Dominion KX II-101-V2

User Guide
Release 3.7.0

KX2101V2-v3.7.0-0E-E

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

Raritan is not responsible for damage to this product resulting from accident, disaster, misuse, abuse, non-Raritan modification of the product, or other events outside of Raritan's reasonable control or not arising under normal operating conditions.

If a power cable is included with this product, it must be used exclusively for this product.

In Raritan products that require Rack Mounting, please follow these precautions:

- Operation temperature in a closed rack environment may be greater than room temperature. Do not exceed the rated maximum ambient temperature of the appliances. See **Specifications** (on page 197) in online help.
- Ensure sufficient airflow through the rack environment.
- Mount equipment in the rack carefully to avoid uneven mechanical loading.
- Connect equipment to the supply circuit carefully to avoid overloading circuits.
- Ground all equipment properly, especially supply connections, such as power strips (other than direct connections), to the branch circuit.

Contents

Chapter 1 KX II-101-V2 Overview

Thank you for purchasing the Dominion KX II-101-V2. The KX II-101-V2 provides a single keyboard, video, and mouse (KVM) port for connection to a target server, and a single IP port for connection to an IP network. Within the KX II-101-V2 device, KVM signals from your server are converted to IP format and compressed for transmission over an IP network.

The KX II-101-V2 dongle form-factor makes it easy to install near the target server, and each individual KX II-101-V2 device has its own IP address. Each device is powered via an external AC-DC power pack.

The KX II-101-V2 can operate as a standalone appliance or integrated into a single logical solution, along with other Raritan access products, using Raritan's CommandCenter Secure Gateway (CC-SG) 5.4 or later management unit.

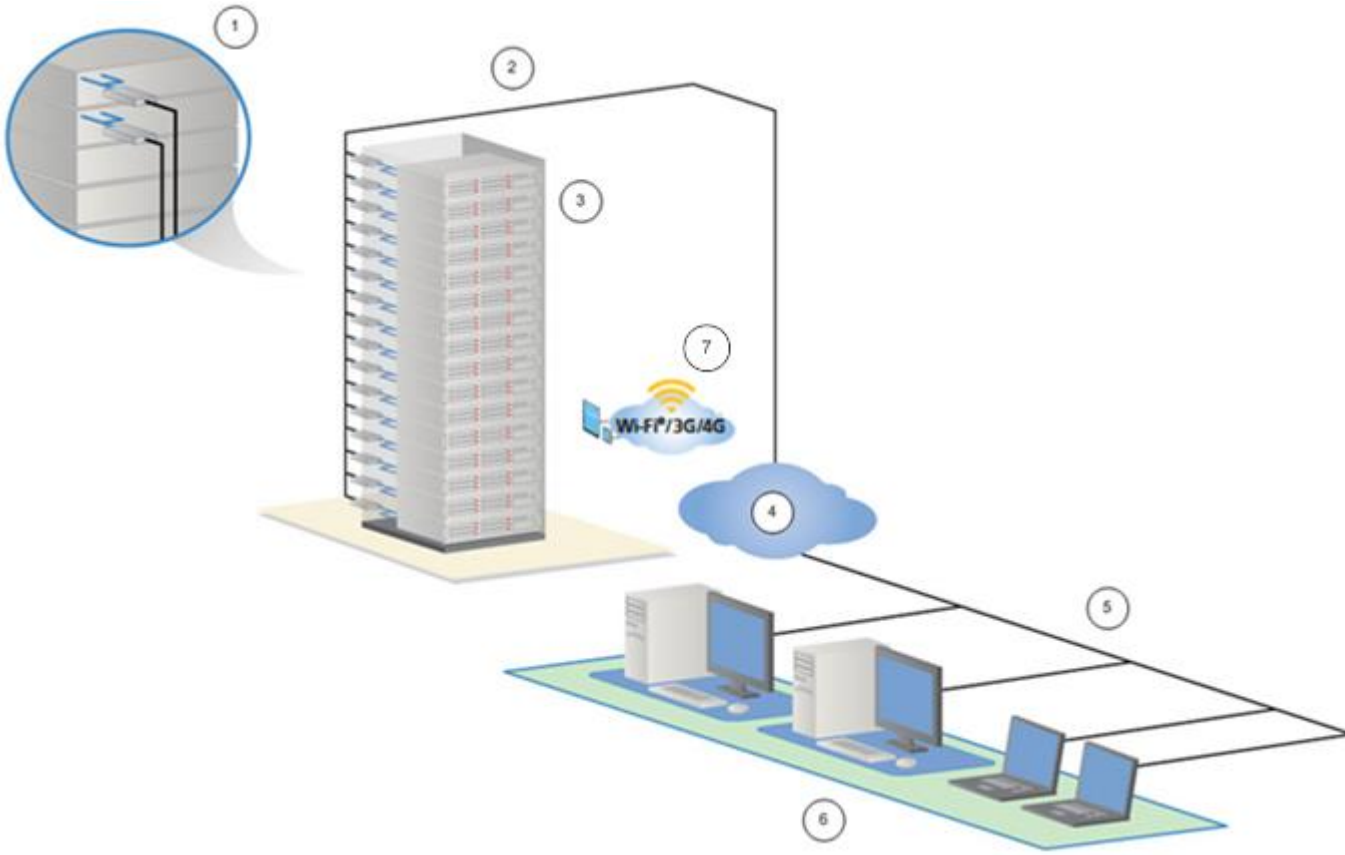


Diagram key	
1	KX II-101-V2
2	LAN
3	Windows®, Linux® and Sun™ servers
4	TCP/IP
5	LAN
6	Remote (network) access
7	Mobile access via iPhone® and iPad® using CC-SG

In This Chapter

Package Contents

Each KX II-101-V2 device ships with:

- 1 - KX II-101-V2 KVM over IP
- 1 - KVM cable
- 1 - Power adapter (AC/DC 5VDC with universal adapter)
- 1 - Mounting bracket kit
- 1 - Quick Setup Guide
- 1 - Release notes (if applicable)

KX II-101-V2 Help

See the KX II-101-V2 Release Notes for important information on the current release before you begin using the KX II-101-V2.

KVM Client help is provided as part of KX II-101-V2 online help.

Online help is accompanied by the KX II-101-V2 Quick Setup Guide, which is included with your KX II-101-V2 and can be found on the Raritan Support page of ***Raritan's website*** (***http://www.raritan.com/support/firmware-and-documentation***).

Note: To use online help, Active Content must be enabled in your browser.

Product Photos

KX II-101-V2

Product Features

Interfaces

- Integrated PS/2 KVM connection
- USB connection for control and virtual media
- Serial Admin port for initial device configuration and diagnostics, as well as use with an external modem access and Raritan power strip control
- Local port for monitor connection
- Ethernet LAN port supporting 10/100-base-T autosensing, full duplex

Network Configuration

- DHCP or static IP device address

System Management Features

- Firmware upgradable over Ethernet
- Failsafe firmware upgrade capability
- Clock that can be set manually or via synchronization with Network Time Protocol (NTP/SNTP)
- Local, timestamped, administrator activity log SNMP V2 agent that can be disabled by the administrator
- Support for RADIUS and LDAP/LDAPS authentication protocols

Administration Features

- Web-based management
- LDAP, Active Directory®, RADIUS, or internal authentication and authorization
- DHCP or fixed IP addressing
- Integration with Raritan's CommandCenter Secure Gateway (CC-SG) management unit
- Mobile access from iPad® and iPhone® to servers connected to a KX II-101-V2 being managed by CC-SG
- Support for FIPS 140-2
- Support for a login security banner
- SNMPv3 support
- Ability to upload your own SSL certificate to the KX II-101-V2
- Configurable TCP/IP port numbers (Stealth Mode)
- Support for IPv4 and IPv6 in a dual stack environment
- Disconnecting users from ports
- Forced user log off

User Features

- Web-based access through common browsers
- Intuitive graphical user interface (GUI)
- PC Share mode, which enables more than one remote user to connect to the target
- TCP communication
- English, Japanese, Traditional Chinese and Simplified Chinese user interface and help
- Virtual media access
- Absolute Mouse Synchronization™
- Plug-and-play
- 256-bit encryption of complete KVM signal, including video and virtual media

Power

- Powered by an external AC/DC adapter

Video Resolution

- Up to 1920x1080 at up to 60 Hz and wide screen video resolutions

Mounting

- Rack mounting bracket

Chapter 2 Installation and Configuration

In This Chapter

Overview

This section provides a brief overview of the installation process. Each step is further detailed in the remaining sections of this chapter.

