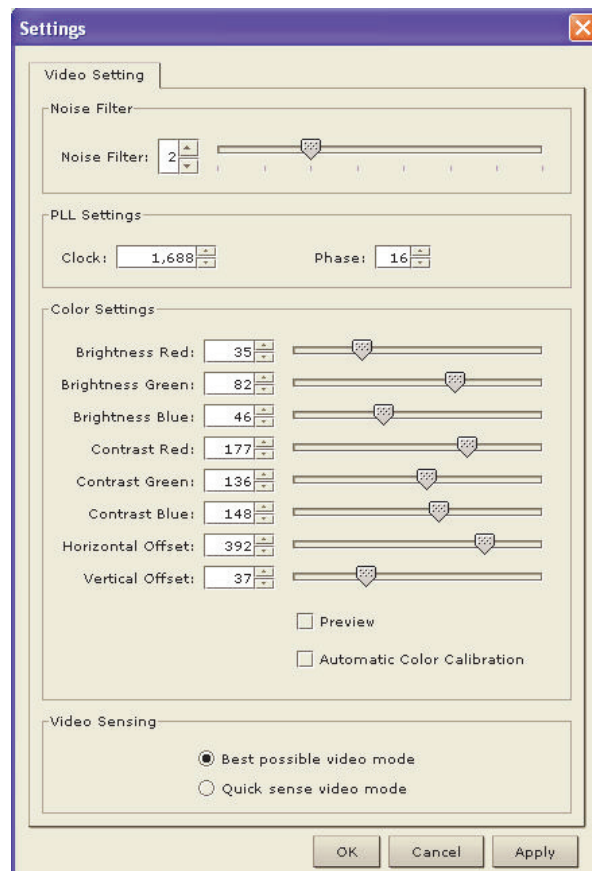
*MPC Video Properties*

**Refreshing Video Settings**

Video settings can be refreshed in several ways:

- Using Video > Refresh Screen.

- Directing IP-Reach or Dominion to automatically detect the video settings (Video > Auto-sense Video Settings).

- Using the *Color Calibration* (on page 124) command to calibrate the video, thereby enhancing the colors that are displayed.

- Changing the settings from the Video Settings dialog.

**Change RRC Video Settings**

➢ **To change the video settings:**

1. Select Video > Video Settings or click the Video Settings button in the toolbar. The Settings dialog appears and you can update the desired settings.

2. Noise Filter: IP Reach and Dominion can filter out the electrical interference of video output from graphics cards. This feature optimizes picture quality and reduces bandwidth. Higher settings transmit variant pixels only if a large color variation exists in comparison to the neighboring pixels. However, setting the threshold too high can result in the unintentional filtering of desired page changes. Lower settings transmit most pixel changes. Setting this threshold too low can result in higher bandwidth use.

Note: Lower Noise Filter settings (approximately 1 to 4) are recommended. Although higher settings will stop the needless transmission of false color variations, true and intentional small changes to a video image may not be transmitted.

3. PLL Settings: If the video image looks extremely blurry or unfocused, the PLL settings for clock and phase can be adjusted until a better image appears on the active target server.

Warning: Please exercise caution when changing the clock and phase settings since doing so may result in lost or distorted video and you may not be able to return to the previous state. Contact Raritan Technical Support before making any changes.

   ▪ Clock: Controls how quickly video pixels are displayed across the video page. Changes made to clock settings cause the video image to stretch or shrink horizontally. Odd number settings are recommended. Under most circumstances this setting should not be changed because the autodetect is usually quite accurate.

   ▪ Phase: Phase values range from 0 to 31 and will wrap around. Stop at the phase value that produces the best video image for the active target server.

4. Color Settings: These settings control the brightness, contrast, and positioning of the target server display.

   ▪ Brightness Red: Controls the brightness of the red signal; range is 0 - 127.

   ▪ Brightness Green: Controls the brightness of the green signal; range is 0 - 127.

   ▪ Brightness Blue: Controls the brightness of the blue signal; range is 0 - 127.

   ▪ Contrast Red: Controls the red signal contrast; range is 0 - 255.

   ▪ Contrast Green: Controls the green signal contrast; range is 0 - 255.

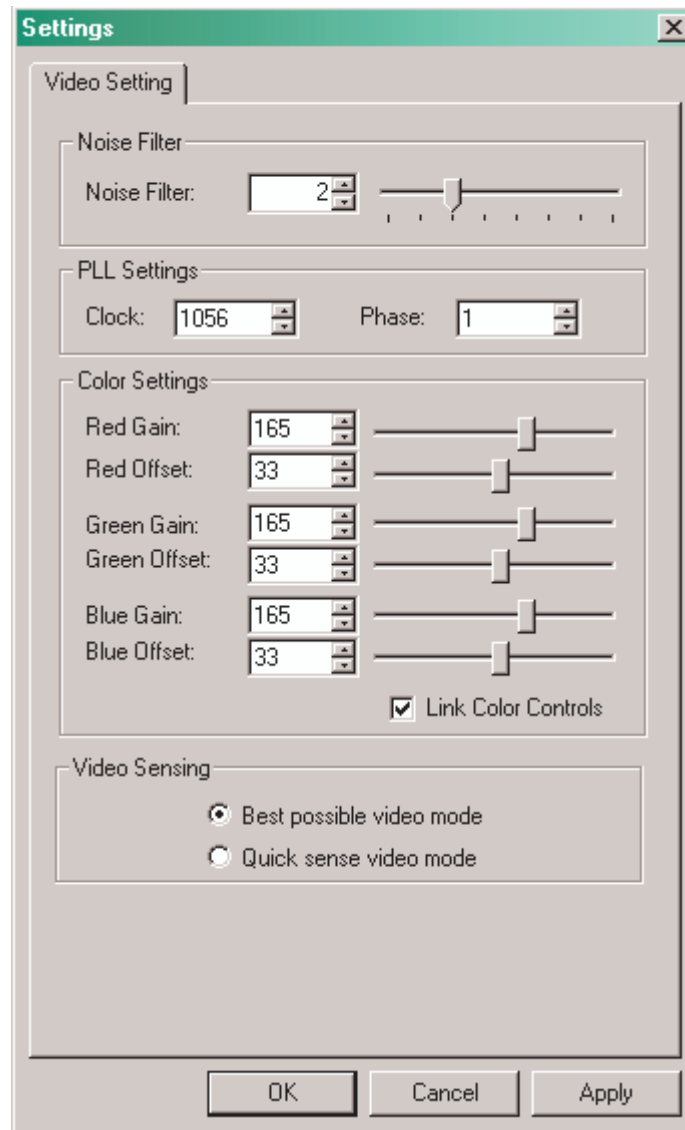   ▪ Contrast Blue: Controls the blue signal contrast; range is 0 - 255.

- Horizontal Offset: Controls the horizontal positioning of the target server display on your monitor; range is 0 - 512.

- Vertical Offset: Controls the vertical positioning of the target server display on your monitor; range is 0 - 128.

5. To preview the change prior to making the selection, check the Preview checkbox.

6. Check the Automatic Color Calibration checkbox to enable this feature.

7. Select the video sensing mode:

- Best possible video mode: IP-Reach or Dominion will perform the full Auto Sense process when switching targets or target resolutions. Selecting this option calibrates the video for the best image quality.

- Quick sense video mode: Selecting this option will cause IP-Reach or Dominion to use a quick video Auto Sense in order to show the target's video sooner. This option is especially useful for entering a target server's BIOS configuration right after a reboot.

8. Click OK to change the Video Settings.

Note: Some Sun background screens, such as screens with very dark borders, may not center precisely on certain Sun servers. Use a different background or place a lighter colored icon in the upper left corner of the page.

**Video Settings (Generation 1 Equipment Only)**

1. Select Video > Video Settings or click the Video Settings button in the toolbar. The Settings dialog appears.

These settings can be refreshed using the Color Calibration command, described in the next section, by manually forcing IP-Reach or Dominion to auto-detect the video settings (on the Video menu, click Auto-sense Video Settings), or by changing the settings in this page. After you change a value, click Apply to test the setting.

2.  Noise Filter: IP-Reach or Dominion can filter out electrical interference of video output from graphics cards. This feature optimizes picture quality and reduced used bandwidth.

Note: The default Noise Filter is 4; Raritan recommends that you lower this value to 0 (zero).

- Higher: Noise Filter settings instruct IP-Reach or Dominion to transmit a variant pixel of video only if a large color variation exists in comparison to its neighbors. However, setting the threshold too high can result in the unintentional filtering of desired page changes.

- Lower: Noise Filter settings instruct IP-Reach or Dominion to transmit most pixel changes. Setting this threshold too low can result in higher bandwidth use.

Note: Lower Noise Filter settings (approximately 1 to 4) are recommended. Although higher settings will stop the needless transmission of false color variations, true and intentional small changes to a video image may not be transmitted.

3. Analog-to-Digital Settings: The following parameters are best left to IP-Reach or Dominion to automatically detect (on the RRC Menu Bar, select Video > Auto-sense Video Settings), but a brief description of each is included here.

4. PLL Settings: If the video image looks extremely blurry or unfocused, the PLL Settings for clock and phase can be adjusted until a better image appears on the active target server.

- Clock: Horizontal sync divider to produce pixel clock. Controls how quickly video pixels are displayed across the video page. Changes made to clock settings cause the video image to stretch or shrink horizontally. Odd number settings are recommended.

- Phase: Phase values range from 0 to 31 and will wrap around. Stop at the phase value that results in the best video image for the active target server.

5. Color Settings: Gain control can be thought of as contrast adjustment. Offset control can be thought of as brightness adjustment.

- Red Gain: Controls the amplification of the red signal.

- Red Offset: Controls the bias of the red signal.

- Green Gain: Controls the amplification of the green signal.

- Green Offset: Controls the bias of the green signal.

- Blue Gain: Controls the amplification of the blue signal.

- Blue Offset: Controls the bias of the blue signal.

- Link Color Controls: Makes all gain slide adjusters move in unison when any one color's gain slide is moved and all the offset slide adjusters move in unison when any one color's offset slide is moved.

6. Select the video sensing option you would like to apply.

- Best possible video mode: IP-Reach or Dominion will perform the full Auto Sense process when switching targets or target resolutions. Selecting this radio button will cause IP-Reach or Dominion to calibrate the video for the best image quality.

- Quick sense video mode: Selecting this radio button will cause IP-Reach or Dominion to use a quick video Auto Sense in order to show the target's video sooner. This option is especially useful for entering a target server's BIOS configuration right after a reboot.

7. Click OK to set Video Settings.

Note: Some SUN background screens, such as screens with very dark borders, may not center precisely on certain SUN servers. Use a different background or place a lighter colored icon in the upper left corner of the page.

**Video Settings (KX101 Only)**
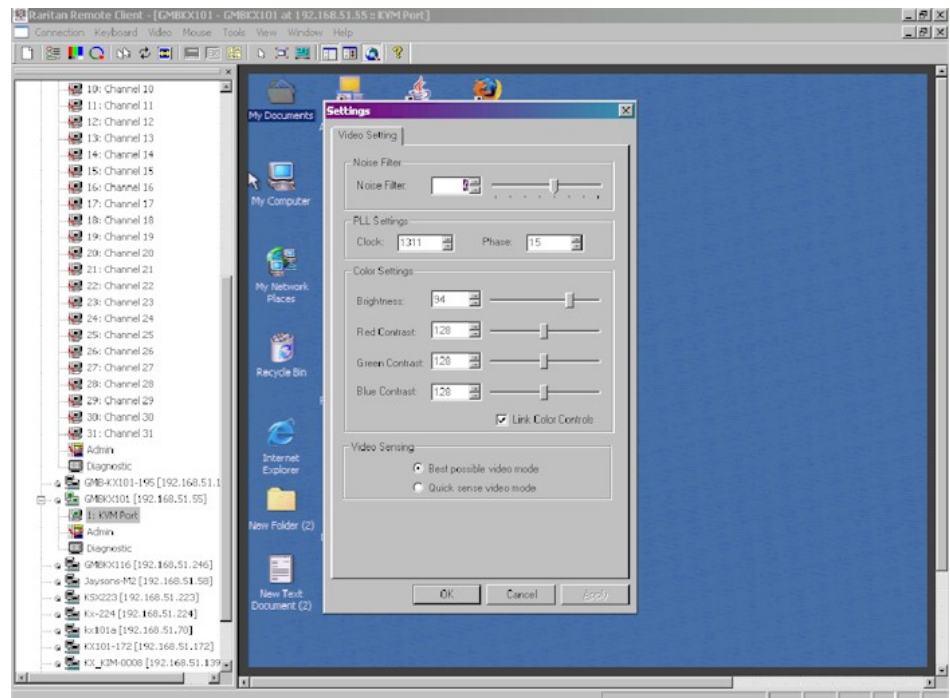
Raritan's Dominion KX101 Color Settings window varies from those of other Dominion units.
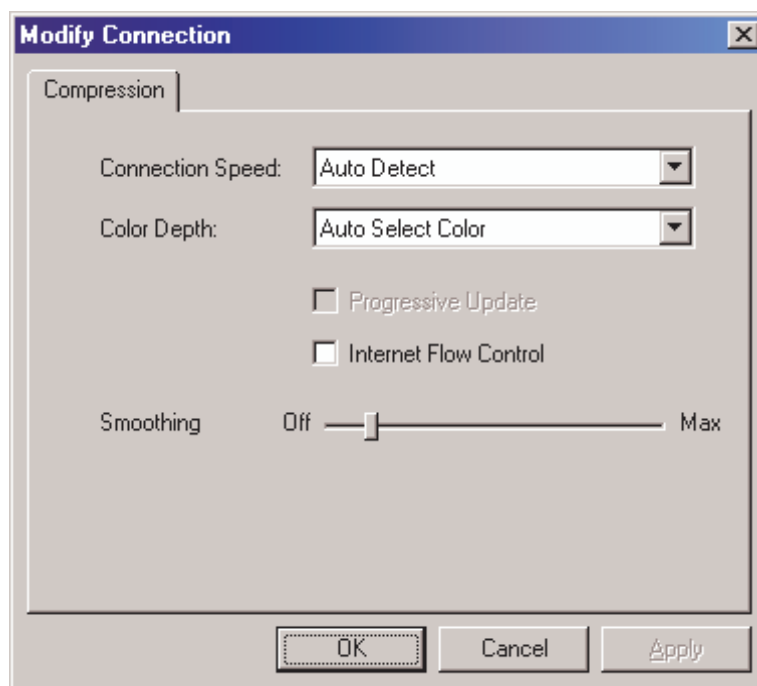
1. In the Color Settings panel, adjust the following options:

   ▪ Brightness: Controls the backlight on your page.

   ▪ Red Contrast: Controls the level of red tone on your page.

   ▪ Green Contrast: Controls the level green tone on your page.

   ▪ Blue Contrast: Controls the level of blue tone on your page.

   ▪ Click on the Link Color Controls check box to make all above slide adjusters move in unison when any one option is moved.

2. Click OK when finished.

**RRC Connection and Video Properties**

*RRC Connections*

➢ *To set connection properties in RRC:*

1. Select Connection > Properties or click the Connection Properties button ⬛ in the toolbar. Update the settings in the Compression tab.

2.  Connection Speed: Use this setting to manually adjust the connection speed to accommodate bandwidth constraints. IP-Reach and Dominion can automatically detect available bandwidth and not limit bandwidth use, but you can also adjust this usage according to your needs. Depending on the Raritan device in use, different options may be available.

    ▪ Auto Detect

    ▪ 1G Ethernet

    ▪ 100mb Ethernet

    ▪ 10mb Ethernet

    ▪ 1.5mb (Max DSL/T1)

    ▪ 1mb (Fast DSL/T1)

    ▪ 512 kb (Medium DSL/T1)

    ▪ 384 kb (Slow DSL/T1)

    ▪ 256 kb (Cable)

    ▪ 128 kb (Dual ISDN)

    ▪ 56 kb (ISP Modem)

    ▪ 33 kb (Fast Modem)

    ▪ 24 kb (Slow Modem)

3.  Color Depth: IP-Reach and Dominion can dynamically adapt the color depth transmitted to remote users in order to maximize usability in all bandwidths. Select from among the options in the drop-down list (depending on the Raritan device in use, different options may be available):

    ▪ 15-bit RGB Color

    ▪ 8-bit RGB Color

    ▪ 4-bit Color

    ▪ 4-bit Gray

    ▪ 3-bit Gray

    ▪ 2-bit Gray

    ▪ Black and White

    ▪ For information about the Progressive Update, Internet Flow Control, and Smoothing (15-bit mode only), please refer to *Connection Profiles* (on page 53).

Important: For most administrative tasks (server monitoring, reconfiguring, etc.), administrators do not require the full 24-bit or 32-bit color spectrum made available by most video graphics cards. Attempting to transmit such high color depths wastes network bandwidth.