Before installing the KX II-101-V2 device, configure the target server you want to access via KX II-101-V2 so you ensure optimum performance.

Factory Default Login Information

The KX II-101-V2 device is shipped from the factory with the following default settings built in:

- Username = `admin`

  All lowercase.

  This user has administrative privileges.
- Password = `raritan`

  All lowercase.
- IP address = `192.168.0.192`

Important: For backup and business continuity purposes, it is strongly recommended you create a backup administrator username and password, and keep that information in a secure location.

Getting Started

KX II-101-V2 users with Microsoft® Internet Explorer® version 6 or Windows 2000® must upgrade to Service Pack 4 (SP4) or higher.

The KX II-101-V2 ships with a static default IP address. On a network without a DHCP server, you must configure a new static IP address, net mask, and gateway address using either the KX II-101-V2 serial admin console or the KX II-101-V2 Remote Console.

See Assigning an IP Address for information on assigning an IP address to the KX II-101-V2 using the Remote Console.

See ***Configure the KX II-101-V2 Using a Terminal Emulation Program (Optional)*** (on page 23) for information on setting an IP address using the Serial Admin Console.

Note that the following configuration requirements apply only to the target server, not to the computers that you remotely access the KX II-101-V2.

Step 1: Configure the Target Server

Target Server Video Resolutions

For optimal bandwidth efficiency and video performance, a target server running a graphical user interface such as Windows, X-Windows, Solaris, and KDE should be configured with desktop backgrounds set to a predominantly solid, light-colored graphic.

Backgrounds featuring photos or complex gradients should be avoided.

Ensure that the server's video resolution and refresh rate are supported by the KX II-101-V2, and that the signal is non-interlaced.

See **KX II-101-V2** Online Help for a list of support target server resolutions.

Mouse Modes

The KX II-101-V2 operates in several mouse modes: Absolute Mouse Synchronization™, Intelligent Mouse mode and Standard Mouse mode.

Note: Do not use an animated mouse while using Intelligent Mouse mode.

Mouse parameters do not have to be altered for Absolute Mouse Synchronization.

For both the Standard and Intelligent Mouse modes, mouse parameters must be set to specific values, which are described in this section.

Mouse configurations will vary on different target operating systems. Consult your OS documentation for additional details.

Following are the mouse settings for various operating systems.

These settings are configured on your target operating system unless otherwise indicated.

See the **KX II-101-V2** Online Help for details on configuring these mouse settings.

Windows 7 and Windows Vista Mouse Settings

Configure these mouse settings in Windows 7® and Windows Vista®:

Configure the motion settings:

- Set the mouse motion speed setting to exactly the middle speed
- Disable the "Enhanced pointer precision" option

Disable animation and fade effects:

- Animate controls and elements inside windows
- Animate windows when minimizing and maximizing
- Fade or slide menus into view
- Fade or slide ToolTips into view
- Fade out menu items after clicking

Windows XP, Windows 2003, Windows 2008 Mouse Settings

Configure these mouse settings in Windows XP®, Windows 2003® and Windows 2008®:

Configure the Motion settings:

- Set the mouse motion speed setting to exactly the middle speed
- Disable the "Enhance pointer precision" option
- Disable the Snap To option

Disable transition effects:

- Deselect the "Use the following transition effect for menus and tooltips" option

Windows 2000 Mouse Settings

Configure these Windows 2000® mouse settings:

Configure the Motion settings:

- Set the acceleration to None
- Set the mouse motion speed setting to exactly the middle speed

Disable transition effects:

- Deselect the "Use the following transition effect for menus and tooltips" option

Apple Mac Mouse Settings

Absolute Mouse Synchronization is required for proper mouse synchronization on KVM target servers running a Mac® operating system.

To enter Absolute Mouse Synchronization:

- Choose Mouse > Absolute in the KVM client.

Linux Mouse Settings

Configure these Linux® mouse settings:

- (Standard Mouse Mode only) Set the mouse acceleration to exactly 1 and set the threshold to exactly 1. Enter the following command: `xset mouse 1 1`. This should be set for execution upon login.

Sun Solaris Mouse Settings

Configure these Sun® Solaris™ mouse settings:

- Set the mouse acceleration value to exactly 1 and the threshold to exactly 1
- Ensure that your video card is set to a supported resolution and that its output is VGA, not composite sync

IBM AIX Mouse Settings

Configure these IBM AIX® mouse settings:

- Go to the Style Manager, click on Mouse Settings and set Mouse Acceleration to 1.0 and Threshold to 3.0

Step 2: Configure Network Firewall Settings

TCP Port 5000

Enable remote access to KX II-101-V2 by allowing network and firewall communication on TCP Port 5000.

Alternatively, configure KX II-101-V2 to use a different TCP port, and allow that port network and firewall communication.

TCP Port 443

Allow access to TCP Port 443 (Standard HTTPS) so you can access KX II-101-V2 via a web browser.

TCP Port 80

Allow access to TCP Port 80 (Standard HTTP) to enable automatic redirection of HTTP requests to HTTPS.

Step 3: Connect the Equipment

Power

The KX II-101-V2 is powered by a 100-240V AC input and 5VDC output power adaptor that is included with the device.

For standard AC power, plug the included AC power adaptor into the Power port and plug the other end into a nearby AC power outlet.

Network

Connect a standard Ethernet cable from the network port labeled LAN to an Ethernet switch, hub or router.

The LAN LEDs that appear above the Ethernet connection indicate Ethernet activity.

The yellow one blinks while the KX II-101-V2 is in use, indicating IP traffic at 10 Mbps.

The green light indicates a 100 Mbps connection speed.

Target Server

Use either the PS/2 or USB to connect to the target.

Before connecting, configure your target server's video to a supported resolution.

Use the USB connection if you are using virtual media or Absolute Mouse Mode.

The following items are in each of the connection diagrams that follow:

A - KX II-101-V2

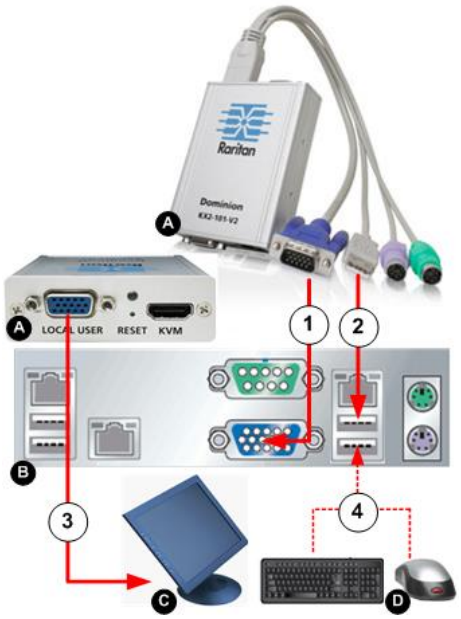
B - Target server

C - Local monitor **Optional**

D - Local mouse and keyboard **Optional**

USB Configuration

Note: If you are using virtual media, you must use the USB connection.



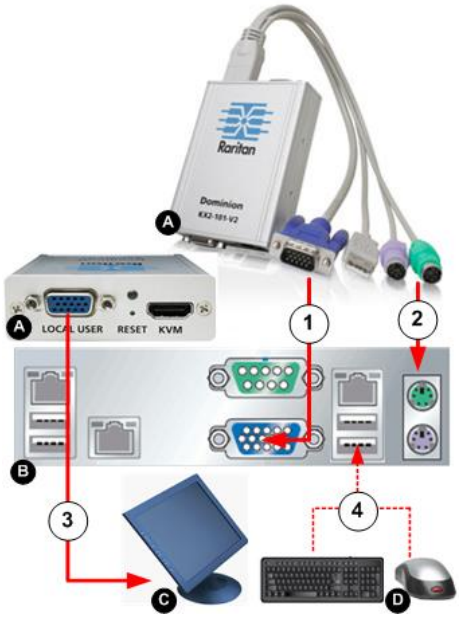
To configure the KX II-101-V2 for use with a USB target server:

1. Use the attached video cable to connect the KX II-101-V2 to the target video port.
2. Connect the USB connector of the KVM cable to the KX II-101-V2 and to a USB port on the target server.

3. Connect a monitor to the KX II-101-V2 Local User Port if you need to use the local video. **Optional**
4. Connect the USB keyboard and mouse directly to the target. **Optional**

PS/2 Configuration

Note: If you are using virtual media, you must use the USB connection.