4. Click OK to change the Connection Properties or Cancel to close the window without saving changes.

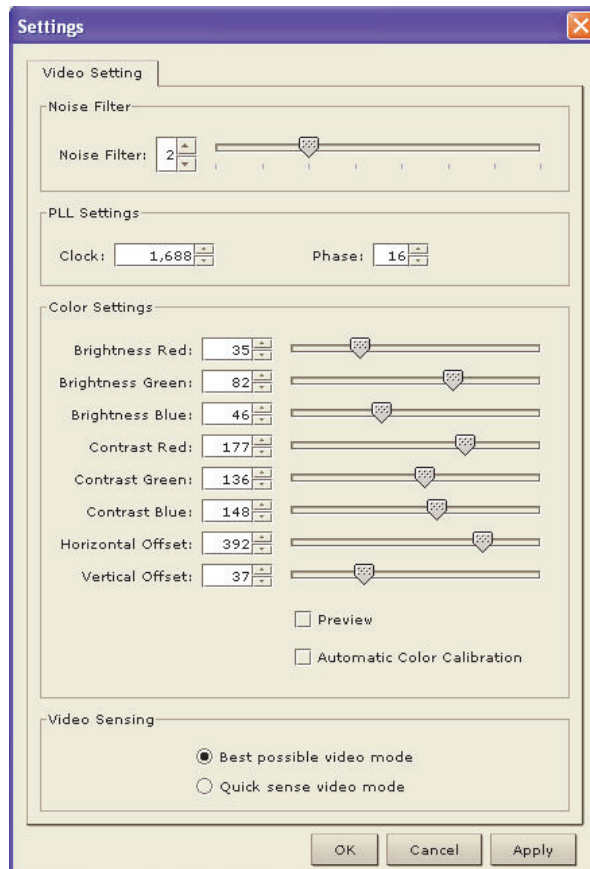### RRC Video Properties

**Refresh Video Settings**

Video settings can be refreshed in several ways:

- Using Video > Refresh Screen.
- Directing IP-Reach or Dominion to automatically detect the video settings (Video > Auto-sense Video Settings).
- Using the *Color Calibration* (on page 124) command to calibrate the video, thereby enhancing the colors that are displayed.
- Changing the settings from the Video Settings page.

**Change RRC Video Settings**

➢ *To change the video settings:*

1. Select Video > Video Settings or click the Video Settings button in the toolbar. The Settings dialog appears. Update the desired settings.

2. Noise Filter: IP Reach and Dominion can filter out the electrical interference of video output from graphics cards. This feature optimizes picture quality and reduces bandwidth. Higher settings transmit variant pixels only if a large color variation exists in comparison to the neighboring pixels. However, setting the threshold too high can result in the unintentional filtering of desired page changes. Lower settings transmit most pixel changes. Setting this threshold too low can result in higher bandwidth use.

Note: Lower Noise Filter settings (approximately 1 to 4) are recommended. Although higher settings will stop the needless transmission of false color variations, true and intentional small changes to a video image may not be transmitted.

3. PLL Settings: If the video image looks extremely blurry or unfocused, the PLL settings for clock and phase can be adjusted until a better image appears on the active target server.

Warning: Please exercise caution when changing the clock and phase settings since doing so may result in lost or distorted video and you may not be able to return to the previous state. Contact Raritan Technical Support before making any changes.

- Clock: Controls how quickly video pixels are displayed across the video page. Changes made to clock settings cause the video image to stretch or shrink horizontally. Odd number settings are recommended. Under most circumstances this setting should not be changed because the autodetect is usually quite accurate.

- Phase: Phase values range from 0 to 31 and will wrap around. Stop at the phase value that produces the best video image for the active target server.

4. Color Settings: These settings control the brightness, contrast, and positioning of the target server display.

- Brightness Red: Controls the brightness of the red signal; range is 0 - 127.

- Brightness Green: Controls the brightness of the green signal; range is 0 - 127.

- Brightness Blue: Controls the brightness of the blue signal; range is 0 - 127.

- Contrast Red: Controls the red signal contrast; range is 0 - 255.

- Contrast Green: Controls the green signal contrast; range is 0 - 255.

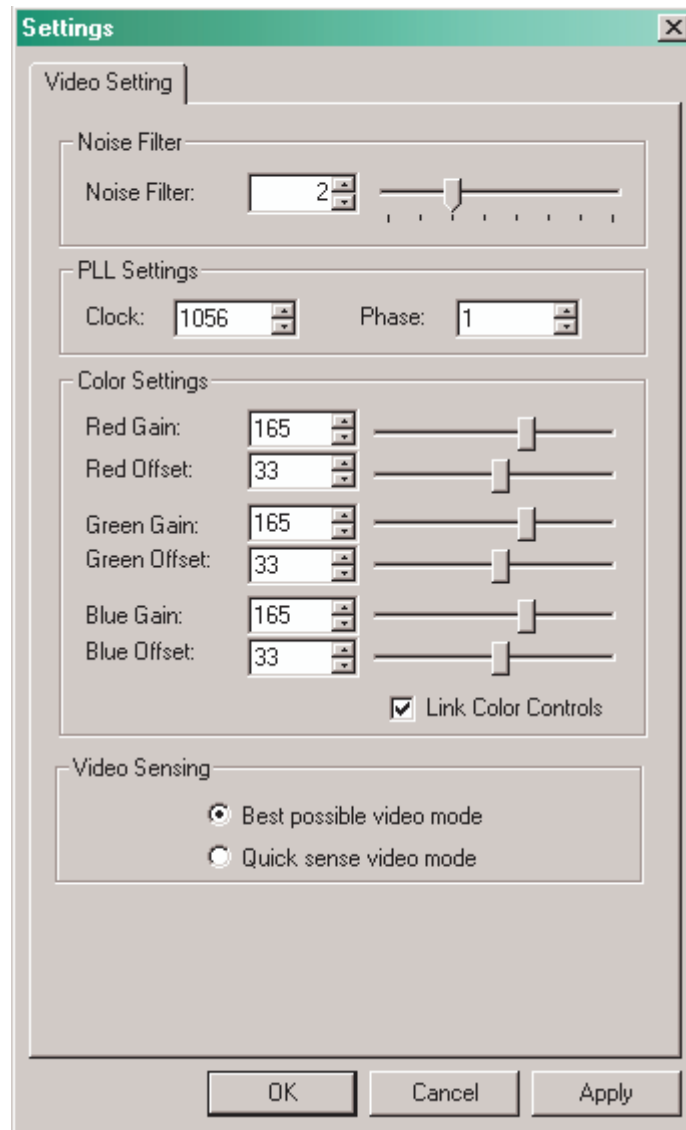- Contrast Blue: Controls the blue signal contrast; range is 0 - 255.

> ▪ Horizontal Offset: Controls the horizontal positioning of the target server display on your monitor; range is 0 - 512.
>
> ▪ Vertical Offset: Controls the vertical positioning of the target server display on your monitor; range is 0 - 128.

5. To preview the change prior to making the selection, check the Preview checkbox.

6. Check the Automatic Color Calibration checkbox to enable this feature.

7. Video Sensing: Select the video sensing mode:

> ▪ Best possible video mode: IP-Reach or Dominion will perform the full Auto Sense process when switching targets or target resolutions. Selecting this option calibrates the video for the best image quality.
>
> ▪ Quick sense video mode: Selecting this option will cause IP-Reach or Dominion to use a quick video Auto Sense in order to show the target's video sooner. This option is especially useful for entering a target server's BIOS configuration right after a reboot.

8. Click OK to change the Video Settings.

---

Note: Some Sun background screens, such as screens with very dark borders, may not center precisely on certain Sun servers. Use a different background or place a lighter colored icon in the upper left corner of the page.

---

**Video Settings (Generation 1 Equipment Only)**

1. Select Video > Video Settings or click the Video Settings button  in the toolbar. The Settings dialog appears.

These settings can be refreshed using the Color Calibration command, described in the next section, by manually forcing IP-Reach or Dominion to auto-detect the video settings (on the Video menu, click Auto-sense Video Settings), or by changing the settings in this page. After you change a value, click Apply to test the setting.

2. Noise Filter: IP-Reach or Dominion can filter out electrical interference of video output from graphics cards. This feature optimizes picture quality and reduced used bandwidth.

   Note: The default Noise Filter is 4; Raritan recommends that you lower this value to 0 (zero).

- Higher: Noise Filter settings instruct IP-Reach or Dominion to transmit a variant pixel of video only if a large color variation exists in comparison to its neighbors. However, setting the threshold too high can result in the unintentional filtering of desired page changes.

- Lower: Noise Filter settings instruct IP-Reach or Dominion to transmit most pixel changes. Setting this threshold too low can result in higher bandwidth use.

Note: Lower Noise Filter settings (approximately 1 to 4) are recommended. Although higher settings will stop the needless transmission of false color variations, true and intentional small changes to a video image may not be transmitted.

3. Analog-to-Digital Settings: The following parameters are best left to IP-Reach or Dominion to automatically detect (on the RRC Menu Bar, select Video > Auto-sense Video Settings), but a brief description of each is included here.

4. PLL Settings: If the video image looks extremely blurry or unfocused, the PLL Settings for clock and phase can be adjusted until a better image appears on the active target server.

- Clock: Horizontal sync divider to produce pixel clock. Controls how quickly video pixels are displayed across the video page. Changes made to clock settings cause the video image to stretch or shrink horizontally. Odd number settings are recommended.

- Phase: Phase values range from 0 to 31 and will wrap around. Stop at the phase value that results in the best video image for the active target server.

5. Color Settings: Gain control can be thought of as contrast adjustment. Offset control can be thought of as brightness adjustment.

- Red Gain: Controls the amplification of the red signal.

- Red Offset: Controls the bias of the red signal.

- Green Gain: Controls the amplification of the green signal.

- Green Offset: Controls the bias of the green signal.

- Blue Gain: Controls the amplification of the blue signal.

- Blue Offset: Controls the bias of the blue signal.

- Link Color Controls: Makes all gain slide adjusters move in unison when any one color's gain slide is moved and all the offset slide adjusters move in unison when any one color's offset slide is moved.

6. Video Sensing

- Best possible video mode: IP-Reach or Dominion will perform the full Auto Sense process when switching targets or target resolutions. Selecting this radio button will cause IP-Reach or Dominion to calibrate the video for the best image quality.

- Quick sense video mode: Selecting this radio button will cause IP-Reach or Dominion to use a quick video Auto Sense in order to show the target's video sooner. This option is especially useful for entering a target server's BIOS configuration right after a reboot.

7. Click OK to set Video Settings or Cancel to close the window without saving changes.

Note: Some SUN background screens, such as screens with very dark borders, may not center precisely on certain SUN servers. Use a different background or place a lighter colored icon in the upper left corner of the page.

**Video Settings in Window (KX101)**
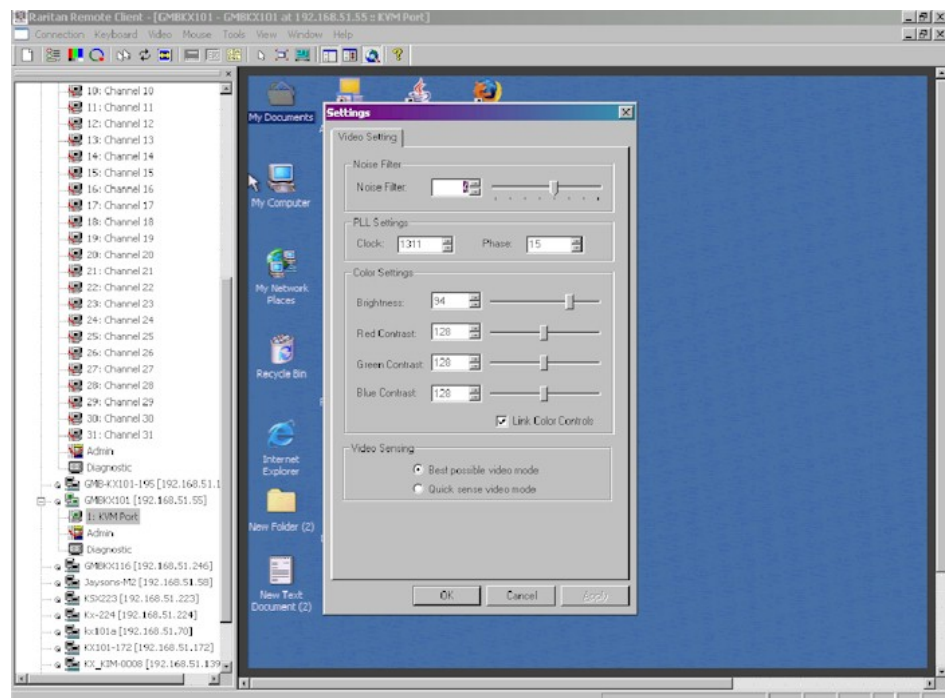
Raritan's Dominion KX101 Color Settings window varies from those of other Dominion units.

1. In the Color Settings panel, adjust the following options:

   - Brightness: Controls the backlight on your page.

   - Red Contrast: Controls the level of red tone on your page.

   - Green Contrast: Controls the level green tone on your page.

   - Blue Contrast: Controls the level of blue tone on your page.

   - Click on the Link Color Controls check box to make all above slide adjusters move in unison when any one option is moved.

2. Click OK when finished.

### Color Calibration

Use the Color Calibration command if the color levels (hue, brightness, and saturation) of the transmitted video images do not seem accurate. IP-Reach or Dominion color settings remain the same when switching from one target KVM server to another, so you can perform color calibration once to affect all connected target servers.

1. Open a remote KVM connection to any server running a graphical user interface.

2. Ensure that a solid white color covers approximately 15% or more of the target server's desktop.

TIP: Open Microsoft Notepad and maximize the window.
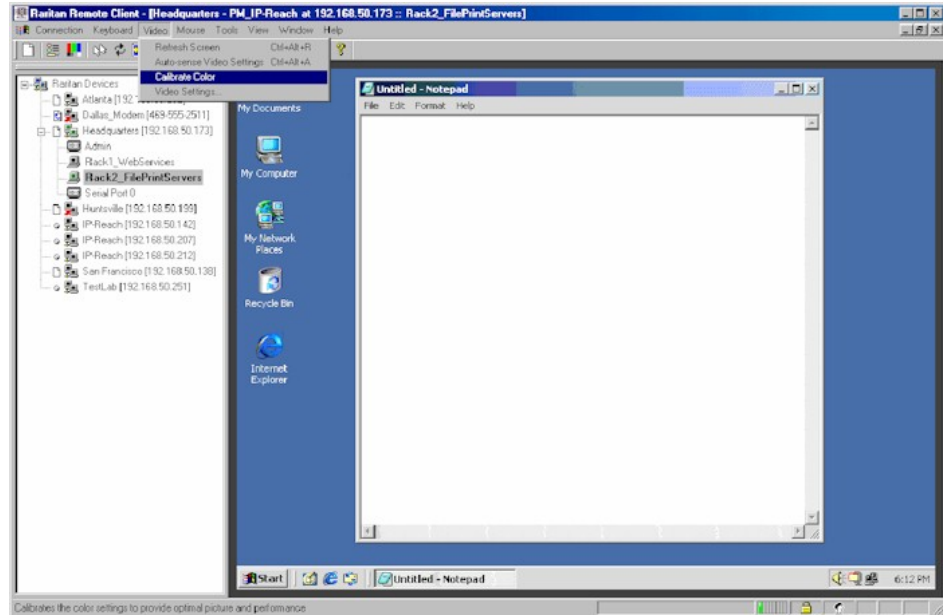


3. On the Video menu, click Calibrate Color or click the Color Calibration button 🌀 on the toolbar. The target device page will update its calibration.

Tip: You can also specify automatic color calibration using Tools > Options. Refer to *General Options* (see "General Options in MPC" on page 126) for more information.

# Administrative Functions

## Overview

Although your IP-Reach or Dominion device provides a remote interface to administrative functions through IP-Reach or Dominion Manager, MPC and RRC provide an interface to frequently-used administrative functions directly from its own interface. When logged into an IP-Reach or Dominion unit as an administrator, you can perform the administrative tasks discussed here.

Note: Most of the commands discussed here are available in both the Tools menu and in the shortcut menu that appears when you right-click on the device in the Navigator panel.

### Note to MPC Users

MPC users must belong to the administrator group in order to receive administrative permissions. MPC uses one permission: either administrator or normal user. It is only when the user belongs to the administrator group that they have access to backup, restore, and restart functions. This is true regardless of any device user group settings that may be applied to the user.

### General Options

### General Options in MPC

The Options available in the Tools menu provide options that allow you to customize scroll borders, mouse mode settings, single cursor mode, auto color calibration, hot key configuration, keyboard type, broadcast port, and logging.

➢ **To configure the general options in MPC:**

1. In MPC, select Tools > Options. The Options dialog appears and displays the General tab by default.
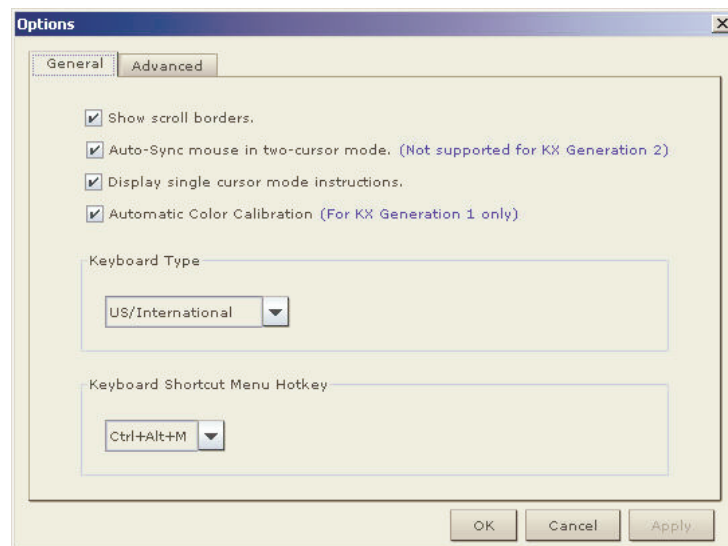


2. Select the "Show scroll borders" checkbox to view the thin scroll borders designating the autoscroll area.

3. Select the "Auto-Sync mouse in two-cursor mode" checkbox to enable automatic mouse synchronization.

4. If you select the "Display single cursor" mode instructions checkbox, the Single Cursor Mode dialog will open each time Single Cursor is enabled in the application (see *Single Mouse Mode/Dual Mouse Mode* (on page 102) for more information).
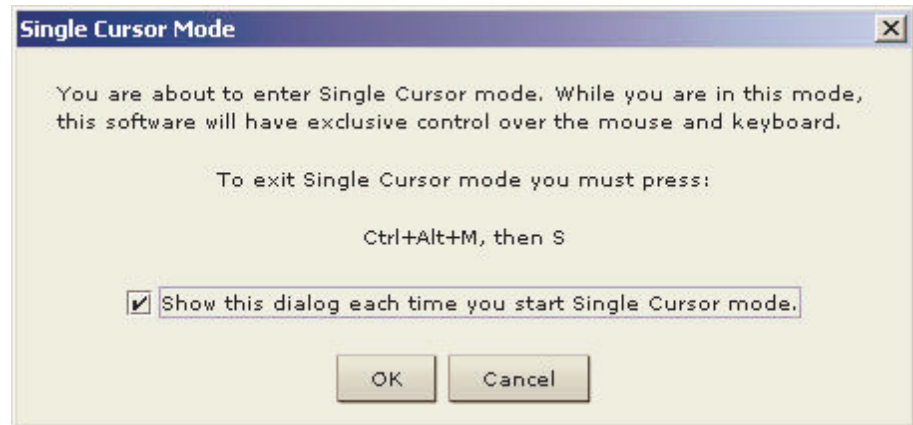


5. Select the Automatic Color Calibration checkbox to enable automatic color calibration. This option is available for KX generation 1 (G1) only.

6. Select the Keyboard Type from the drop-down list (depending on the Raritan device in use, different options may be available):

   ▪ US/International

   ▪ French (France)

   ▪ German (Germany)

   ▪ Japanese

   ▪ United Kingdom

   ▪ Korean (Korea)

   ▪ Belgian

   ▪ Norwegian

7. From the Keyboard Shortcut Menu HotKey drop-down, select the key combination you would like to use to invoke the *Keyboard Shortcut Menu* (see "Shortcut Menu" on page 91).

8. For advanced options, open the Advanced tab.
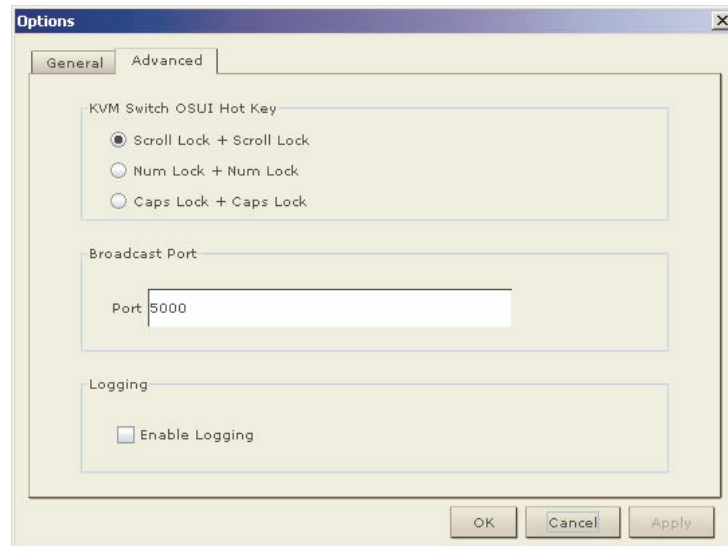


9. From the KVM Switch OSUI Hot Key section, select the hot key to use when switching between target server displays.

10. For the Broadcast Port, type the broadcast port number in the Port field if you want to use a port other then 5000.

11. Select the Enable Logging checkbox only if directed to by Technical Support. This option creates a log file in your home directory.

12. Click OK when finished. Click Apply any time while making selections to apply it.

**General Options in RRC**

The Options available in the Tools menu provide options that allow you to customize scroll borders, mouse mode settings, single cursor mode, auto color calibration, hot key configuration, keyboard type, broadcast port, and logging.

➢ **To configure the general options in RRC:**

1. In RRC, select Tools > Options to open the Options dialog.
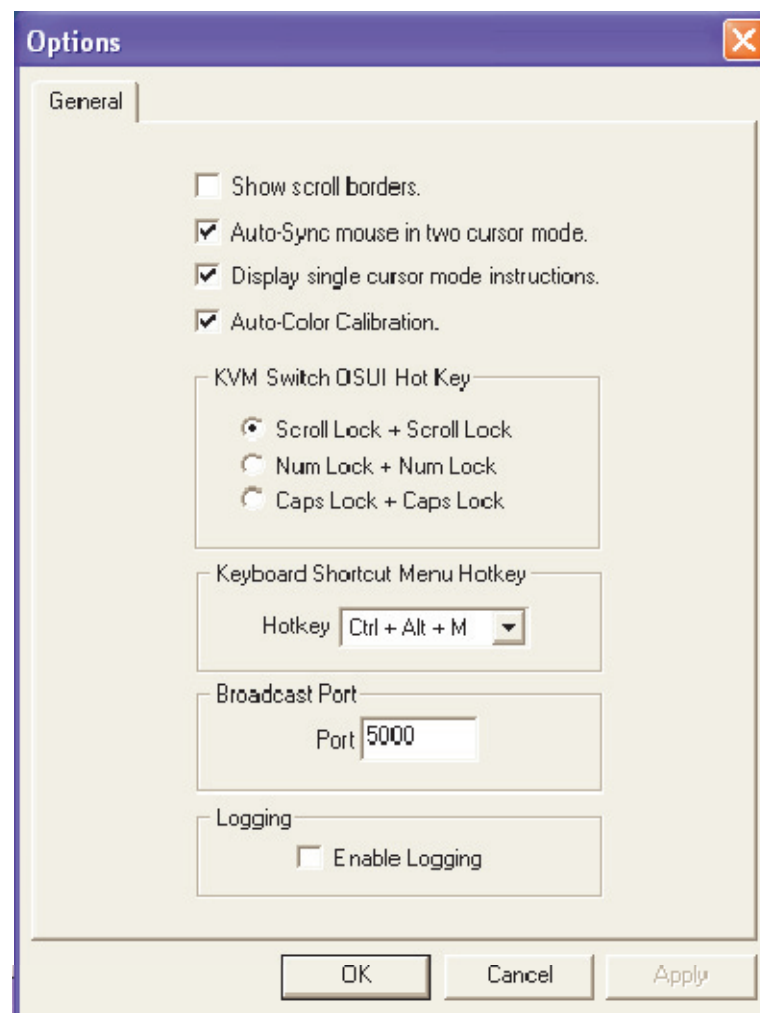


2. Select the "Show scroll borders" checkbox to view the thin scroll borders that show the Auto-Scroll area.

3. Select the "Auto-Sync mouse in two cursor mode" checkbox to enable Automatic Mouse Synchronization.

4. If you select the "Display single cursor mode instructions" checkbox the Single Cursor Mode dialog will open each time Single Cursor is enabled in the application (see *Single Mouse Mode/Dual Mouse Mode* (on page 102) for more information).
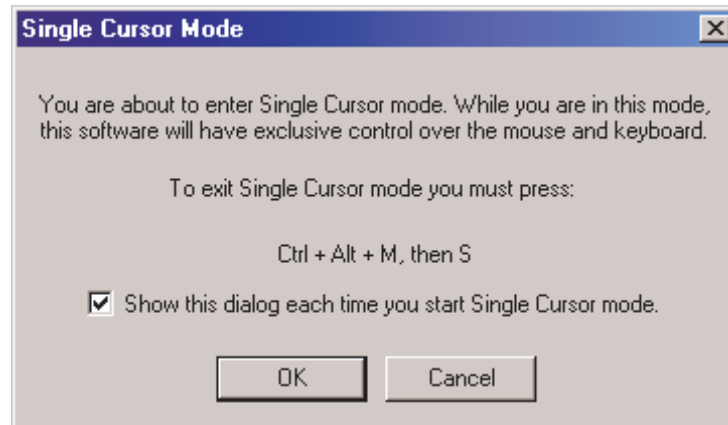


5. Select Auto-Color Calibration to enable it.

6. In the KVM Switch OSUI Hot Key panel, select the radio button next to the hot key combination you would like to use.

7. In the Keyboard Type panel, click on the drop-down arrow and click on your keyboard choice.

8. In the Broadcast Port panel, type the broadcast port number in the Port field.

9. Click OK when finished. Click Apply any time during your selection to apply an option you have chosen.

## Upgrading Device Firmware

➢ *To update a device's firmware:*

1. Connect to the device by highlighting the device's icon in the Navigator.

2. Click Tools > Update > Update Device to perform firmware upgrades.

3. You will be prompted to locate a Raritan firmware distribution file (*.RFP format), which can be found on the Raritan Website Firmware Upgrades page: http://www.raritan.com/support/firmwareupgrades.

Please ensure that you read all instructions included in firmware ZIP files carefully before upgrading a device.

Note: Copy the firmware update file on the Raritan website to a local machine before uploading. Do not load the file from a network drive.

## Changing a Password

➢ *To update your password*

1. Connect to an IP-Reach or Dominion target by selecting it in the Navigator.

2. Highlight the target's icon in the Navigator and then click Tools > Update > User Password. The Change Password dialog appears.



3. Type your current password in the Old Password field.

4. Type the new password in the New Password field.

5. Retype the password in the Confirm New Password field.

6. When finished, click OK.

## Restarting a Device

➢ *To restart a device:*

1. Select the device in the Navigator.

2. On the Tools menu, click Restart Device.

## Backing Up a Device Configuration

➢ *To back up a device:*

1. Download the IP-Reach or Dominion device configuration to your local computer by selecting the device in the Navigator.

2. On the Tools menu, click Save Device Configuration.

## Restoring a Device Configuration
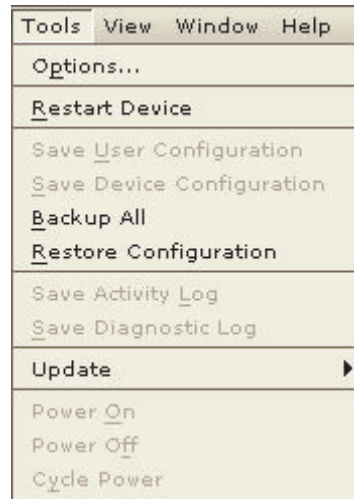
➢ *To restore a device configuration:*

1. Upload the archived IP-Reach or Dominion device configuration by selecting the device in the Navigator.

2. On the Tools menu, click Restore Device Configuration.

   Please note that device configuration is specific to a particular device and should not be restored to another device.

## Backing Up a User Configuration

➢ *To back up a unit's user configuration:*

1. Select the device in the Navigator.

2. On the Tools menu, click Save User Configuration.

## Restoring a User Configuration

➢ *To restore a user configuration:*

1. Upload a device's archived user configuration by selecting the device in the Navigator.

2. On the Tools menu, click Restore User Configuration

Note: Use these commands to easily transfer user and group information from one IP-Reach or Dominion unit to another.

## Backup and Restore (Dominion KX II only)

In addition to using backup and restore for business continuity purposes, you can use this feature as a time-saving mechanism. For instance, you can quickly provide access from another Dominion device to your team by backing up the user configuration settings from the device in use and restoring those configurations to the new Dominion device.

Note: Backups are always complete system backups. Restores can be complete or partial depending on your selection.

➢ **To backup the entire system (both user and device configuration):**

1. Select Tools > Backup All. The Backup All dialog appears.
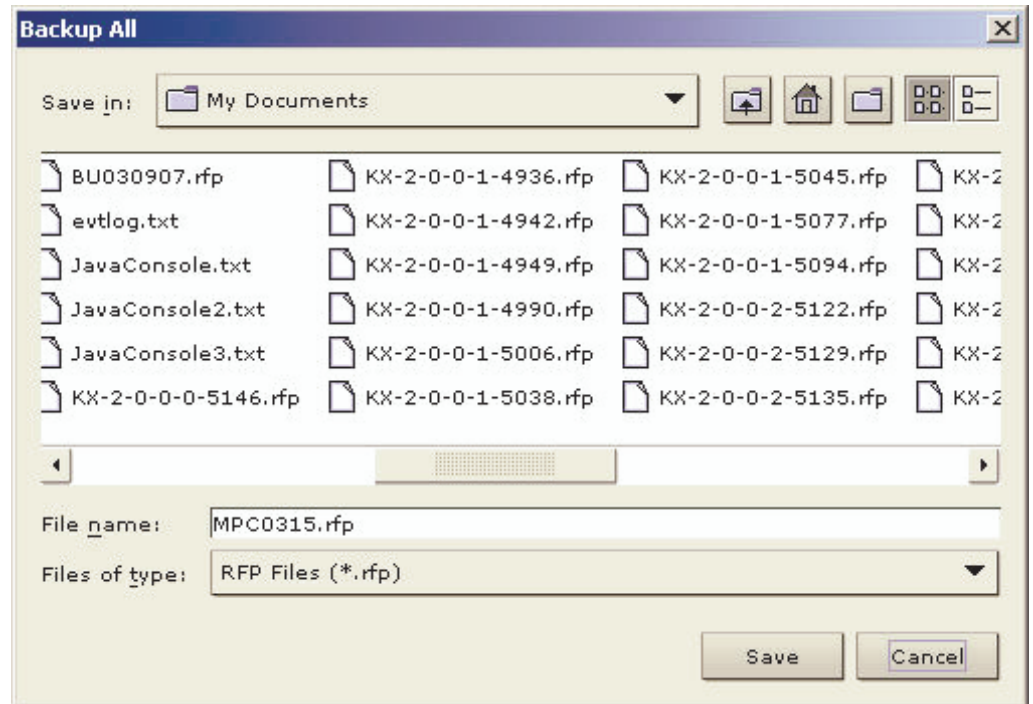


2. Navigate to the desired directory and give the backup file a name. (Backup files have an extension of .rfp).

3. Click Save. A message is displayed confirming the successful backup.

4. Click OK.

➢ **To restore:**

1. Select Tools > Restore Configuration. The Restore Device Configuration dialog appears.
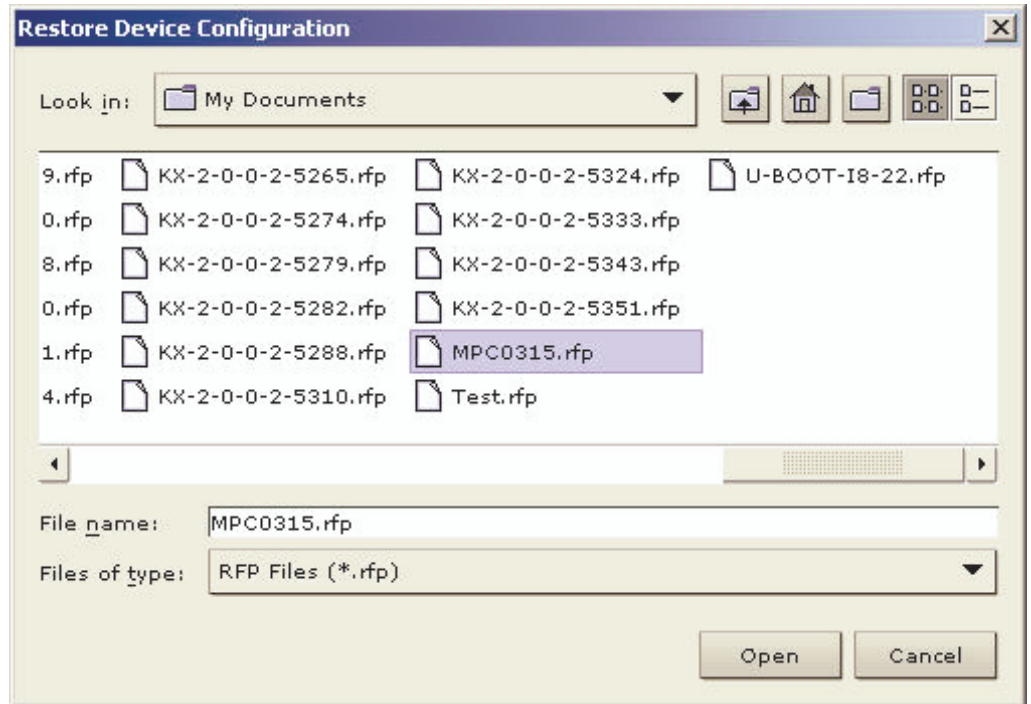


2. Navigate to the appropriate directory and select the backup file.

3. Click Open. The Restore Packages dialog appears.
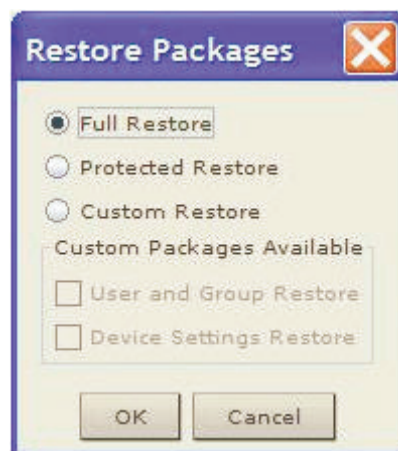


4. Select the type of restore you want to run:

- Full Restore: A complete restore of the entire system; generally used for traditional backup and restore purposes.