To configure the KX II-101-V2 for use with a PS/2 target server:

1. Use the attached video cable to connect the KX II-101-V2 to the target video port.
2. Connect the PS/2 connector of the KVM cable to a PS/2 port on the target.
3. Connect a monitor to the KX II-101-V2 Local User Port if you need to use the local video. **Optional**

If you have a PS/2 keyboard and mouse, use a PS/2 to USB adapter (not included) to connect to the USB port of the target directly. **Optional**

Admin Port

Use the Admin port to do the following:

- Configure and manage the device with a terminal emulation such as HyperTerminal program on your PC.
- Configure and manage a power strip (requires an adapter, not included).
- Connect an external modem to dial into the device.

Use one DB9M to DB9F straight serial cable to connect from the KX II-101-V2 to the serial port on your PC or laptop.

The serial port communication settings should be configured as follows:

- 115,200 Baud
- 8 data bits
- 1 stop bit
- No parity
- No flow control

Local User Port

The Local User port serves as a pass-through to the target server video so that it connects directly to the monitor.

The local keyboard and mouse must be connected to target server directly.

For USB configurations, only the local video connects to the target server at the Local User port.

The keyboard and mouse connect directly to the target server using USB ports.

Step 4: Configure the KX II-101-V2

Note: You must use a crossover cable between the KX II-101-V2 and client if you are configuring the KX II-101-V2 through a web browser.

For the following steps, you must change the default password and assign the KX II-101-V2 its IP address at the Local Console.

All other steps can be performed either from the Local Console, or the KX II-101-V2 Remote Console via a supported web browser using the KX II-101-V2's default IP address.

Jave™ 1.7 is required to use the Java-based Java-based KX II-101-V2 Virtual KVM Client and Multi-Platform Client (MPC).. Java 1.8.0_40 is required to use the VKCS.

You can also use a terminal emulation program to configure the KX II-101-V2. See ***Configure the KX II-101-V2 Using a Terminal Emulation Program (Optional)*** (on page 23).

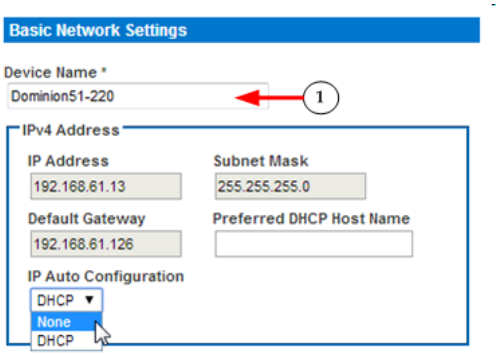
Change the Default Password

The first time you start the KX II-101-V2 device, you are required to change the default password.

1. Once the unit has booted, enter the default username `admin` and password `raritan`.
2. Click Login.
3. Enter the old password `raritan`, then enter and reenter a new password.
4. Passwords can be up to 64 characters in length consisting of English alphanumeric characters and special characters.
5. Click Apply.
6. Click OK on the Confirmation page.

Assign the KX II-101-V2 a Device Name

Open the Device Network Settings page in the KX II-101-V2 Remote client



1. Specify a meaningful Device Name for your KX II-101-V2 device.

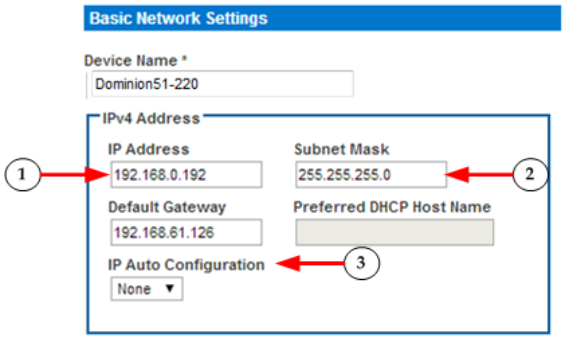
   Up to 32 alphanumeric and valid special characters, no spaces between characters.

Next, configure the IP address and DNS settings.

Configure the IPv4 Settings

In the IPv4 section, enter or select the appropriate IPv4-specific network settings.

Note that the same IP addresses cannot be applied to LAN1 and LAN2.



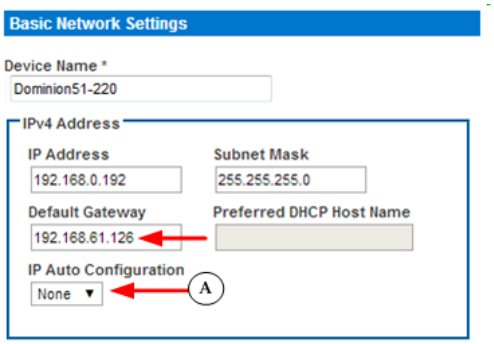
1. Enter the IP Address, if needed.

   The default IP address is 192.168.0.192.

2. Enter the Subnet Mask.

   The default subnet mask is 255.255.255.0.

3. Set up your IP Auto Configuration by selecting - None or DHCP



- *None* - for a static IP.

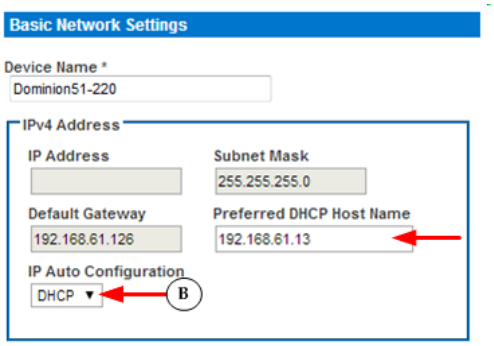
  Default selection and **recommended** option.

  If *None* is selected, you must manually specify the network parameters by entering the Default Gateway.

  Leaving the selection set to *None* -

  - Lets you set the network parameters since KX II-101-V2 is part of your network infrastructure and you most likely do not want its IP address to change frequently.
  - Ensure redundant failover capabilities should the primary Ethernet port or the switch/router to which it is connected fail.

    If a failure occurs, KX II-101-V2 fails over to the secondary network port with the same IP address so there is no interruption.



- DHCP - Dynamic Host Configuration Protocol is used by networked computers (clients) to obtain unique IP addresses and other parameters from a DHCP server. This means the IP address is automatically assigned by a DHCP server and you do not need to provide a subnet mask or default gateway.

  Enter the Preferred DHCP Host Name if DHCP is selected from the IP Auto Configuration drop-down.

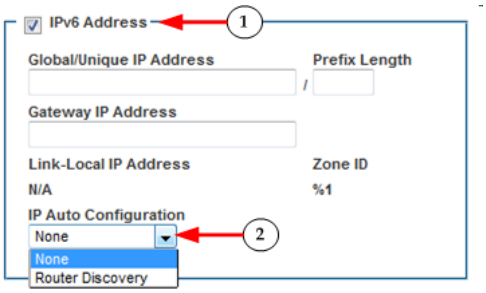
  Up to 63 characters.

Next -

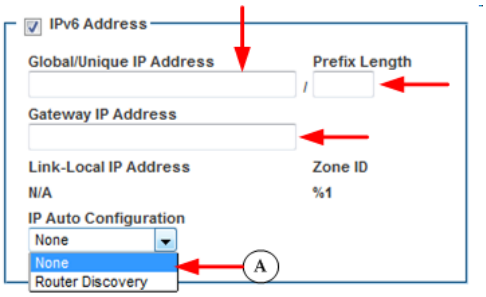
- ***Configure the IPv6 Settings*** (on page 19)
- ***Configure the DNS Settings*** (on page 20)

Configure the IPv6 Settings

If using IPv6, enter or select the appropriate IPv6-specific network settings in the IPv6 section.



1. Select the IPv6 checkbox to activate the fields in the section and enable IPv6 on the device.
2. Select an IP Auto Configuration option - None or Router Discovery.

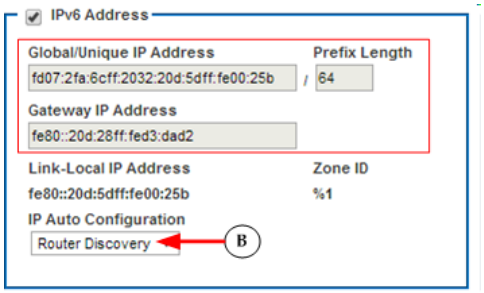


   a. *None* - for a static IP. Default selection. **Recommended** option.