- Protected Restore: Everything is restored except device-specific information such as serial number, MAC Address, IP Address, name, port names, etc. With this option, you can setup one Dominion device and copy the configuration to multiple Dominion devices.

- Custom Restore: With this option, the following options are available. Check the appropriate checkboxes:

  - User and Group Restore: This option includes only user and group information. Use this option to quickly setup users on a different Dominion device.

  - Device Settings Restore: This option includes only device settings. Use this option to quickly copy the device information.

1. Click OK.

## Log Files

### Activity Log

➢ *To download a detailed activity log for review or troubleshooting:*

1. Select the device in the Navigator.

2. On the Tools menu, click Save Activity Log.

### Diagnostic Log (excluding Dominion KX II)

To download a detailed diagnostic log for reporting or analysis:

1. Select the device in the Navigator.

2. On the Tools menu, click Save Diagnostic Log.

## Broadcast Port

By default, all Raritan devices send data through Port 5000. This network traffic includes the auto-discovery broadcast. In the case of conflicts or to deal with firewall issues, you may want to use a different broadcast port.

➢ *To change the autodiscovery port from the default broadcast port of 5000:*

1. Select the device in the Navigator.

2. On the Tools menu, click Options. The Options dialog appears.

3. In the Broadcast Port field, type the new port number in the Port field and then click OK.

Note: If you want the application to autodiscover Raritan devices on the new broadcast port you entered in the Options window, you must configure all Raritan devices to use the new port number.
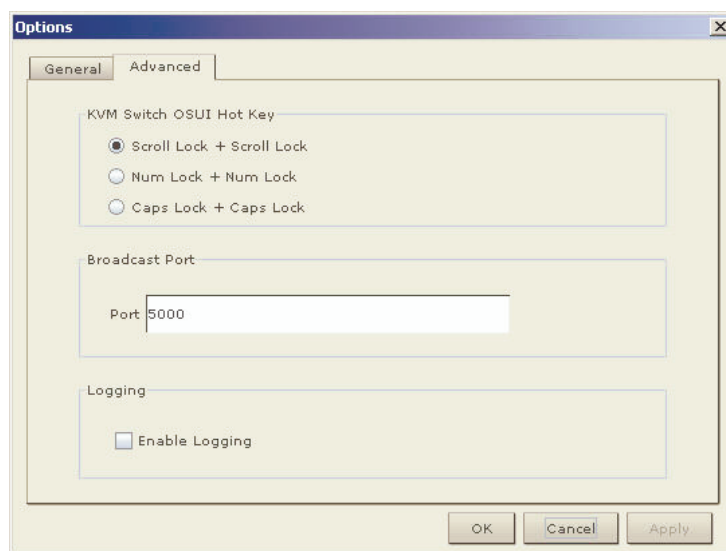
**MPC Broadcast Port**

By default, all Raritan devices send data through Port 5000. This network traffic includes the auto-discovery broadcast. In the case of conflicts or to deal with firewall issues, you may want to use a different broadcast port.

➢ *To change the autodiscovery port from the default broadcast port of 5000:*

1. Select the device in the Navigator.

2. On the Tools menu, click Options. The Options dialog appears.

3. On the Advanced tab, type the new port number in the Port field and then click OK.

Note: If you want the application to autodiscover Raritan devices on the new broadcast port you entered in the Options window, you must configure all Raritan devices to use the new port number.

### RRC Broadcast Port

By default, all Raritan devices send data through Port 5000. This network traffic includes the auto-discovery broadcast. In the case of conflicts or to deal with firewall issues, you may want to use a different broadcast port.

➢ *To change the autodiscovery port from the default broadcast port of 5000:*

1. Select the device in the Navigator.

2. On the Tools menu, click Options. The Options dialog appears.

3. In the Broadcast Port field, type the new port number in the Port field and then click OK.

Note: If you want the application to autodiscover Raritan devices on the new broadcast port you entered in the Options window, you must configure all Raritan devices to use the new port number.

## Remote Power Management

AC power to associated targets can be managed when used with a properly configured Raritan Remote Power Control Strip (RPC strip). Three options are available when performing remote target power management:

- Power On
- Power Off
- Cycle Power

➢ *To change the power status of a target:*

1. Select the device in the Navigator.

2. On the Tools menu, click Power On, Power Off, or Cycle Power.

## Import/Export Keyboard Macro Definitions

### Import/Export MPC Keyboard Macros

The functions contained in this section describe how to exchange keyboard macro definitions between users using import and export functions. The primary purpose of this function is to exchange data between copies of MPC.

➢ *To export MPC macros:*

1. Click Tools > Export Macros to open the Select Keyboard Macros to Export dialog.

2. Select the macros to be exported by checking their corresponding checkbox or using the Select All or Deselect All options.

3. Click OK. The selected macro file(s) will be moved to your desktop (by default).

   A dialog from which you can locate and select the macro file will then appear. By default, the macro will exist on your desktop.

4. Locate the macro file, click on it to select it and then click Save. If the macro already exists, you will receive an alert message. Select Yes to overwrite the existing macro or No to close the alert without overwriting the macro.
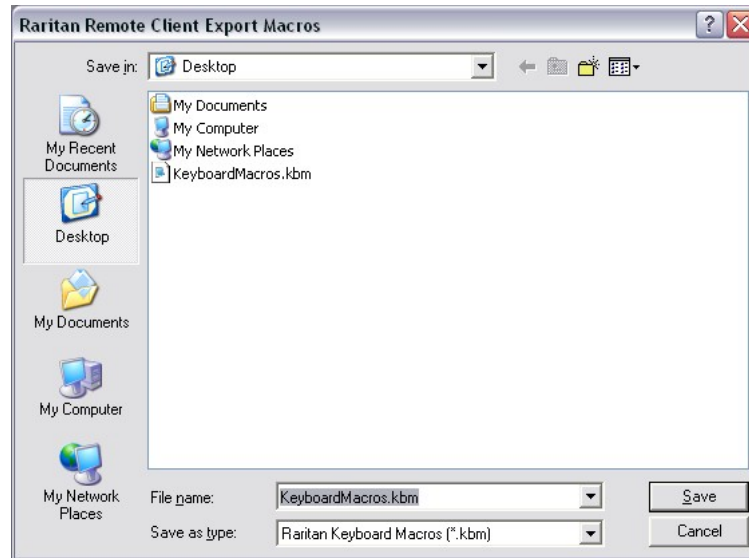


> ➢ *To import MPC macros:*

1. Click Tools > Import Macros to open the Import Macros dialog. By default, the macro will exist on the desktop.

2. Click on the macro file and click Open to import the macro.

   a. If too many macros are found in the file, an error message will be displayed and the import will terminate once OK is selected.

   b. If the import fails, an error dialog will open and will display a message regarding why the import failed. Select OK to continue the import without importing the macros that cannot be imported.

3. Select the macros to be imported by checking their corresponding checkbox or using the Select All or Deselect All options.

4. Click OK and the import will begin.

   a. If a duplicate macro is found, the Import Macros dialog will appear. Do one of the following:

- Click Yes to replace the existing macro with the imported version.

- Click Yes to All to replace the currently selected and any other duplicate macros that are found.

- Click No to keep the original macro and proceed to the next macro

- Click No to All keep the original macro and proceed to the next macro. Any other duplicates that are found will be skipped as well.

- Click Cancel to stop the import.

- Alternatively, click Rename to rename the macro and import it. If Rename is selected, the Rename Macro dialog will open. Enter a new name for the macro in the field and click OK. The dialog will close and the process will proceed. If the name that is entered is a duplicate of a macro, an alert will appear and you will be required to enter another name for the macro.

b. If during the import process the number of allowed, imported macros is exceeded, a dialog will open. Click OK to attempt to continue importing macros or click Cancel to stop the import process.

The macros will then be imported.

If a macro is imported that contains a hot key that already exists, the hot key for the imported macro will be discarded.

**Import/Export RRC Keyboard Macros**

The functions contained in this section describe how to exchange keyboard macro definitions between users using import and export functions. The primary purpose of this function is to exchange data between copies of RRC.

➢ *To export RRC macros:*

1.  Click Tools > Export Macros to open the Export Macros dialog.
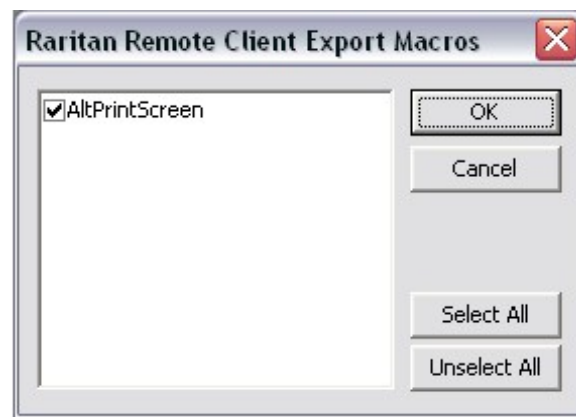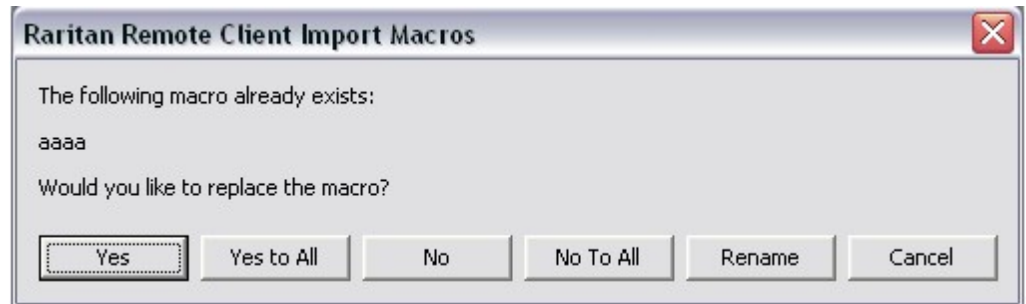


2.  Select the macros to be exported by checking their corresponding checkbox or using the Select All or Unselect All options.

3.  Click OK. The selected macro file(s) will be moved to your desktop (by default).

    A select dialog from which you can locate and select the macro file will then appear. By default, the macro will exist on your desktop.

4.  Locate the macro file, click on it to select it and then click Save. If the macro already exists, you will receive an alert message. Select Yes to overwrite the existing macro or No to close the alert without overwriting the macro.



➢  *To import RRC macros:*

1.  Click Tools > Import Macros to open the Import Macros dialog. By default, the macro will exist on the desktop.



2.  Click on the macro file and click Open to import the macro.

a. If too many macros are found in the file, an error message will be displayed and the import will terminate once OK is selected.



b. If the import fails, an error dialog will open and will display a message regarding why the import failed. Select OK to continue the import without importing the macros that cannot be imported.



3. Select the macros to be imported by checking their corresponding checkbox or using the Select All or Unselect All options.

4. Click OK and the import will begin.



a. If a duplicate macro is found, a dialog will appear. Do one of the following:

- Click Yes to replace the existing macro with the imported version.

- Click Yes to All to replace the currently selected and any other duplicate macros that are found.

- Click No to keep the original macro and proceed to the next macro

- Click No to All keep the original macro and proceed to the next macro. Any other duplicates that are found will be skipped as well.

- Click Cancel to stop the import.

**Raritan Remote Client Import Macros**

The following macro already exists:

aaaa

Would you like to replace the macro?

| Yes | Yes to All | No | No To All | Rename | Cancel |

- Alternatively, click Rename to rename the macro and import it. If Rename is selected, Raritan Remote Client Rename Macro dialog will open. Enter a new name for the macro in the field and click OK. The dialog will close and the process will proceed. If the name that is entered is a duplicate of a macro, an alert will appear and you will be required to enter another name for the macro.

**Raritan Remote Client Rename Macro**
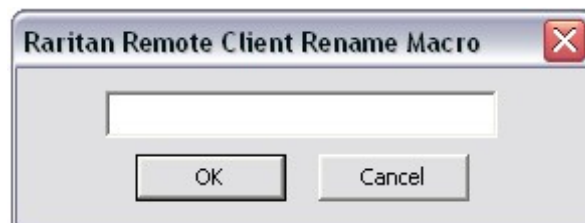
| OK | Cancel |

b. If during the import process the number of allowed, imported macros is exceeded, a message will appear. Click OK to attempt to continue importing macros or click Cancel to stop the import process.

The macros will then be imported.

If a macro is imported that contains a hot key that already exists, the hot key for the imported macro will be discarded.

## Opening Administrator and Diagnostic Interfaces

### Administrator Interface

For further control of a selected device, in the Navigator, scroll down the list of all the targets associated with the specific device (you may have to expand your view of the device by clicking on the + sign before its name). Next, double-click on the Admin icon at the bottom of the target list. The Administrator login page for the selected device appears.

Please refer to the specific Raritan device user guide for additional information and managing the device. The user guide is contained on the CD included with the device shipment or you can download it from the Product Documentation page on Raritan's website: http://www.raritan.com/support/productdocumentation.

### Diagnostic Interface (excluding Dominion KX II)

Access the device's diagnostic console by double clicking on the Diagnostic icon at the bottom of the target list in the Navigator. Scroll down the list of all the targets associated with the device (you may have to expand your view of the device) and double-click on the Diagnostic icon at the bottom of the target list.
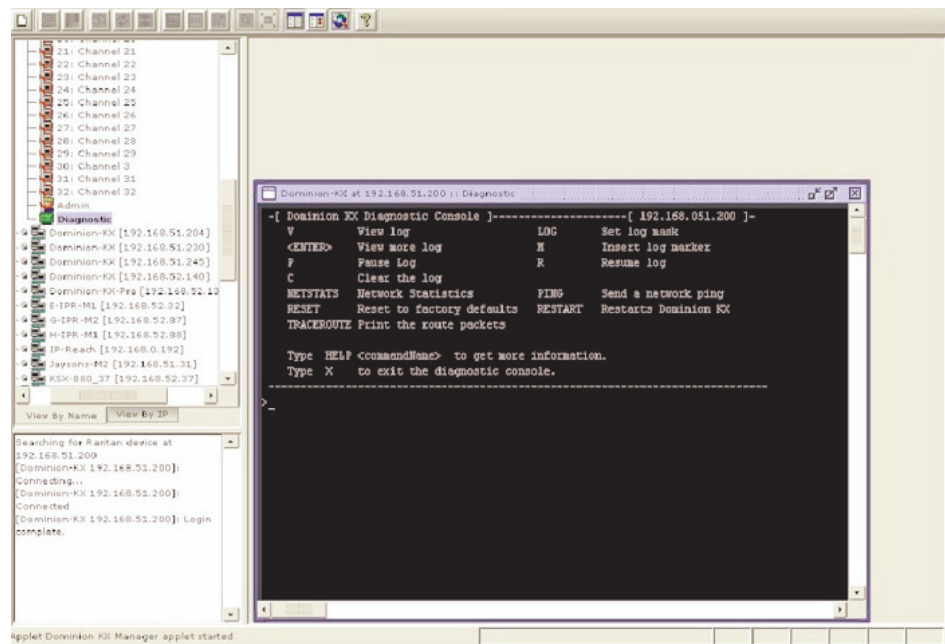


## Special Characters in MPC

The following table identifies the special characters that can be used in MPC:

| Character | Description | Character | Description |
|-----------|-------------|-----------|-------------|
| ! | Exclamation point | : | Colon |
| " | Double quote | ; | Semi-colon |
| # | Pound sign | = | Equal sign |
| $ | Dollar sign | > | Greater than sign |

| Character | Description | Character | Description |
|-----------|-------------|-----------|-------------|
| % | Percent sign | ? | Question mark |
| & | Ampersand | @ | At sign |
| ' | Single quote | [ | Left bracket |
| ( | Left parenthesis | \ | Backward slash |
| ) | Right parenthesis | ] | Right bracket |
| * | Asterisk | ^ | Caret |
| + | Plus sign | _ | Underscore |
| , | Comma | ` | Grave accent |
| - | Dash | { | Left brace |
| . | Period | \| | Pipe sign |
| / | Forward slash | } | Right brace |
| < | Less than sign | ~ | Tilde |

# Chapter 4    Virtual Media

## In This Chapter

# Overview

Virtual media extends KVM capabilities by enabling KVM target servers to remotely access media from the client PC and network file servers. With this feature, media mounted on the client PC and network file servers is essentially mounted virtually by the target server. The target server can then read from and write to that media as if it were physically connected to the target server itself. Virtual media can include internal and USB-mounted CD and DVD drives, USB mass storage devices, PC hard drives, and ISO images (disk images).

Note: ISO9660 is the standard supported by Raritan. However, other ISO standards can be used.