      If *None* is selected, you must manually specify -

- Global/Unique IP Address - this is the IP address assigned to KX II-101-V2
- Prefix Length - this is the number of bits used in the IPv6 address
- Gateway IP Address

See IPv4 for details on leaving the selection set to *None*.



b. *Router Discovery* - Select this option to locate a Global or Unique IPv6 address instead of a Link-Local subnet.

Once located, the address is automatically applied.

The following additional, read-only information appears in this section -

- Link-Local IP Address

  This address is automatically assigned to the device. The address is used for neighbor discovery or when no routers are present. Read-Only

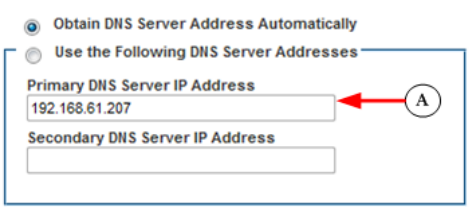
- Zone ID

Identifies the device the address is associated with. Read-OnlyNext - ***Configure the DNS Settings*** (on page 20)

Configure the DNS Settings

1. Do one of the following to configure DNS -
   - "Obtain DNS Server Address Automatically"

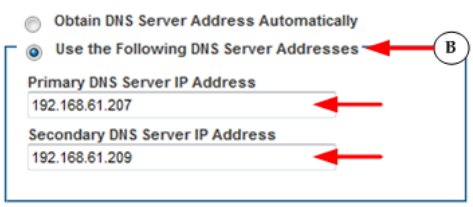
- "Use the Following DNS Server Addresses"



a. Select "Obtain DNS Server Address Automatically" if DHCP is selected.

   The DNS information is then provided by the DHCP server that is used.

   When finished, click OK. Your KX II-101-V2 device is now network accessible.



b. Enter the following information if the "Use the Following DNS Server Addresses" is selected -

   - Primary DNS Server IP Address
   - Secondary DNS Server IP Address

   These secondary DNS address is used if the primary DNS server connection is lost due to an outage.

   Even if DHCP is selected in the IPv4 section, enter the primary and secondary addresses since these addresses are used to connect to the DNS server.

When finished, click OK.

Connect to a Switch

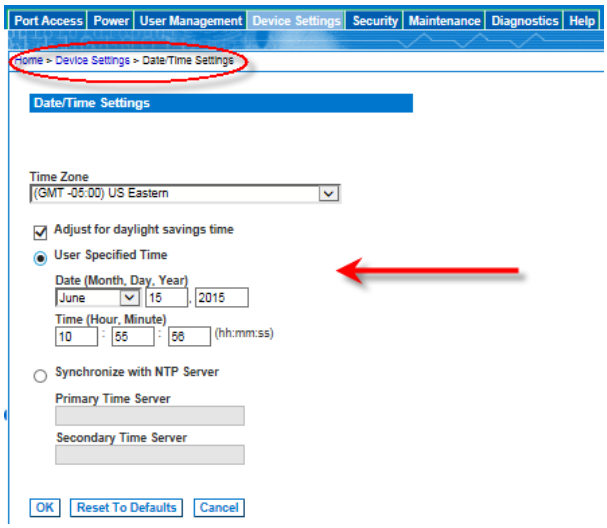
Once KX II-101-V2 is network accessible, remove the crossover cable and connect the KX II-101-V2 to the switch using a Cat5 cable.

Configure Date/Time Settings

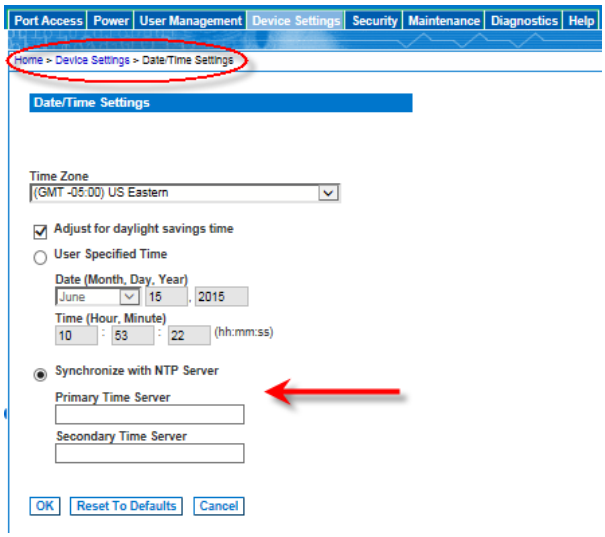
The date and time settings impact SSL certificate validation if LDAPS is enabled. Configuring the date and time also ensures your audit logs will be timestamped correctly.

There are two ways to do this:

- Manually set the date and time.



- Synchronize the date and time with a Network Time Protocol (NTP) server.



1. Choose Device Settings > Date/Time to open the Date/Time Settings page.
2. Choose your time zone from the Time Zone drop-down list.

3. Adjust for daylight savings time by checking the "Adjust for daylight savings time" checkbox.
4. Choose the method to use to set the date and time:
   - User Specified Time - use this option to input the date and time manually. For the User Specified Time option, enter the date and time. For the time, use the hh:mm format (using a 24-hour clock).
   - Synchronize with NTP Server - use this option to synchronize the date and time with the Network Time Protocol (NTP) Server.

     For the Synchronize with NTP Server option:
     - Enter the IP address of the Primary Time server.
     - Enter the IP address of the Secondary Time server. **Optional**

   Note: If DHCP is selected for the Network Settings on the Network page, the NTP server IP address is automatically retrieved from the DHCP server by default. Manually enter the NTP server IP address by selecting the Override DHCP checkbox.
5. Click OK.

Configure the KX II-101-V2 Using a Terminal Emulation Program (Optional)

You can use the Admin serial console with a terminal emulation program like HyperTerminal to set the following configuration parameters for the KX II-101-V2:

- IP address
- Subnet mask address
- Gateway address
- IP autoconfiguration
- LAN speed
- LAN interface mode

To use a terminal emulation program with the KX II-101-V2, you must first connect the included RS-232 serial cable from the Admin port on the KX II-101-V2 to a COM port on your PC.

For demonstration purposes, the terminal emulation program described in this section is HyperTerminal. You can use any terminal emulation program.

To use a terminal emulation program to configure the KX II-101-V2:

1. Connect to the Admin port on the KX II-101-V2 and the COM1 port on the PC.
2. Launch the terminal emulation program you want to use to configure the KX II-101-V2.

3. Set the following port settings in the terminal emulation program:
   - Bits per second - 115200
   - Data bits - 8
   - Parity - None
   - Stop bits - 1
   - Flow control - None
4. Connect to the KX II-101-V2. The login page opens.
5. Type the administrator username and press Enter. You are prompted to enter your password.
6. Type the default administrator name *admin* and press Enter. You are promoted to enter your password.
7. At the Admin Port > prompt, type *config* and press Enter.
8. At the Config > prompt, type *network* and press Enter.
9. To configure new network settings, at the Network prompt, type *interface* followed by one of the following commands and its appropriate argument (option), then press Enter.

Command	Argument	Options

ipauto	none|dhcp	none - Enables you to manually specify an IP address for the device. You must follow this option with the ip command and the IP address, as shown in the following example:
		`interface ipauto none ip 192.168.50.12`
		dhcp - Automatically assign an IP address to the device on startup.
		`interface ipauto dhcp`

ip	IP address	The IP address to assign to the device. To manually set an IP address for the first time, this command must be used with the ipauto command and the none option. See ipauto for information. After you have manually assigned an IP address once, you can use the ip command

Command	Argument	Options
		alone to change the IP address.
mask	subnet mask	Command column should be "interface" interface | ip | ... interface | mask | The subnet mask IP address interface | gw | The gateway IP address `interface | mode | ....`
gw	IP address	The gateway IP address
mode	mode	The Ethernet mode. You have the following choices: ▪ auto - Automatically sets speed and interface mode based on the network. ▪ 10hdx - 10 MB/s, half duplex. ▪ 10fdx - 10 MB/s, full duplex ▪ 100hdx - 100 MB/s, half duplex ▪ 100fdx - 100 MB/s, full duplex

When you have successfully changed a setting, you see a confirmation message like the following:

```
Admin Port > config

Admin Port > Config > network

Admin Port > Config > Network > interface ipauto none
ip 192.168.50.126

Network interface configuration successful.
```

When you are finished configuring the KX II-101-V2, type *logout* at the command prompt and press Enter. You are logged out of the command line interface.

Allow Pop-Ups

Regardless of the browser you are using, you must allow pop-ups in order to launch the KX II-101-V2 Remote Console.