Virtual media provides the ability to perform additional tasks remotely, such as:

- transferring files
- running diagnostics
- installing or patching applications
- complete installation of the operating system

This expanded KVM control eliminates most trips to the data center, saving time and money, thereby making virtual media very powerful.
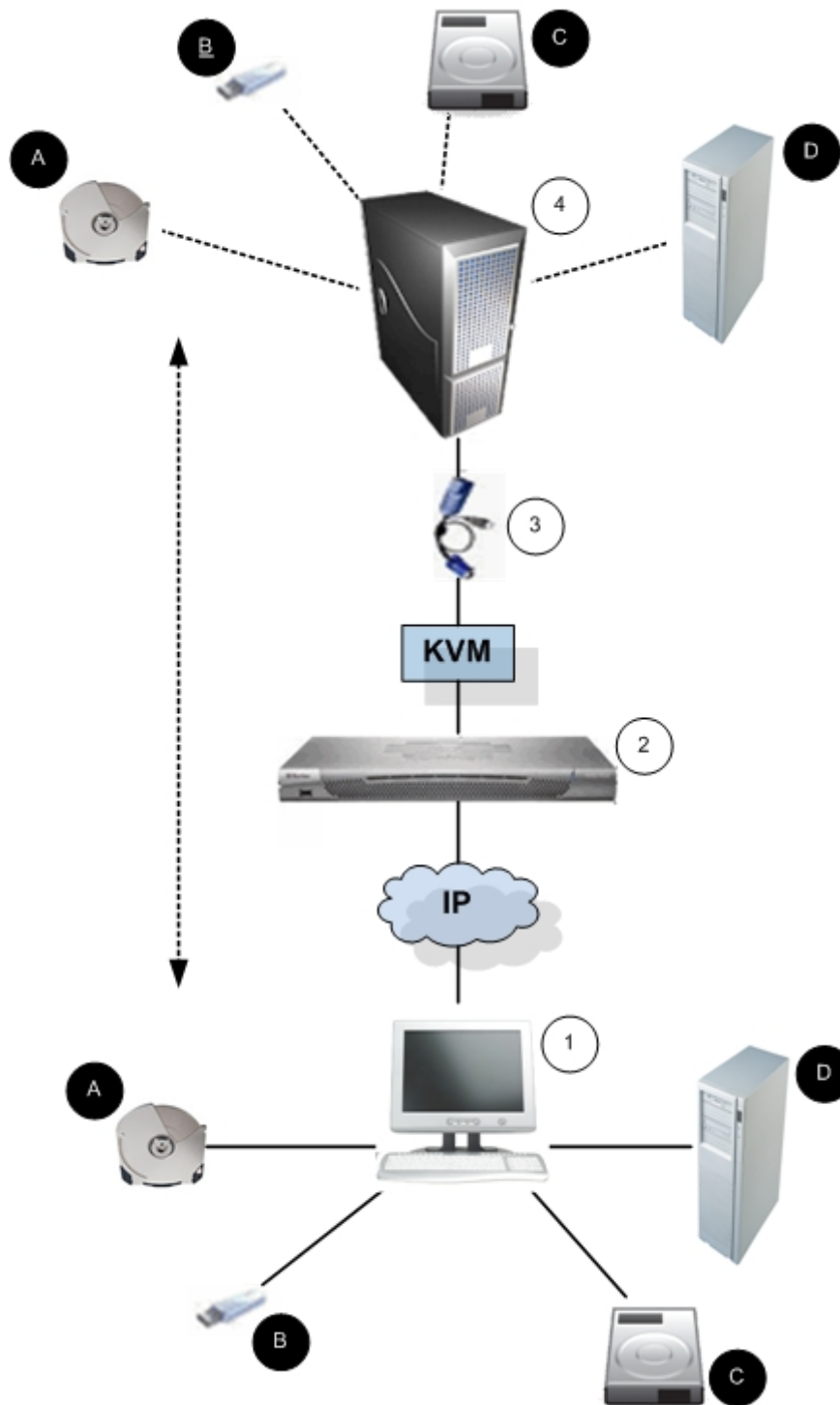
| Item | Description |
|------|-------------|
| 1 | Desktop PC |
| 2 | |
| 3 | CIM |
| 4 | Target Server |
| A | CD/DVD Drive |
| B | USB |
| C | Hard Drive Image Files |
| D | Remote File Server (ISO Images) |

## Prerequisites for Using Virtual Media

The following conditions must be met in order to use virtual media:

- For users requiring access to virtual media, permissions must be set to allow access to the relevant ports, as well as virtual media access (VM Access port permission) for those ports. Port permissions are set at the group-level; please refer to Setting Port Permissions in the device user guide for more information.

- A USB connection must exist between the device and the target server.

- If you want to use PC-Share, VM Share Mode must also be enabled in the Security Settings page. **Optional**

- You must choose the correct USB profile for the KVM target server you are connecting to. For information about choosing a USB profile, see Setting Up USB Profiles in the device user guide.

### Client PC

- Certain virtual media options require administrative privileges on the client PC (for example, drive redirection of complete drives).

  Note: If you are using Microsoft Vista, turn User Account Control off: Control Panel > User Accounts > User Account Control > turn off.

  If you would prefer not to change Vista account permissions, run Internet Explorer as an administrator. To do this, click on the Start Menu, locate IE, right click it and select Run as Administrator.

- USB 2.0 ports are both faster and preferred.

### Target Server

- KVM target servers must support USB connected drives.

- KVM target servers running Windows 2000 must have all of the recent patches installed.

## Using Virtual Media

With the virtual media feature, you can mount up to two drives (of different types). These drives are accessible for the duration of the KVM session.

For example, you can mount a specific CD-ROM, use it, and then disconnect it when you are done. The CD-ROM virtual media "channel" will remain open, however, so that you can virtually mount another CD-ROM. These virtual media "channels" remain open until the KVM session is closed.

➢ *To use virtual media:*

1. Connect/attach the media to the client or network file server that you want to access from the target server. This need not be the first step, but it must be done prior to attempting to access this media.

2. Verify that the appropriate *prerequisites* (see "Prerequisites for Using Virtual Media" on page 154)are met.

3. (File server ISO images only) If you plan to access file server ISO images, identify those file servers and images through the Remote Console *File Server Setup page* (see "File Server Setup (File Server ISO Images Only)" on page 160).

   Note: ISO9660 format is the standard supported by Raritan. However, other CD-ROM extensions may also work.

4. Open a KVM session with the appropriate target server.

5. Connect to the virtual media.

| For: | Select this VM option: |
|------|------------------------|
| Local drives | *Connect Drive* (see "Local Drives" on page 156) |
| Local CD/DVD drives | *Connect CD-ROM/ISO Image* (see "CD-ROM/DVD-ROM/ISO Images" on page 158) |
| ISO Images | Connect CD-ROM/ISO Image |
| File Server ISO Images | Connect CD-ROM/ISO Image |

6. Upon completion of your tasks, *disconnect the virtual media* (see "Disconnecting Virtual Media" on page 159).

## Connecting to Virtual Media

### Local Drives

This option mounts an entire drive; the entire disk drive is mounted virtually onto the target server. Use this option for hard drives and external drives only; it does not include network drives, CD-ROM, or DVD-ROM drives. This is the only option for which read/write is available.

Note: KVM target servers running certain version of the Windows operating system may not accept new mass storage connections after an NTFS-formatted partition (for example, the local C drive) has been redirected to them. If this occurs, close the Remote Console and reconnect before redirecting another virtual media device. If other users are connected to the same target server, they must also close their connections to the target server.

➢ **To access a drive on the client computer:**

1. From the Virtual KVM Client, select Virtual Media > Connect Drive. The Map Virtual Media Drive dialog opens:
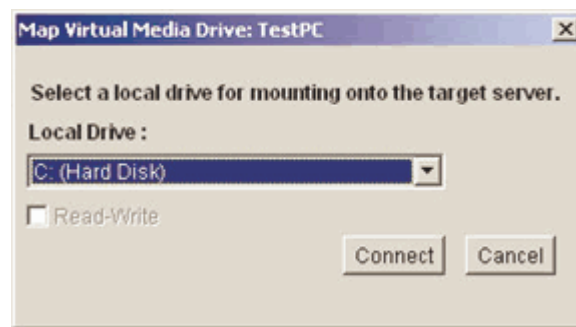


2. Choose the drive from the Local Drive drop-down list.

3. If you want read and write capabilities, select the Read-Write option checkbox. This option is disabled for non-removable drives. Please refer to the *conditions when read-write is not available* (on page 157) for more information. When checked, you will be able to read or write the connected USB disk.

WARNING: Enabling Read-Write access can be dangerous! Simultaneous access to the same drive from more than one entity can result in data corruption. If you do not require write access, leave this option unselected.

4. Click Connect. The media will be mounted on the target server virtually. You can access the media just like any other drive.

Note: If there is no USB connection to the target server, you will see a warning message that says, "The virtual media capability is set up but will not be available until the USB cable is connected or the target is powered on. Please check your USB connectivity or see if the target is powered on." Resolve this issue, then connect to the drive again.

## Conditions when Read-Write is not Available

Virtual media read/write is not available in the following situations:

- For all hard drives.

- When the drive is write-protected.

- When the user does not have read/write permission:

  - Port Permission Access is set to None or View

  - Port Permission VM Access is set to Read-Only or Deny

## CD-ROM/DVD-ROM/ISO Images

This option mounts CD-ROM, DVD-ROM, and ISO images.

Note: ISO9660 format is the standard supported by Raritan. However, other CD-ROM extensions may also work.

➢ **To access a CD-ROM, DVD-ROM, or ISO image:**

1. From the Virtual KVM Client, choose Virtual Media > Connect CD-ROM/ISO Image. The Map Virtual Media CD/ISO Image dialog opens:
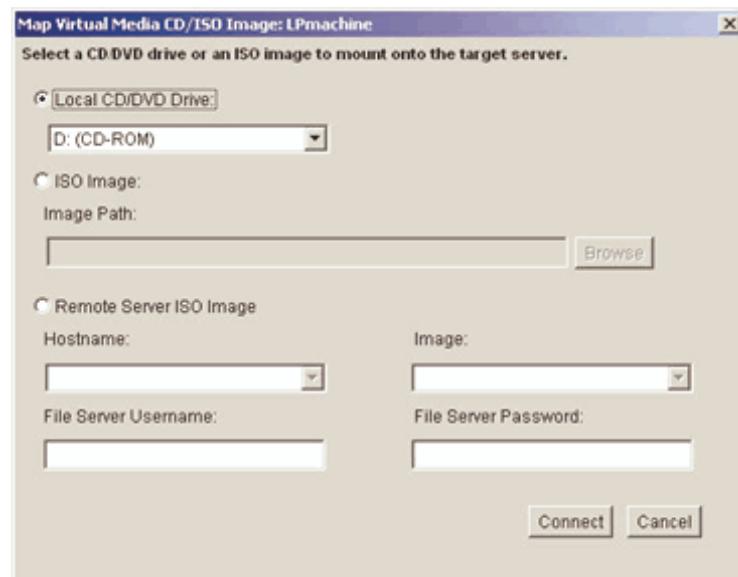


2. For internal and external CD-ROM or DVD-ROM drives:

   a. Choose the Local CD/DVD Drive option.

   b. Choose the drive from the Local CD/DVD Drive drop-down list. All available internal and external CD and DVD drive names will be populated in the drop-down list.

   c. Click Connect.

3. For ISO images:

   a. Choose the ISO Image option. Use this option when you want to access a disk image of a CD, DVD, or hard drive. ISO format is the only format supported.

   b. Click the Browse button.

   c. Navigate to the path containing the disk image you want to use and click Open. The path is populated in the Image Path field.

      d.   Click Connect.

4.  For remote ISO images on a file server:

      a.   Choose the Remote Server ISO Image option.

      b.   Choose Hostname and Image from the drop-down lists. The file servers and image paths available are those that you configured using the File Server Setup page. Only items you configured using the  File Server Setup page will be in the drop-down list.

      c.   File Server Username. Username required for access to the file server.

      d.   File Server Password. Password required for access to the file server (field is masked as you type).

      e.   Click Connect.

The media will be mounted on the target server virtually. You can access the media just like any other drive.

## Disconnecting Virtual Media

➢ *To disconnect the Virtual Media drives:*

- For local drives, choose Virtual Media > Disconnect Drive.
- For CD-ROM, DVD-ROM, and ISO images, choose Virtual Media > Disconnect CD-ROM/ISO Image.

Note: In addition to disconnecting the virtual media using the Disconnect option, simply closing the KVM connection closes the virtual media as well.

## File Server Setup (File Server ISO Images Only)

Note: This feature is only required when using virtual media to access file server ISO images.

Note: ISO9660 format is the standard supported by Raritan. However, other CD-ROM extensions may also work.

Use the Remote Console File Server Setup page to designate the files server(s) and image paths that you want to access using Virtual Media. File server ISO image(s) specified here will become available for selection in the Remote Server ISO Image Hostname and Image drop-down lists (in the *Map Virtual Media CD/ISO Image dialog* (see "CD-ROM/DVD-ROM/ISO Images" on page 158)).

➢ **To designate file server ISO images for virtual media access:**

1. Choose Virtual Media from the Remote Console. The File Server Setup page opens:



2. Enter information about the file server ISO images that you want to access:

- Host Name/IP Address. Host name or IP Address of the file server.

- Image Path. Full path name of the location of the ISO image.

3. Select the Selected checkbox for all media that you want accessible as virtual media.

4. Click Save. All media specified here will now be available for selection in the Map Virtual Media CD/ISO Image dialog.

➢ *To cancel without saving:*

- Click Cancel.

# Chapter 5    Raritan Serial Console

The standalone Raritan Serial Client (RSC) is used to make direct connections to a serial target without going through the  application. The user specifies the  address and the port number (target), and is then connected.

## In This Chapter

## System Requirements (Shared KSX II)

The following requirements must be met to support the Raritan Serial Console:

- The RSC will function with JRE version 1.4.2_05 or later (except for JRE version  1.5.0_02). However, for optimum performance, Raritan recommends using JRE 1.5.0 (except, of course for  1.5.0_02).

- Your system may require configuration adjustments depending on the operating system and browser. The JRE provides configuration instructions with the JRE download. Browse to the page at *http://www.java.com/en/download/help/testvm.xml* (http://www.java.com/en/download/help/testvm.xml \o http://www.java.com/en/download/help/testvm.xml) to determine the JRE version currently installed on your system. If you do not have a compatible version of the JRE, go to *http://www.java.com* (http://www.java.com)  and click the Download Now button.

Note: Raritan does not support JRE version 1.5.0_02 for use with the RSC.

- Minimum 1 GHz PC with 512 MB RAM.

Ensure that Java can be started from the command line. To do this, environment variables must be configured. Make a note of the exact path where Java was installed. (The path information will be used later.)

### Setting Windows OS Variables

1. Open the Start menu, and then open the Control Panel and choose System.

2. Go to Advanced and open Environment Variables.
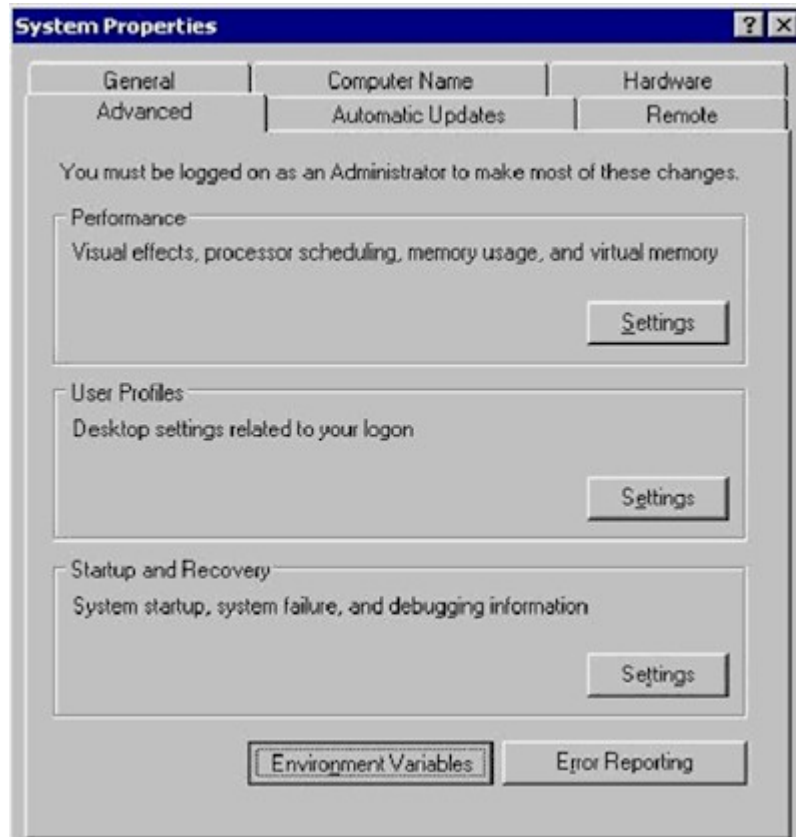


3. In the System variables section, click New.

4. In the New System Variable dialog, add JAVA_HOME to the Variable name block and the path you wrote down earlier in the Variable value block.

5.  Click OK.



6.  Select the PATH variable and click Edit.

7.  Add %JAVA_HOME%\bin to the end of the current Variable value.
    Ensure a
    semicolon (;) separates the new value from the last value in the
    string.

8.  Click OK.
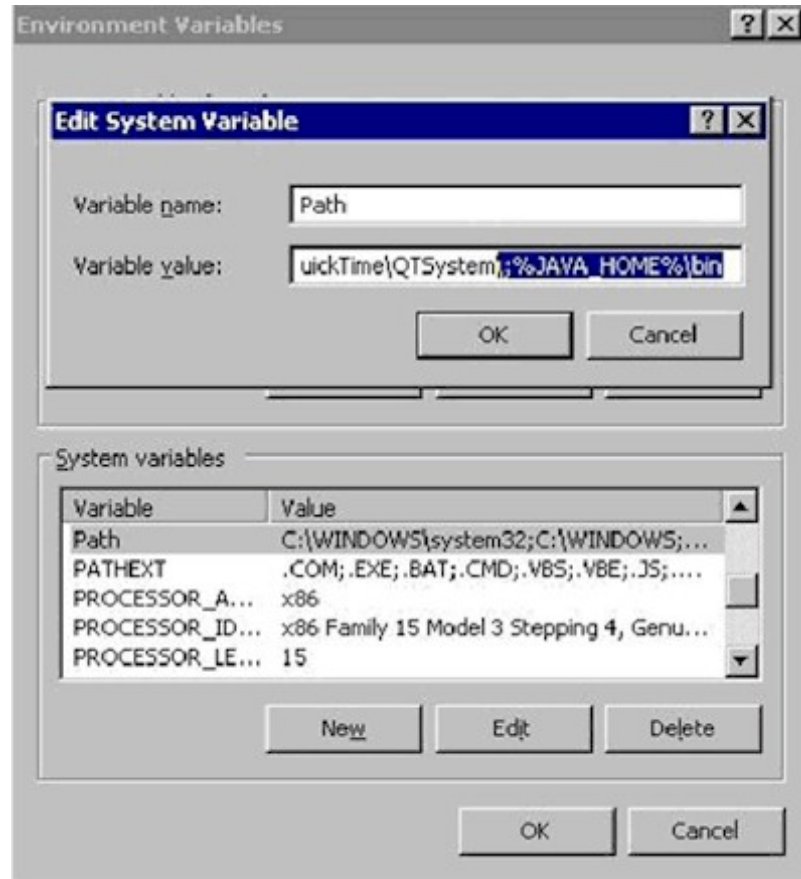


9.  Select the CLASSPATH variable and click Edit.

10. Ensure the CLASSPATH Variable value is configured properly; that is, its value must have a period (.) in it. If, for any reason, there is no CLASSPATH variable defined, create one.

## Setting Linux OS Variables

If you want to set Java for this user only, open and edit **.**profile file located in the /home/Username folder.

If you want to set Java for all users, open .profile file in your /etc folder:

1.  Find the line where you set your PATH

    Example: export `PATH=$PATH:/home/username/somefolder`

2.  Before that line you must set your JAVA_HOME and then modify your PATH to include it.
    To achieve this, add the following lines:

    ```
    export
    JAVA_HOME=/home/username/j2sdk1.4.2/
    export PATH=$PATH:$JAVA_HOME/bin
    ```

3.  Save the file and you are finished.

## Setting UNIX OS Variables

Perform the following steps to check the latest JRE Version on Sun Solaris.

1.  Launch a terminal window on the Sun Solaris desktop.

2.  Type java -version in the command line and press ENTER. The currently-installed version of Java Runtime Environment (JRE) appears.

    ▪ If your path variable is not set to where the java binaries have been installed, you may not be able to see the JRE version.

    ▪ To set your path: Assuming JRE 1.4.2_05 is installed in /usr/local/java: you must set your PATH variable.

    ▪ To set path for bash shell:
      ```
      export
      PATH=$PATH:/usr/local/java/j2re1.4.2_05/bin
      ```

    ▪ To set path for tcsh or csh:
      ```
      set PATH = ($PATH
      /usr/local/java/j2re1.4.2_05/bin)
      ```

- These commands can either be typed at the terminal each time you log in, or you can add them to your .bashrc for bash shell or .cshrc for csh or tcsh so that each time you log in, the PATH is already set. See your shell documentation if you encounter problems.

```
# java -version
java version "1.4.2_05"
Java(TM) 2 Runtime Environment, Standard Edition (build 1.4.2_05-b04)
Java HotSpot(TM) Client VM (build 1.4.2_05-b04, mixed mode)
#
```

3. If the JRE is version 1.4.2_05 or later, but not version 1.5.0_02 , proceed with the RSC installation. If the version is older, go to the Sun website at: *http://java.sun.com/products/* (http://java.sun.com/products/) to download the latest Runtime Environment.

## Installing RSC on Windows

You must have administrative privileges to install RSC.

➢ *To install RSC on Windows:*

1. Log on to a Windows machine.

2. Download, or copy from a known location, the RSC-installer.jar installation file.

3. Double-click on the executable file to start the installer program. The splash page appears.

4. Click Next. The installation path page appears.

5. Change the path, if desired.

6. Click Next. The installation progress page appears.

Note: The standalone version of Raritan Serial Console (RSC) is available from the Raritan Support website: *http://www.raritan.com/support/sup_upgrades.aspx* (http://www.raritan.com/support/sup_upgrades.aspx)
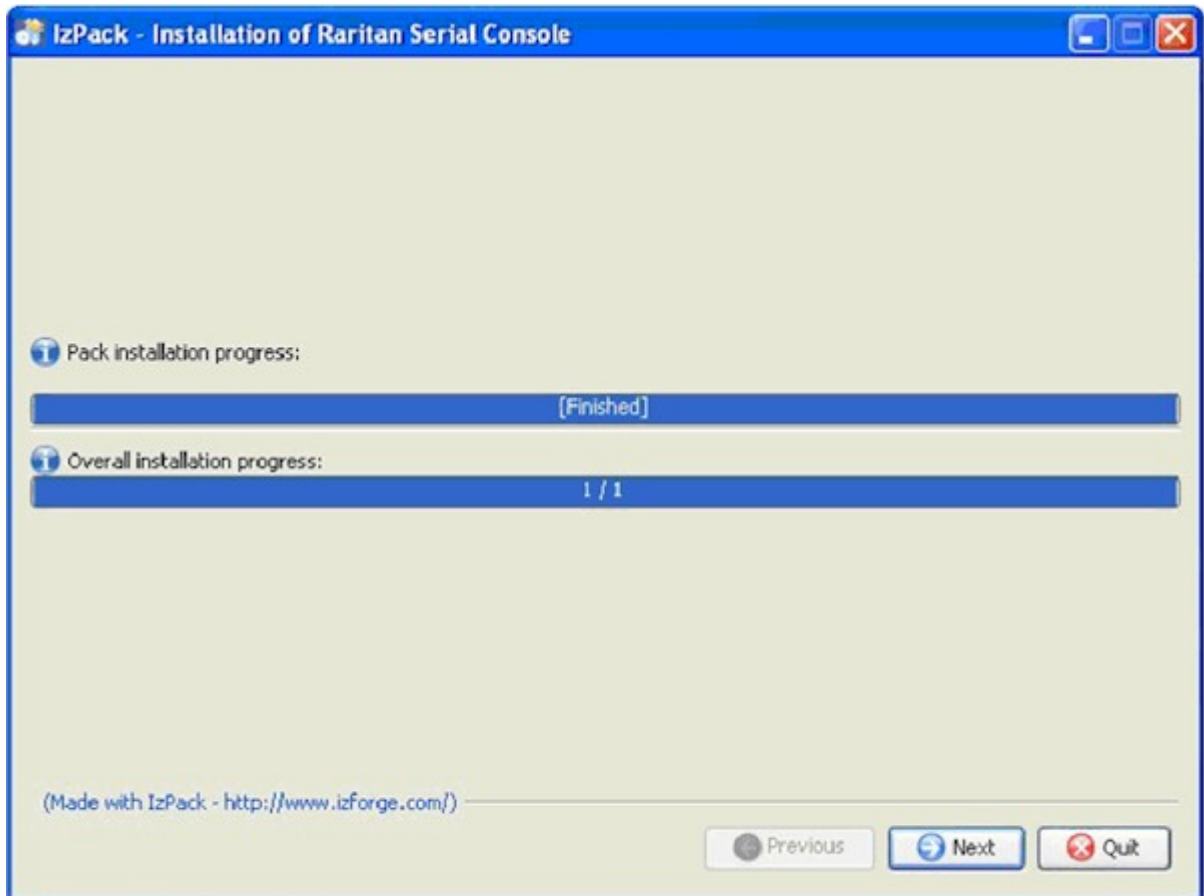
7. Click Next. The Windows shortcut page appears.
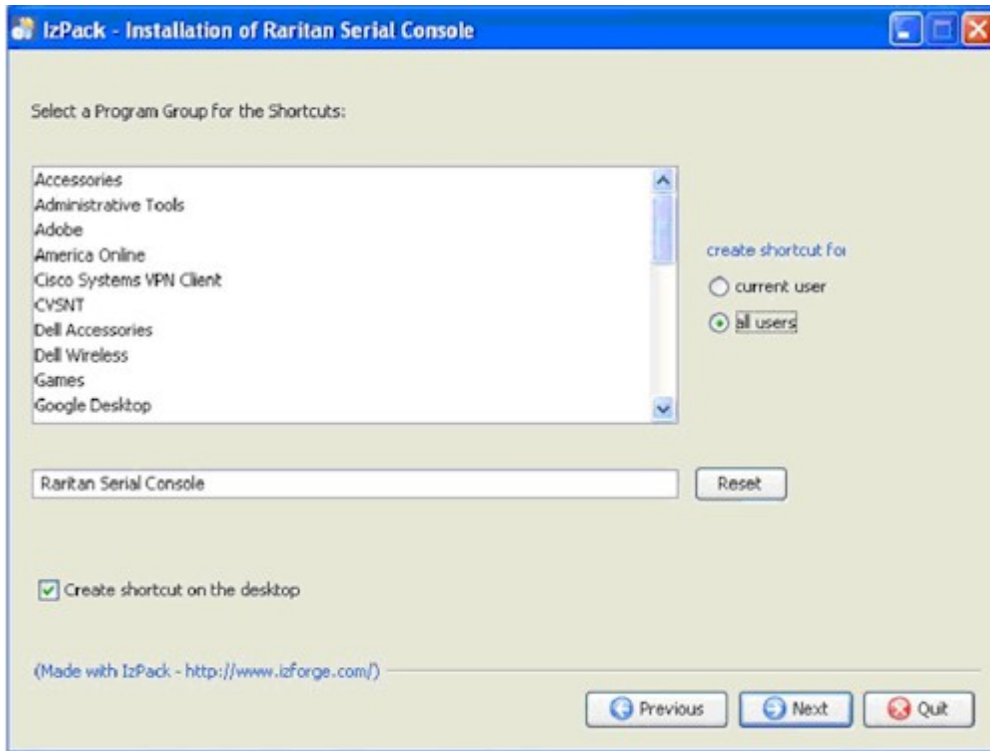


8. Specify the desired Program Group for the Shortcut.

9. Click Next. The installation finished page appears.

10. Click Done.

## Installing RSC for Sun Solaris and Linux

You must have administrative privileges to install RSC.

1. Log on to your Sun Solaris machine.

2. Download, or copy from a known location, the RSC-installer.jar installation file.

3. Open a terminal window and change to the directory where the installer is saved.

4. Type java -jar RSC-installer.jar and press ENTER to run the installer.

5. Click Next after the initial page loads.

6. The Set Installation Path page appears.

   a. Select the directory where you want to install RSC and click Next.

b.  Click Browse to navigate to a non-default directory.

c.  Click Next when the installation is complete.

d.  Click Next again. The installation is complete. The final page indicates where you will find an uninstaller program, and allows the option of generating an automatic installation script.

e.  Click Done to close the Installation window.
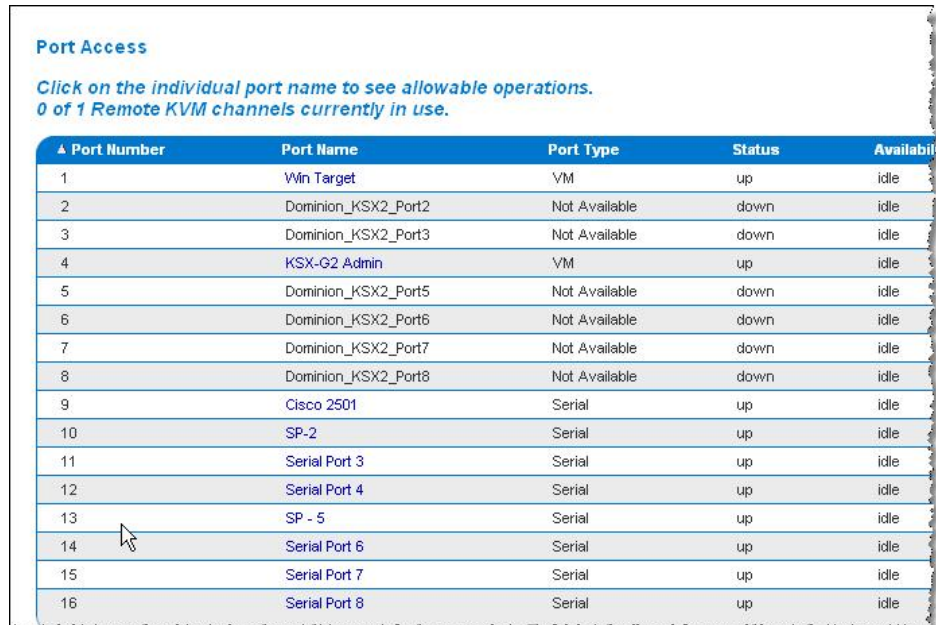
## Opening RSC from a  Remote Console

➢ *To open the Raritan Serial Console (RSC) from the Remote Console:*

1.  Select the Port Access tab.



2.  Click on the name of the serial port you want to access for the RSC.

Note: A security pop-up screen appears only if you used https to connect to the RSC.

3.  Click Yes. A Warning - Security pop-up screen appears.

4.  Click Yes to access the Raritan Serial Console from the Port page.

Note: If you click Always, you will not receive the security page for future access.

The Raritan Serial Console window appears. For information, see to *Raritan Serial Console Interface* (see "Raritan Serial Client Interface" on page 171) section in this chapter.

Note: You can download the standalone Raritan Serial Client from the Raritan support website: *http://www.raritan.com/support* (http://www.raritan.com/support).

> ➢ *To open RSC from the Windows desktop:*

1. Double-click on the shortcut or use Start Programs to open the standalone RSC. The Raritan Serial Console Login connection properties window appears.

2. Enter the Dominion IP address, account information, and the desired target (port).

3. Click Start. The RSC opens with a connection to the port.

Note: In case of unrecognized characters or blurry pages that might appear in RSC window due to localization support, please try changing the font to Courier New. Go to: Emulator > Settings > Display, and select Courier New for Terminal Font Properties or GUI Font Properties.

Note: When RSC connects a serial target, hitting Ctrl + _ or Ctrl + ^ + _ does not cause information to be sent. However, hitting the Ctrl + Shift + _ or the Ctrl + Shift + ^ will cause information to be sent.

> ➢ *To open RSC on Sun Solaris:*

1. Open a terminal window and change to the directory where you installed the RSC.

2. Type ./start.sh and press ENTER to open RSC.

3. Double-click on the desired device to establish a connection.

4. Type your Username and Password.

5. Click OK to log in.

## Raritan Serial Client Interface

**Important: The Raritan Serial Console page usually opens in a separate window in back of the Port page. With some versions of Java on Windows, the page opens in front of the Port page.**

Minimize the Port Access page to access the Raritan Serial Console page. The RSC contains drop-down menus that provide the user with the ability to:

- Modify emulation settings such as fonts and window size.
- Manage the history of the session.
- Request Write Access to the port.
- Get a Write Lock on the port.
- Send a Break signal (used for Solaris servers).
- Get a list of users connected to this port.
- Edit text in the window.
- Manage client workstation-based logging of data from the target device.
- Send Keystroke (combinations).
- Send Text files.
- Send power commands to a Power Distribution Unit (PDU).
- Chat among other users on the same port.
- Get help.

---
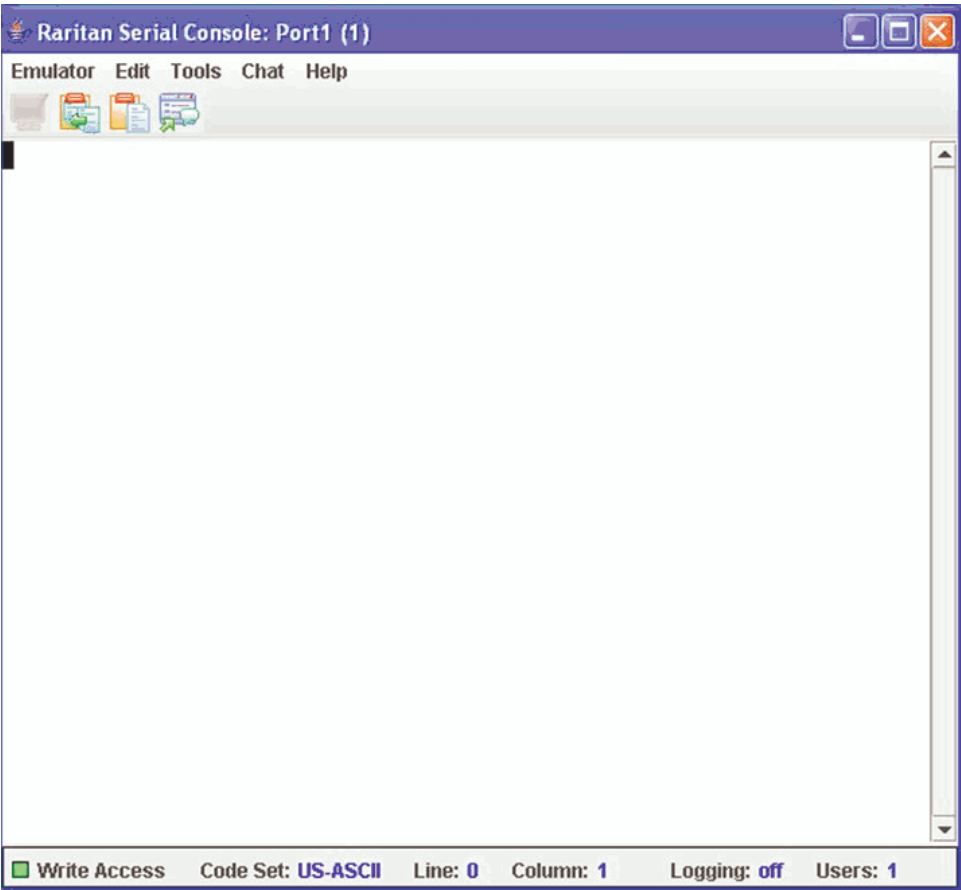
### Default RSC Option Values

The following default values apply to the GUI font properties, colors and fonts defined in RSC:

| Item | Value |
|---|---|
| Font Properties | Monospaced |
| GUI Font Properties | Monospaced |
| Colors | Black Foreground and White Background |

---

### Emulator

1.  Change the default user Idle Timeout setting before launching the RSC for the first time or it will timeout in 10 minutes and display a host termination message. See the Security section of the  User Guide for changing the Idle Timeout setting..