Security Warnings and Validation Messages

When logging in to KX II-101-V2, security warnings and application validation message may appear.

These include -

- Java™ security warnings and requests to validate KX II-101-V2

  See ***Java Validation and Access Warning*** (on page 27) and ***Installing a Certificate*** (on page 28)

- Additional security warnings based on your browser and security settings

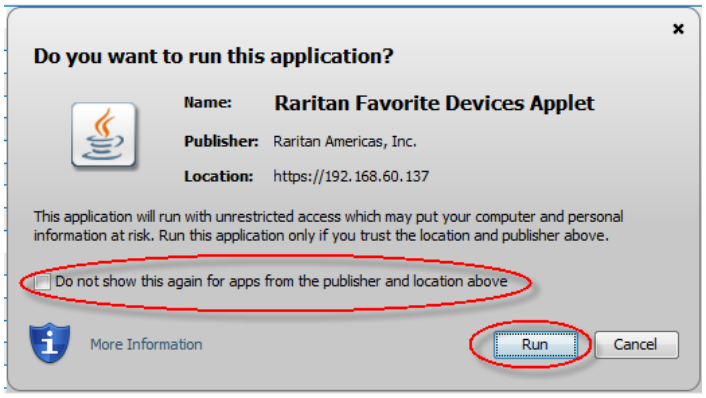
  See ***Additional Security Warnings*** (on page 27)

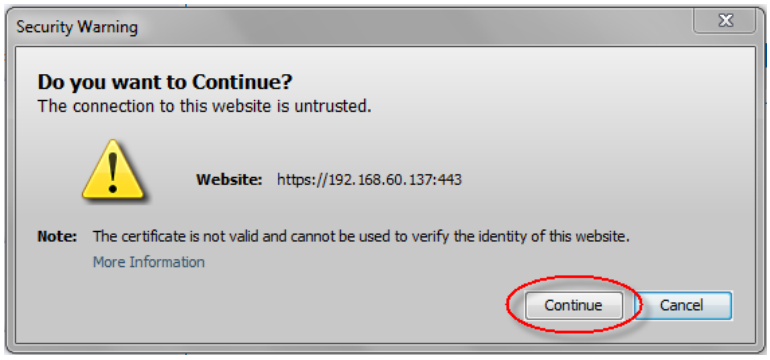
Java Validation and Access Warning

When logging in to KX II-101-V2, Jave™ 1.7 prompts you to validate KX II-101-V2, and to allow access to the application.

Raritan recommends installing an SSL certificate in each KX II-101-V2 device in order to reduce Java warnings, and enhance security.

See ***SSL Certificates*** (on page 165)





Additional Security Warnings

Even after an SSL certificate is installed in the KX II-101-V2, depending on your browser and security settings, additional security warnings may be displayed when you log in to KX II-101-V2.

It is necessary to accept these warnings to launch the KX II-101-V2 Remote Console.

Reduce the number of warning messages during subsequent log ins by checking the following options on the security and certificate warning messages:

- In the future, do not show this warning
- Always trust content from this publisher

Installing a Certificate

You may be prompted by the browser to accept and validate the KX II-101-V2's SSL certificate.

Depending on your browser and security settings, additional security warnings may be displayed when you log in to KX II-101-V2.

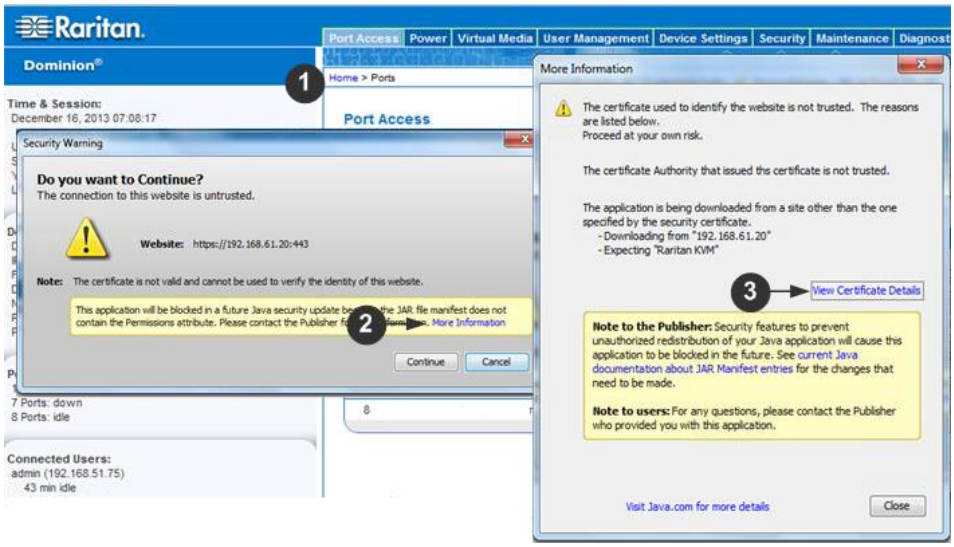
It is necessary to accept these warnings to launch the KX II-101-V2 Remote Console. For more information, see ***Security Warnings and Validation Messages*** (on page 26).

Two sample methods on how to install an SSL Certificate in the browser are provided here, both using Microsoft Internet Explorer 8® and Windows 7®.

Specific methods and steps depend on your browser and operating system. See your browser and operating system help for details.

Example 1: Import the Certificate into the Browser

In this example, you import the Certificate into the browser.



1. Open an IE browser, then log in to KX II-101-V2.
2. Click More Information on the first Java™ security warning.
3. Click View Certificate Details on the More Information dialog. You are prompted to install the certificate. Follow the wizard steps.

Note: If you are not prompted by the browser, manually select Tools > Internet Options to open the Internet Options dialog.

1. Click the Content tab.
2. Click Certificates.

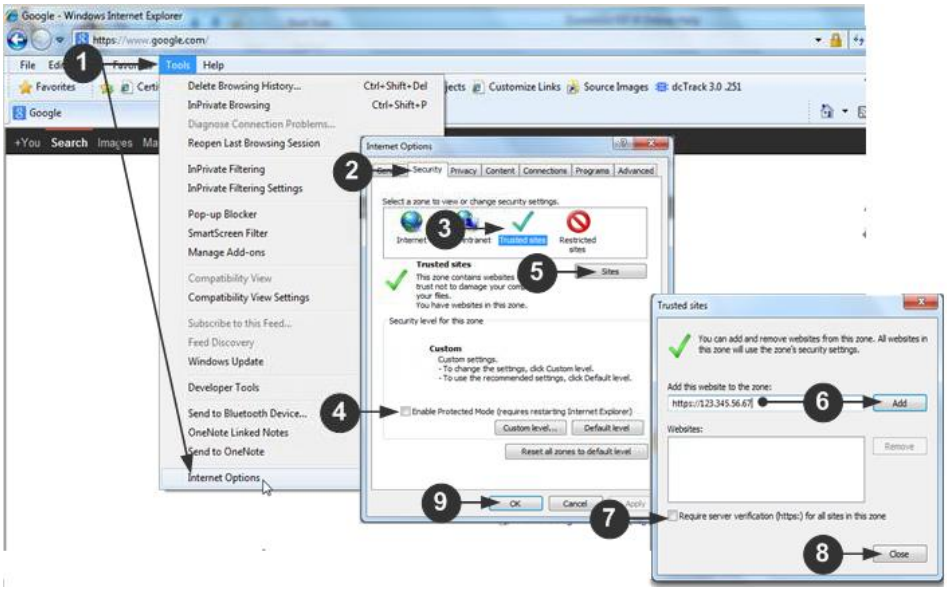
   The Certificate Import Wizard opens and walks you through each step.

   - File to Import - Browse to locate the Certificate
   - Certificate Store - Select the location to store the Certificate
3. Click Finish on the last step of the Wizard.

   The Certificate is imported. Close the success message.
4. Click OK on the Internet Options dialog to apply the changes, then close and reopen the browser.