2.  Click the Emulator drop-down menu to display a list of topics.
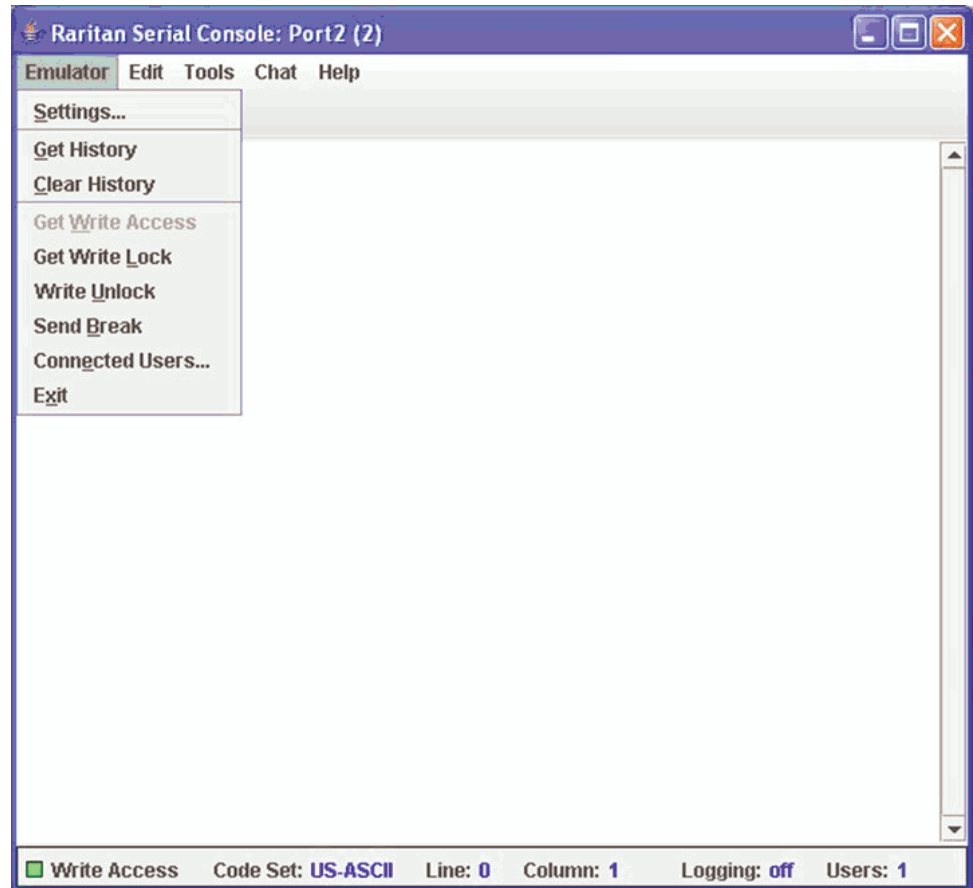
**Settings**

Note: Terminal emulation settings are set with the port by an Administrator using the Setup->Port Configuration menu.

1. Choose Emulator > Settings. The Settings page displays the General tab with the default settings.
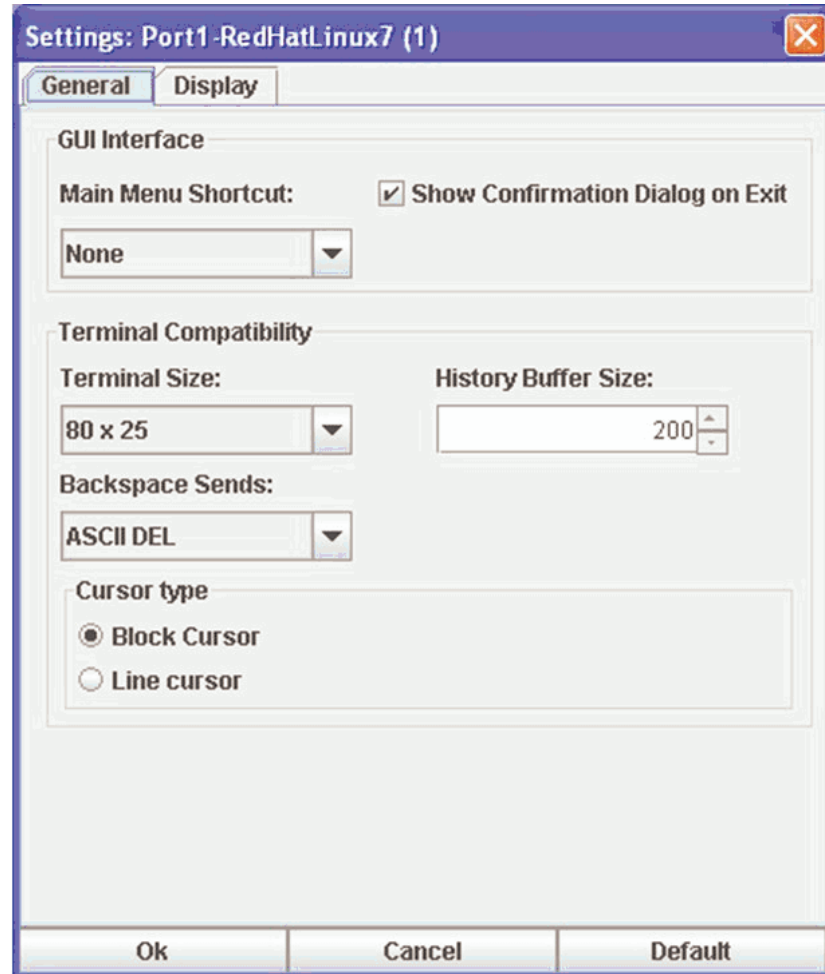


2. Accept the Main Menu Shortcut: default of None or choose one of the following from the Main Menu Shortcut: drop-down menu.

   ▪ F10

   ▪ Alt

3. Accept the Show Confirmation Dialog on Exit default or uncheck it.

4. Accept the Terminal Size: default or choose a size from the Terminal Size: drop-down menu.

5. Accept the Backspace Sends: default of ASCII DEL or choose Control-H from the Backspace Sends: drop-down menu.

6. Accept the History Buffer Size: default of 200 or use the arrows to change the buffer size.

7. Accept the Cursor type: default of Block Cursor: or select Line Cursor.

8. Click OK.

**Display Settings**

1.  Return to the Emulator menu, choose Settings and then click the Display tab.
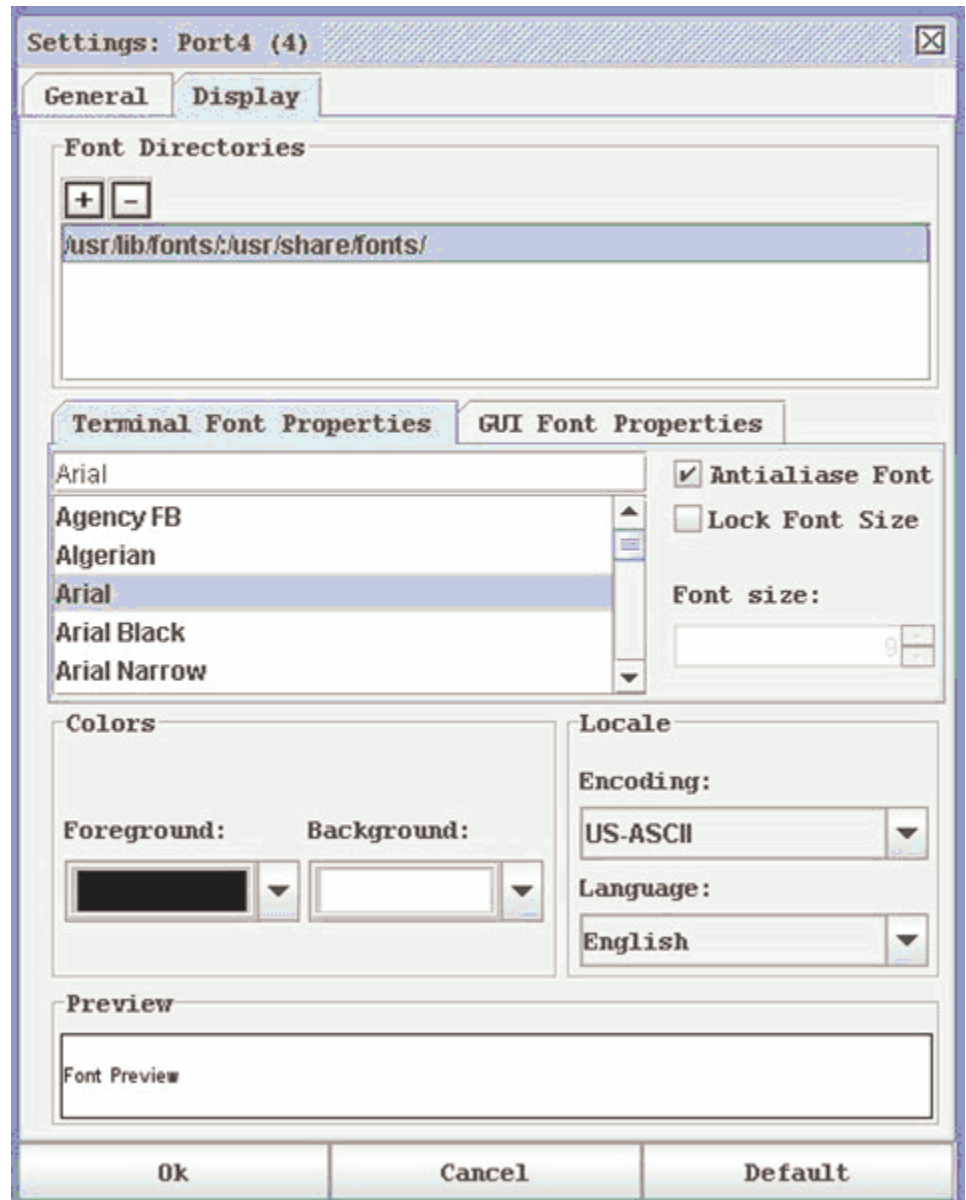


2.  Click Default to accept the Default settings. Then click Ok to close the Display Settings dialog; however, if you want to change the settings, perform the following steps:

3.  Accept the Terminal Font Properties default of Arial or choose a font from the Terminal Font Properties scrolling list.

4.  Accept the Antialiase Font default or uncheck it.

5. If you want to change the size of the font, check the Lock Font Size box and choose a font size from the Font size: drop-down menu.

6. Click the GUI Font Properties tab and accept the default of Monospaced or choose a font from the GUI Font Properties scrolling list.
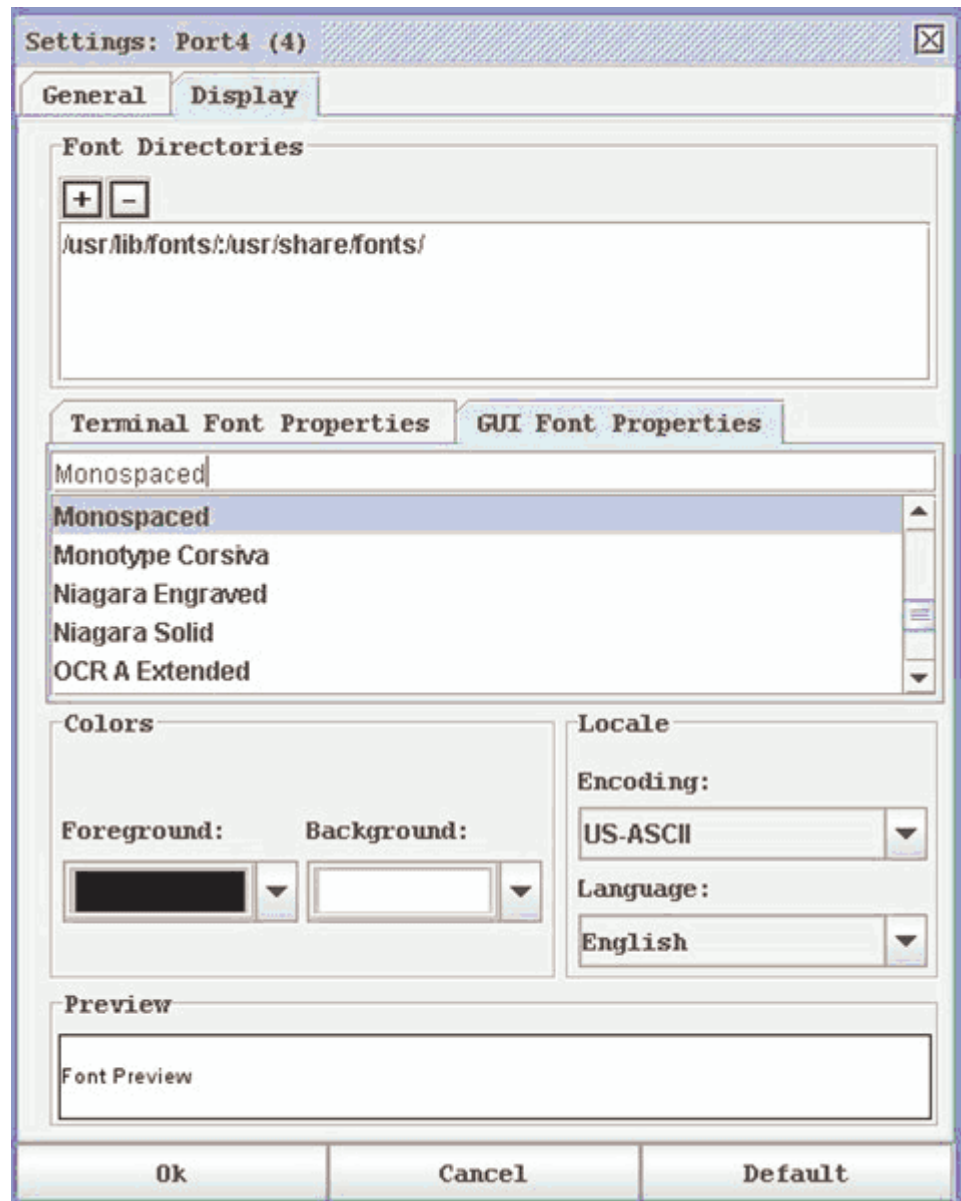


Note: For Simplified Chinese characters, Raritan Serial Console supports EUC-CN encoding system.

7. Choose the following from their drop-down menus:

   ▪ Foreground Color

- Background Color

8. Choose one of the following from the Encoding drop-down menu:

   - US-ASCII

   - ISO-8859-1

   - ISO-8859-15

9. Choose one of the following from the Language drop-down menu:

   - English

   - Japanese

   - Korean

   - Chinese

10. Click Ok to close the Display Settings dialog. If you changed the Language setting, the RSC changes to that language when the Display Settings dialog is closed.

Note: In case of unrecognized characters or blurry pages that might appear when RSC is launched due to localization support, please try changing the font to Courier New.

### Get History

History information can be useful when debugging, troubleshooting, or administering a target device. The Get History feature:

- Allows you to view the recent history of console sessions by displaying the console messages to and from the target device.

When the size limit is reached, the text will wrap, overwriting the oldest data with the newest.

Notes: Verify the memory on your unit from the Maintenance->Configuration menu. History data is displayed only to the user who requested the history.

To view the Session History, click Get History on the Emulator menu.

### Clear History

- To clear the history, click Clear History on the Emulator menu.

### Get Write Access

Only Administrators and Operators can get write access. The user with Write Access can send commands to the target device. Write Access can be transferred among users working in the Raritan Serial Console via the Get Write Access command.

To enable Write Access, click Get Write Access on the Emulator menu.

- You now have Write Access to the target device.

- When another user assumes Write Access from you,

    - The RSC displays a red block before Write Access in the status bar.

    - A message alerting the user who currently has Write Access appears to tell that user that another user has taken over access to the console.

### Get Write Lock

1. To get write lock, click Get Write Lock on the Emulator menu.

2. If the Get Write Lock is not available, a request rejected message appears.

### Write Unlock

To get Write Unlock, click Write Unlock on the Emulator menu.