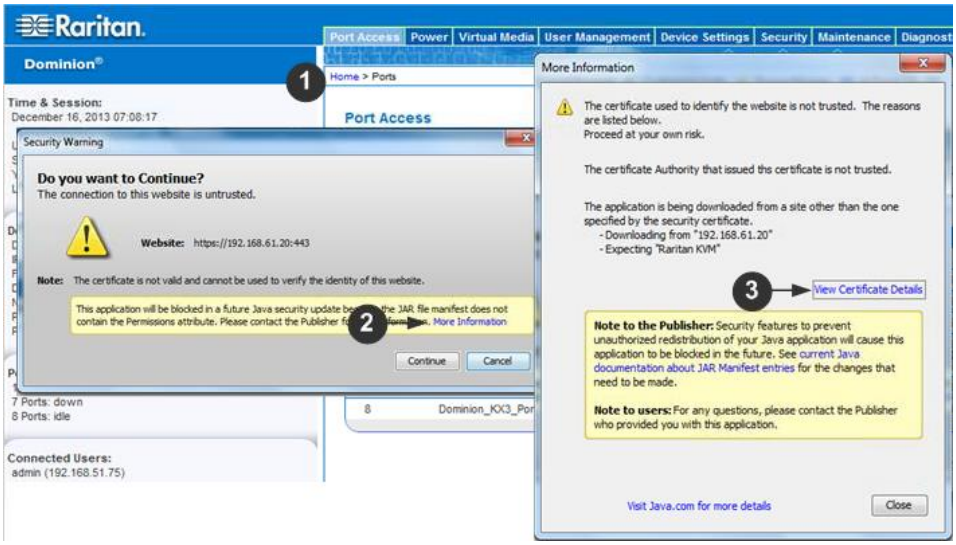
Example 2: Add the KX II-101-V2 to Trusted Sites and Import the Certificate

In this example, the KX II-101-V2's URL is added as a Trusted Site, and the Self Signed Certificate is added as part of the process.



1. Open an IE browser, then select Tools > Internet Options to open the Internet Options dialog
2. Click the Security tab.
3. Click on Trusted Sites.
4. Disable Protected Mode, and accept any warnings.
5. Click Sites to open the Trusted Sites dialog.
6. Enter the KX II-101-V2 URL, then click Add.
7. Deselect server verification for the zone (if applicable).
8. Click Close.
9. Click OK on the Internet Options dialog to apply the changes, then close and reopen the browser.

Next, import the Certificate.



1. Open an IE browser, then log in to KX II-101-V2.
2. Click More Information on the first Java™ security warning.
3. Click View Certificate Details on the More Information dialog. You are prompted to install the certificate. Follow the wizard steps.

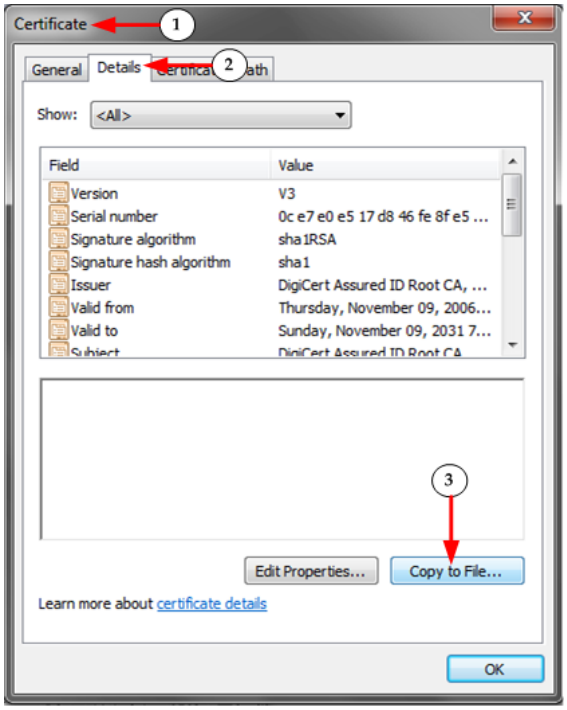
   For details see, ***Example 1: Import the Certificate into the Browser*** (on page 28).

Converting a Binary Certificate to a Base64-Encoded DER Certificate (Optional)

KX II-101-V2 requires an SSL certificate in either Base64-Encoded DER format or PEM format.

If you are using an SSL certificate in binary format, you cannot install it.

However, you can convert your binary SSL certificate.



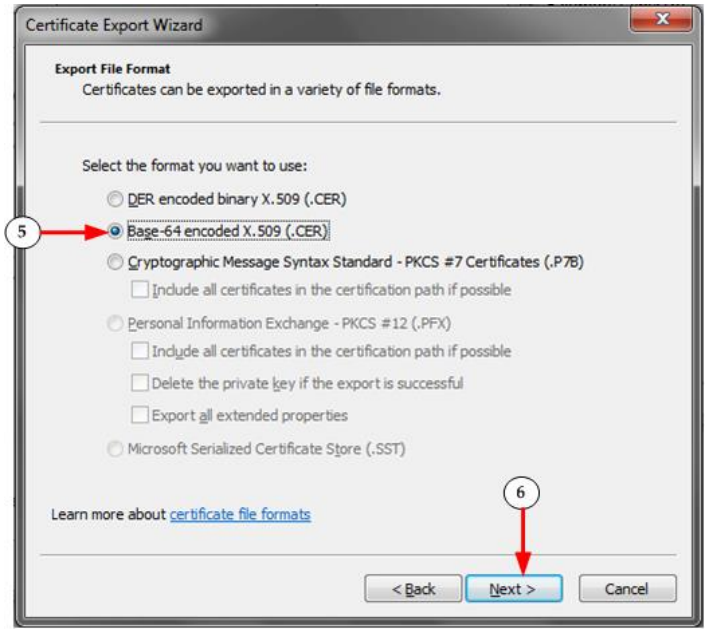
1. Locate the DEGHKVM0001.cer binary file on your Windows machine.

   Double-click on the DEGHKVM0001.cer file to open its Certificate dialog.

2. Click the Detail tab.

3. Click "Copy to File...".

4. The Certificate Export Wizard opens. Click Next to start the Wizard.



5. Select "Base-64 encoded X.509" in the second Wizard dialog.
6. Click Next to save the file as a Base-64 encoded X.509.

You can now install the certificate on your KX II-101-V2.

Chapter 3 Working with Target Servers

In This Chapter

KX II-101-V2 Remote Console Interface

The KX II-101-V2 Remote Console is a browser-based graphical user interface that allows you to log into KVM target servers and serial targets connected to the KX II-101-V2 and to remotely administer the KX II-101-V2.

The KX II-101-V2 Remote Console provides a digital connection to your connected KVM target servers. When you log into a KVM target server using the KX II-101-V2 Remote Console, an Active KVM Client or Virtual KVM Client window opens.

Note: If you are using Internet Explorer® 7, you may run into permission issues when trying to connect to a target server. To avoid this, do the following:

1. In Internet Explorer, click Tools > Internet Options to open the Internet Options dialog.

2. In the "Temporary Internet files" section, click Settings. The Settings dialog opens.

3. In the "Check for newer versions of stored pages" section, select Automatically.

4. Click OK to apply the settings.

Enable Direct Port Access

Direct port access enables you to access the KX II-101-V2 Remote Client without having to go through the usual login page. With direct port access enabled, you can define an URL to navigate directly to the Port Access page.

To enable direct port access:

1. Launch the KX II-101-V2 Remote Console.
2. Choose Device Settings > Device Services. The Device Services page opens.

3. Select the Enable Direct Port Access via URL checkbox.
4. Click Save.

To define a direct port access URL:

- Define a URL with the IP address, user name, password, and if necessary, port number of the KX II-101-V2.

  The format for a direct port access URL is:

  https://*IP address*/dpa.asp?username=*username*&password=*password*

Tip: Define a direct port access URL once, then save it in your web browser as a bookmark to make reusing it easier.

KX II-101-V2 Console Navigation

The KX II-101-V2 Console interfaces provide many methods for navigation and making your selections.

To select an option (use any of the following):

- Click on a tab. A page of available options appears.
- Hover over a tab and select the appropriate option from the menu.
- Click the option directly from the menu hierarchy displayed (breadcrumbs).

To scroll through pages longer than the screen:

- Use Page Up and Page Down keys on your keyboard.
- Use the scroll bar on the right.

Left Panel

The left panel of the KX II-101-V2 interface contains the following information.

Note that some information is conditional - meaning it is displayed based on your role, features being used and so on. Conditional information is noted here.

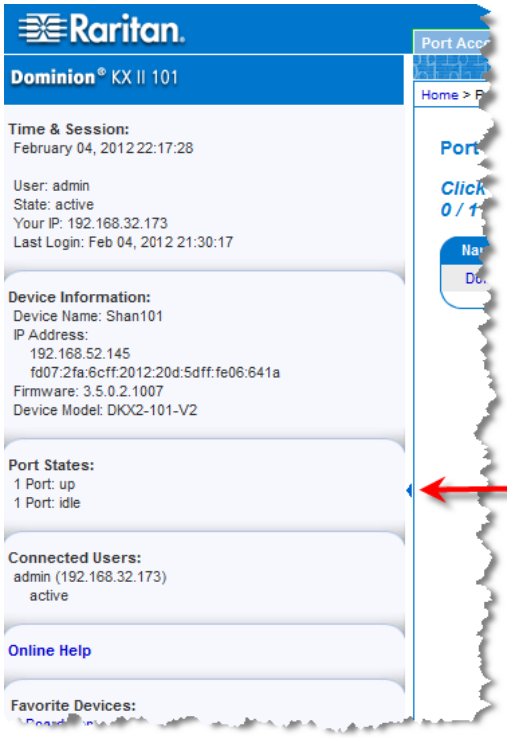
Information	Description	When displayed?
Time & Session	The current date and time.	Always
User	Username of current user	Always

Information	Description	When displayed?
State	The current state of the application, either idle or active. If idle, the application tracks and displays the time the session has been idle.	Always
Your IP	The IP address used to access the KX II-101-V2.	Always
Last Login	The last login date and time of current user.	Always
Under CC-SG Management	The IP address of the CC-SG device managing the KX II-101-V2.	When the KX II-101-V2 is being managed by CC-SG
Device Information	Information specific to the KX II-101-V2 you are using.	Always
Device Name	Name assigned to the device.	Always
IP Address	The IP address of the KX II-101-V2.	Always IPv4, and IPv6 if it is configured
Firmware	Current version of firmware.	Always
Device Model	Model of the KX II-101-V2	Always
Port States	The statuses of the port being used by the KX II-101-V2.	Always
Connect Users	The users, identified by their username and IP address, who are currently connected to the KX II-101-V2.	Always
Online Help	Links to online help.	Always
FIPS Mode	FIPS Mode: EnabledSSL Certificate: FIPS Mode Compliant	When FIPS is enabled
Favorite Devices	See ***Managing Favorites*** (on page 39)	When enabled

The left panel can be collapsed in order to increase the display area of the page.

To collapse the left panel:

- Click on the blue, left-facing arrow located approximately halfway down the left side of the panel. Once the panel is collapsed, click the blue arrow again to expand it.



Port Access Page

After successfully logging in to the KX II-101-V2 Remote Console, the Port Access page appears. This page lists the KX II-101-V2 port, the connected KVM target server, and its availability. The Port Access page provides access to the KVM target server connected to the KX II-101-V2. A KVM target server is a server that you want to control through the KX II-101-V2 device. They are connected to the KX II-101-V2 ports at the back of the device.

To use the Port Access page:

1. From the KX II-101-V2 Remote Console, click the Port Access tab. The Port Access page opens. The following information is displayed:
   - Port Name - The name of the KX II-101-V2 port. Initially, this is set to Dominion_KX2_101_Port1 but you can change the name to something more descriptive. When you click a Port Name link, the Port Action Menu appears.
   - Availability - The Availability can be Idle, Connected or Busy.

2. Click the Port Name of the target server you want to access. The Port Action Menu appears. See ***Port Action Menu*** (on page 38) for details on available menu options.
3. Choose the desired menu command from the Port Action Menu.

Port Action Menu

When you click a Port Name in the Port Access list, the Port Action menu appears.

Choose the desired menu option for that port to execute it. Note that only currently available options, depending on the port's status and availability, are listed in the Port Action menu.

- Connect - Creates a new connection to the target server. For the KX II-101-V2 Remote Console, a new Virtual KVM Client (VKC) page appears.
- Disconnect - Disconnects this port and closes the Virtual KVM Client page for this target server
- This menu item is available only when the port status is up and connected, or up and busy.
- Power On - Powers on the target server through the associated outlet

  This option is visible only when there are one or more power associations to the target, and when the user has permission to operate this service.
- Power Off - Powers off the target server through the associated outlets

  This option is visible only when there are one or more power associations to the target, when the target power is on (port status is up), and when user has permission to operate this service.
- Power Cycle - Power cycles the target server through the associated outlets
- This option is visible only when there are one or more power associations to the target, and when the user has permission to operate this service.

Managing Favorites

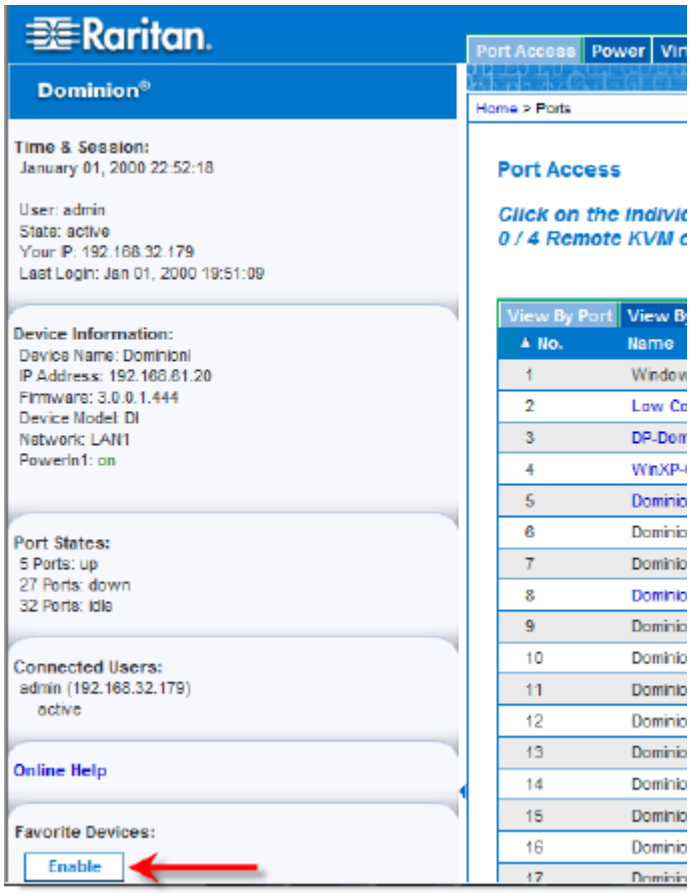
A Favorites feature is provided so you can organize and quickly access the devices you use frequently.

The Favorite Devices section is located in the lower left sidebar of the Port Access page and provides the ability to:

- Create and manage a list of favorite devices
- Quickly access frequently-used devices
- List your favorites either by Device Name, IP Address, or DNS hostname
- Discover KX II-101-V2 devices on its subnet
- Retrieve discovered KX II-101-V2 devices from the connected Dominion device

Enable Favorites

- Click Enable in the Favorite Devices section of the left panel of the KX II-101-V2 interface.



Access and Display Favorites

To access a favorite KX II-101-V2 devices:

- Click on a KX II-101-V2 listed beneath Favorite Devices in the left of the Remote Console.

To display favorite KX II-101-V2s by name:

- Click Display by Name.

To display favorite KX II-101-V2s by IP Address:

- Click Display by IP.

To display favorite KX II-101-V2s by the host name:

- Click Display by Host Name.

Discovering Devices on the Local Subnet

This option discovers KX II-101-V2 devices on your local subnet. This is the subnet where the KX II-101-V2 Remote Console is running.

These devices can be accessed directly from this page or you can add them to your list of favorites.

To discover devices on the local subnet:

1. Choose Manage > Discover Devices - Local Subnet. The Discover Devices - Local Subnet page appears.
2. Choose the appropriate discovery port:
   - To use the default discovery port, select the Use Default Port 5000 checkbox.
   - To use a different discovery port:
   a. Deselect the Use Default Port 5000 checkbox.
   b. Type the port number in the Discover on Port field.

c. Click Save.

3. Click Refresh. The list of devices on the local subnet is refreshed.

To add devices to your Favorites List:

1. Select the checkbox next to the device name/IP address.
2. Click Add.

To access a discovered device:

- Click the device name or IP address for that device. A new browser opens to that device.

Discovering Devices on the KX II-101-V2 Subnet

This option discovers KX II-101-V2 devices on the device subnet. This is the subnet of the KX II-101-V2 device's IP address.

You can access these devices directly from the Subnet page or add them to your list of favorites.

This feature allows multiple KX II-101-V2 devices to interoperate and scale automatically.

The KX II-101-V2 Remote Console automatically discovers the KX II-101-V2 devices, and any other Raritan device, in the subnet of the KX II-101-V2.

To discover devices on the device subnet:

1. Choose Manage > Discover Devices - KX II-101-V2 Subnet.

The Discover Devices - KX II-101-V2 Subnet page appears.