### Send Break

Some target systems such as Sun Solaris servers require the transmission of a null character (Break) to generate the **OK** prompt. This is equivalent to issuing a STOP-A from the Sun keyboard.

- Only users with Administrator privileges can send a break.

- Users who are Operator or Observers cannot send a break.

To send an intentional "break" to a Sun Solaris server:

1. Verify that you have Write Access. If not, follow the instructions in the previous section to obtain write access.

2. Click Send Break on the Emulator menu.
   A Send Break Ack (Acknowledgement) pop-up appears.

3. Click OK.

**Connected Users**

The Connected Users command allows you to view a list of other users who are currently connected on the same port.

1.  Click Connected Users to view the connected users on the Emulator menu.
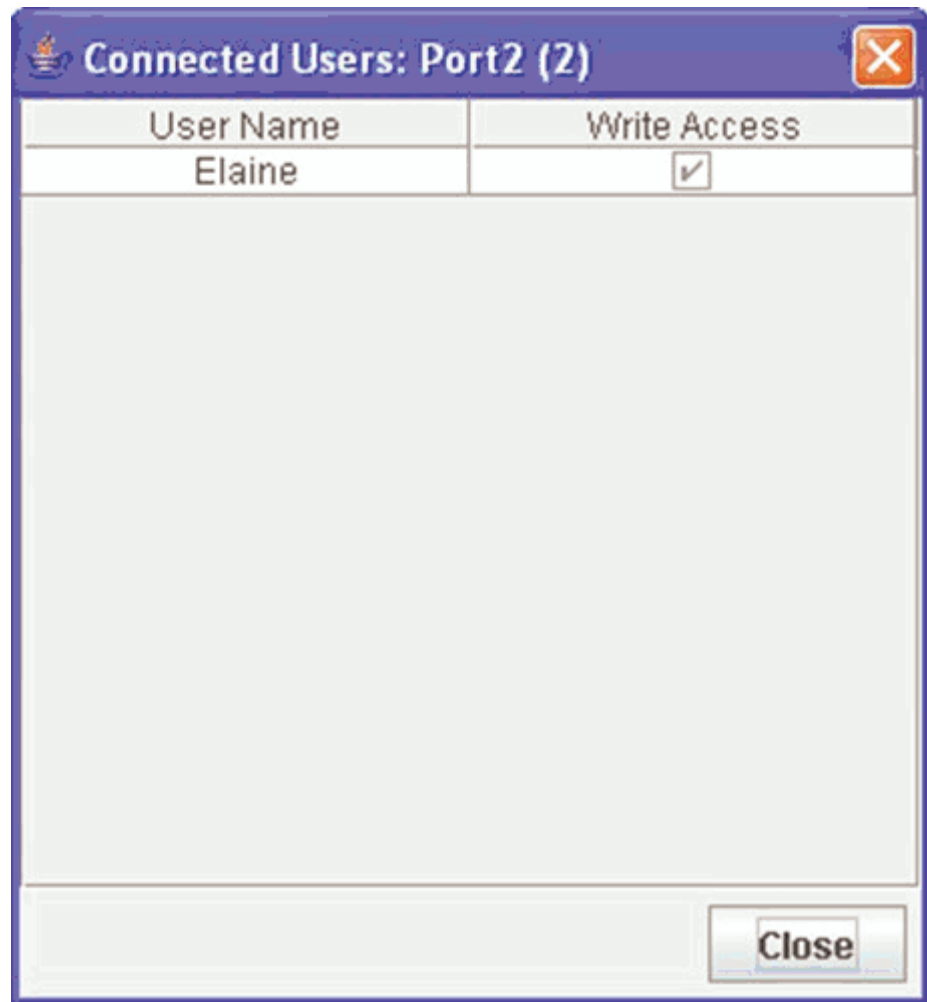


2.  A check mark appears in the Write Access column after the name of the User who has Write Access to the console.

3.  Click Close to close the Connected Users dialog.

**Exit**

1.  Click Exit on the Emulator menu to close the Raritan Serial Console.

    The Exit Confirmation page appears.

2.  Click Yes.

## Edit

Use the Copy, Paste, and Select All text commands to relocate and/or re-use important text.
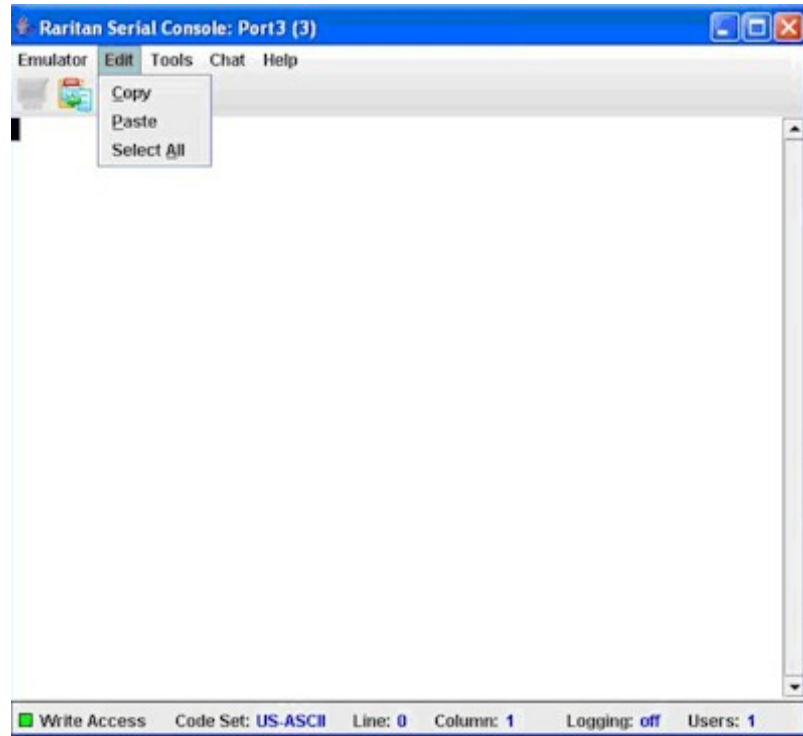


➢ *Copy and Paste All Text:*

1. Click Select All on the Edit menu.

2. Click Copy on the Edit menu.

3. Position the cursor at the location where you want to paste the text.

4. Click once to make that location active.

5. Click Paste on the Edit menu.

Note: Here are keyboard shortcuts that you can use to highlight, copy, and paste all or partial lines of text:
- Click and drag your mouse over the text you wish to copy.
- Press Ctrl and tap the C key to copy.
- Position the cursor where you want to paste the text and click in that location to make it
  active.
- Press Ctrl and tap the V key to paste.

The text copy limit in Raritan Serial Console is 9999 lines.

## Tools

Click on the Tools drop-down menu to display a list of topics.
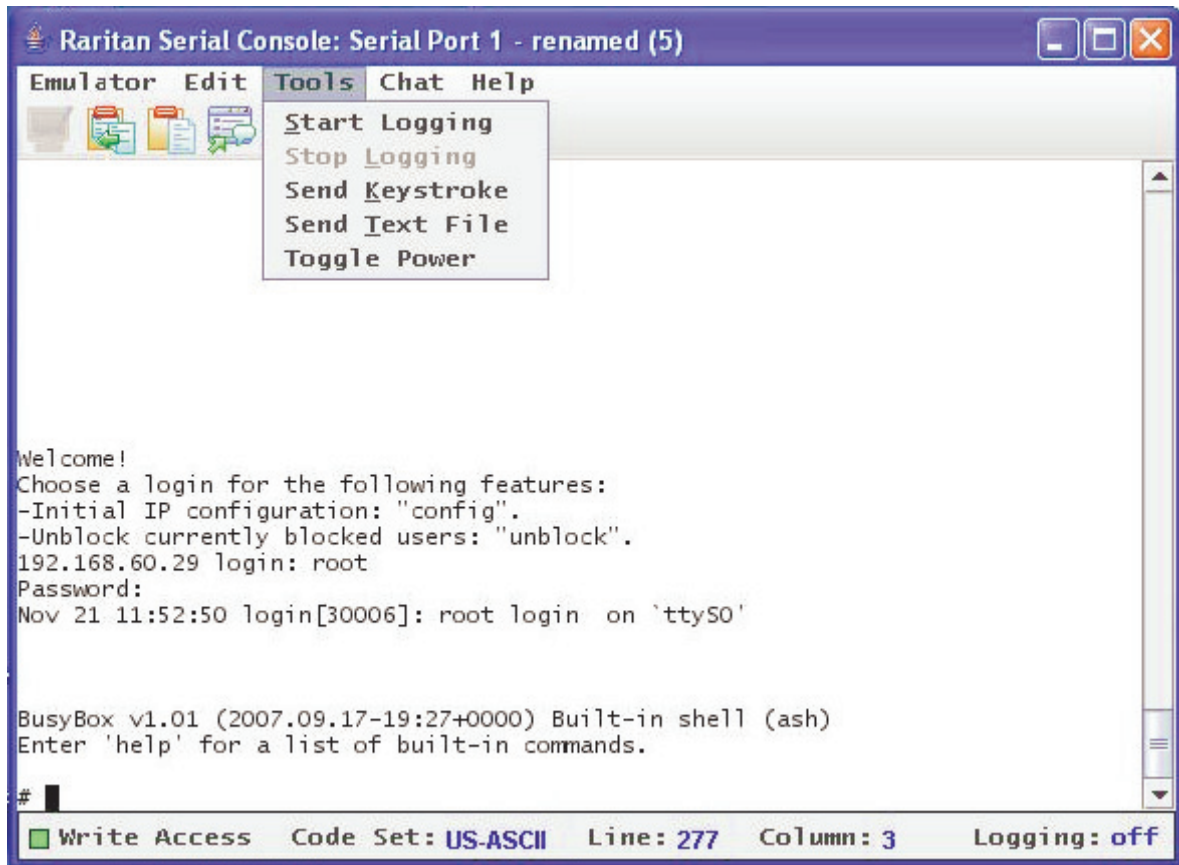
### Start Logging

The Start Logging function allows you to collect raw console data from the target device and save it to a file in your computer. When you start the RSC, the Logging indicator on the status bar indicates whether logging is on or off.

1.  On the Tools menu, click Start Logging.

2.  Choose an existing file or provide a new file name in the Save RSC Log dialog.

    ▪ When an existing file is selected for logging, data gets appended to the contents.

    ▪ Providing a new file name results in new file being created.
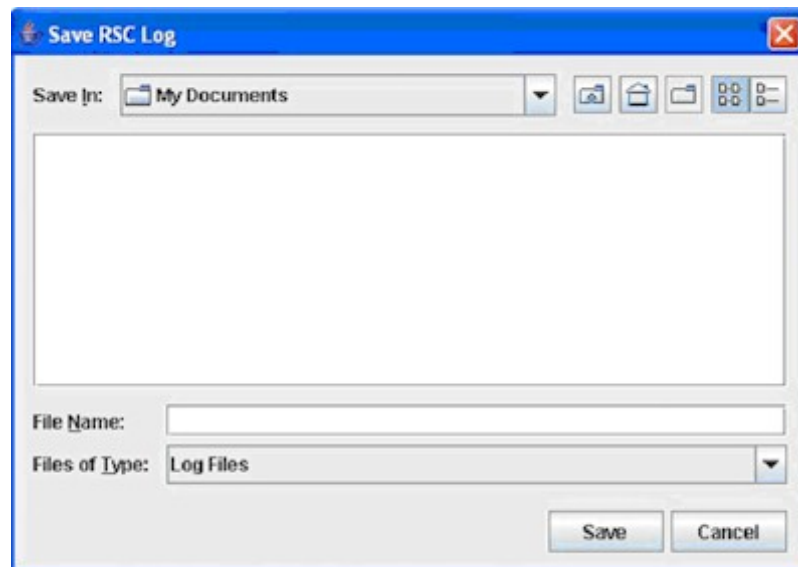


3.  Click Save after selecting or creating a file.

### Stop Logging

On the Tools menu, click Stop Logging. The logging stops.

### Send Keystroke

1.  On the Tools menu, click Send Keystroke.
    A Send Keystroke screen appears:



2.  Enter the keystroke combinations that you want and select a Key Code name from the drop-down menu.

3.  Send the keystroke combinations.

### Send Text File

1.  On the Tools menu, click Send Text File.
    A Send Text File screen appears:

2.  Open the directory of the Text file.

3.  Click on or enter the File Name of the Text file.

4.  Click Open.

    ▪  As soon as you click the Open dialog, it sends whatever file you selected directly to the port.

    ▪  If there is a loopback plug inserted, you see the file displayed.

If there is currently no target connected, then nothing will be visible on the screen.

## Chat

When using browser access over SSL, an interactive chat feature called Chat provides you and other users on the same port to communicate. You can conduct an online dialog for training or collaborative diagnostic activities. The maximum length of a chat message is 300 characters.

Note: When a chat is initiated, a chat window appears on the monitors of all SSL users logged on to the port. If a user is logged into a port multiple times, chat messages will not be shown to the same user.

### To use Chat:

1. Click Chat on the Chat menu.
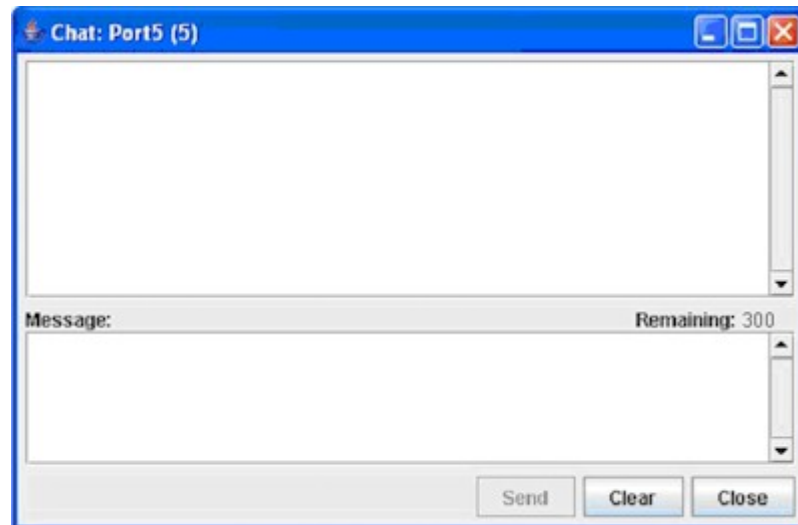


2. Type a message in the Message text field.

3. Click Send or press ENTER to send the message.

4. Click Clear to delete the typed text, or click Close to exit and close the Message window.

## Help

Help Topics include on-line assistance for operating the Raritan Serial Console, and release information about Raritan Serial Console.

### Help Topics

To Access Help Topics:

1. Click Help Topics on the Help menu.

2.  Use the navigation bar on the right side of Table of Contents window to scroll to the topic you need or click on the links.

3.  Close this window when you are finished.

**About Raritan Serial Console**

The About Raritan Serial Console window displays the copyright and version information (name and revision number) of the console terminal emulation software. When contacting Raritan for technical support or when performing a software upgrade, you may be asked for this information.

➢   *To Access 'About' Information:*

1.  Click About Raritan Serial Console on the Help menu.

    An About Raritan Serial Console message appears on top of the Raritan Serial Console drop-down menu:



2.  Click OK to close the About Raritan Serial Console dialog.

# Index

Raritan.
When you're ready to take control®

➢ **U.S./Canada/Latin America**

Monday - Friday
8 a.m. - 8 p.m. ET
Phone: 800-724-8090 or 732-764-8886
For CommandCenter NOC: Press 6, then Press 1
For CommandCenter Secure Gateway: Press 6, then Press 2
Fax: 732-764-8887
Email for CommandCenter NOC: tech-ccnoc@raritan.com
Email for all other products: tech@raritan.com

➢ **China**

**Beijing**

Monday - Friday
9 a.m. - 6 p.m. local time
Phone: +86-10-88091890

**Shanghai**

Monday - Friday
9 a.m. - 6 p.m. local time
Phone: +86-21-5425-2499

**GuangZhou**

Monday - Friday
9 a.m. - 6 p.m. local time
Phone: +86-20-8755-5561

➢ **India**

Monday - Friday
9 a.m. - 6 p.m. local time
Phone: +91-124-410-7881

➢ **Japan**

Monday - Friday
9:30 a.m. - 5:30 p.m. local time
Phone: +81-3-3523-5994
Email: support.japan@raritan.com

➢ **Europe**

**Europe**

Monday - Friday
8:30 a.m. - 5 p.m. GMT+1 CET
Phone: +31-10-2844040
Email: tech.europe@raritan.com

**United Kingdom**

Monday - Friday
8:30 a.m. to 5 p.m. GMT+1 CET
Phone +44-20-7614-77-00
France
Monday - Friday
8:30 a.m. - 5 p.m. GMT+1 CET
Phone: +33-1-47-56-20-39

**Germany**

Monday - Friday
8:30 a.m. - 5 p.m. GMT+1 CET
Phone: +49-20-17-47-98-0

➢ **Korea**

Monday - Friday
9 a.m. - 6 p.m. local time
Phone: +82-2-5578730

➢ **Melbourne, Australia**

Monday - Friday
9:00 a.m. - 6 p.m. local time
Phone: +61-3-9866-6887

➢ **Taiwan**

Monday - Friday
9 a.m. - 6 p.m. GMT -5 Standard -4 Daylight
Phone: +886-2-8919-1333
Email: tech.rap@raritan.com