2. Click Refresh. The list of devices on the local subnet is refreshed.

To add devices to your Favorites List:

1. Select the checkbox next to the device name/IP address.
2. Click Add.

To access a discovered device:

- Click the device name or IP address for that device. A new browser opens to that device.

Logging Out

To quit the KX II-101-V2:

- Click Logout in the upper right-hand corner of the page.

Note: Logging out also closes any open Virtual KVM Client and serial client sessions.

KX II-101-V2 Client Applications

The following client applications can be used in the KX II-101-V2:

- Active KVM Client (AKC) - Default client. Windows only. Microsoft .NET® 4.0 (or later) is required to use KX II-101-V2 with the Microsoft Windows®-based Active KVM Client (AKC). See ***Active KVM Client (AKC) Help*** (on page 76)
- Virtual KVM Client (VKC) -Web-based client that requires Java 1.7 or higher. VKC cannot be launched from Chrome version 45 or later and Firfox version 42 or later. If you must use these browsers, VKCS is recommended . CS. See ***Virtual KVM Client (VKC) Help*** (see "***Virtual KVM Client (VKC and VKCs) Help***" on page 43)
- Standalone Virtual KVM Client (VKCS) - A standalone version of VKC. Java 1.8.40 or later is required. See ***Virtual KVM Client (VKC) Help*** (see "***Virtual KVM Client (VKC and VKCs) Help***" on page 43)
- Multi-Platform Client (MPC) - Can be launched from a Web browser, or installed as a standalone application. Java 1.7 or higher is required. See ***Multi-Platform Client*** (see "***Multi-Platform Client (MPC)***" on page 43).
- Mobile KVM Client (MKC) - Mobile access is provided through Mobile Access Client, which requires the use of CommandCenter Secure Gateway (CC-SG). See Mobile KVM Client (MKC) Help

Jave™ 1.7 is required to use the Java-based Java-based KX II-101-V2 Virtual KVM Client and Multi-Platform Client (MPC).. Java 1.8.0_40 is required to use the VKCS.

Microsoft .NET® 4.0 (or later) is required to use KX II-101-V2 with the Microsoft Windows®-based Active KVM Client (AKC).

Multi-Platform Client (MPC)

Raritan Multi-Platform Client (MPC) is a graphical user interface for the Raritan product lines, providing remote access to target servers connected to Raritan KVM over IP devices. For details on using MPC, see the **KVM and Serial Access Clients Guide** available on Raritan's website on the same page as the user guide. Instructions on launching MPC are provided there.

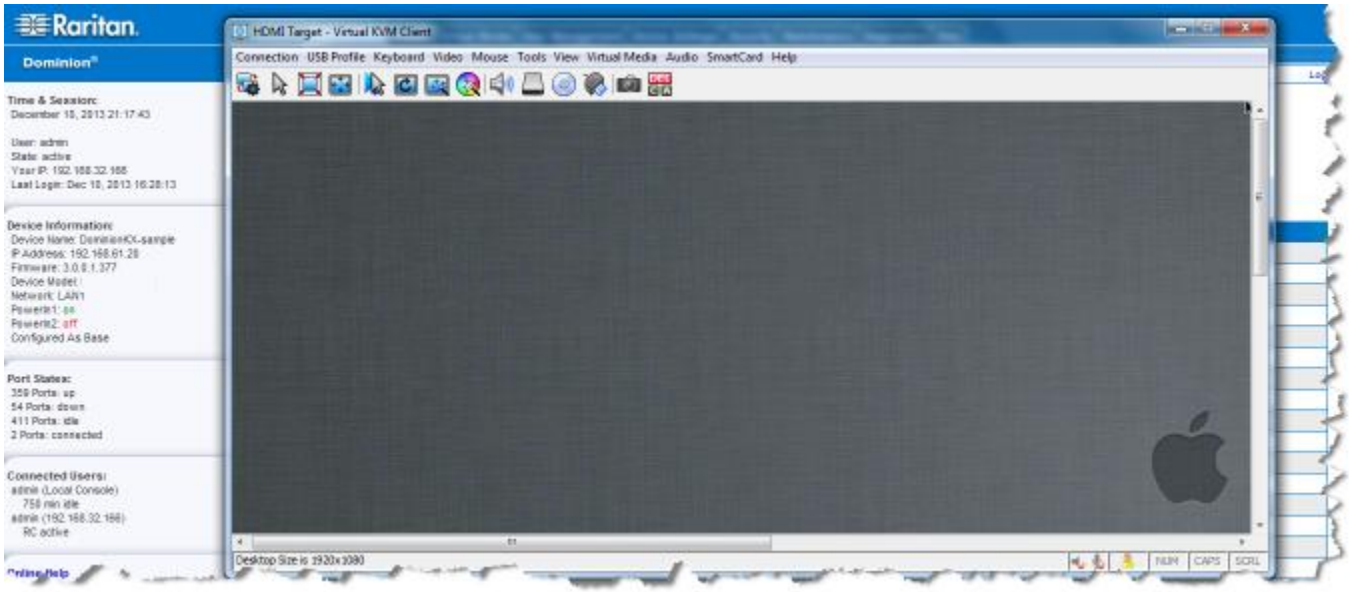
Please note this client is used by various Raritan products. As such, references to other products may appear in this section of help.

Virtual KVM Client (VKC) and Active KVM Client (AKC)

Virtual KVM Client (VKC and VKCs) Help

Overview

Whenever you access a target server from the Port Access page of KX II-101-V2 the Remote Console, a Virtual KVM Client (VKC) window opens.



There is one Virtual KVM Client for each target server connected.

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

IMPORTANT: Refreshing your browser closes the Virtual KVM Client connection.

Recommended Minimum Virtual KVM Client (VKC) Requirements

Raritan recommends the Virtual KVM Client (VKC) machines meet the following minimum requirements for use with KX III.

- Client machine with either a -
  - 'modern' dual-core CPU for a single connections, or
  - 'modern' quad core CPU for two or more simultaneous connections
- 4GB of RAM
  - VKC requires 50MB of RAM per connection

Virtual KVM Client Java Requirements

Jave™ 1.7 is required to use the Java-based Virtual KVM Client. Java 1.8.0_40 is required to use the VKCS.

Note: VKC cannot be launched from Edge, Chrome 45 or later, Firefox 42 or later. VKCS is recommended for these browsers.

Proxy Server Configuration for Use with VKC, VKCS, and AKC

When the use of a Proxy Server is required, a SOCKS proxy must also be provided and configured on the remote client PC.

Note: If the installed proxy server is only capable of the HTTP proxy protocol, you cannot connect.

To configure the SOCKS proxy:

1. On the remote client PC, select Control Panel > Internet Options.
   a. On the Connections tab, click 'LAN settings'. The Local Area Network (LAN) Settings dialog opens.
   b. Select 'Use a proxy server for your LAN'.
   c. Click Advanced. The Proxy Settings dialog opens.
   d. Configure the proxy servers for all protocols.

      IMPORTANT: Do not select 'Use the same proxy server for all protocols'.

      Note: The default port for a SOCKS proxy (1080) is different from HTTP proxy (3128).

   e. Click OK at each dialog to apply the settings.
2. Next, configure the proxy settings for the Java™ applets:
   a. Select Control Panel > Java.

b. On the General tab, click Network Settings. The Network Settings dialog opens.

c. Select "Use Proxy Server".

d. Click Advanced. The Advanced Network Settings dialog opens.

e. Configure the proxy servers for all protocols.

IMPORTANT: Do not select 'Use the same proxy server for all protocols'.

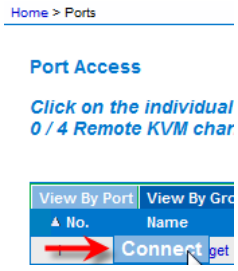
Note: The default port for a SOCKS proxy (1080) is different from HTTP proxy (3128).

Connect to a Target from Virtual KVM Client (VKC), Standalone VKC (VKCs), or Active KVM Client (AKC)

Once you have logged on to the KX II-101-V2 Remote Console, access target servers via the Virtual KVM Client (VKC), Standalone VKC (VKCs), or Active KVM Client (AKC).

To connect to an available server:

1. On the Port Access page, click on the port name of the target server you want to connect to. The Port Action menu opens.
2. Click Connect.



See Port Action Menu for details on additional available menu options.

Configuring Connection Properties

VKC, VKCS, and AKC support connection property management.

Connection properties manage streaming video performance over remote connections to target servers.

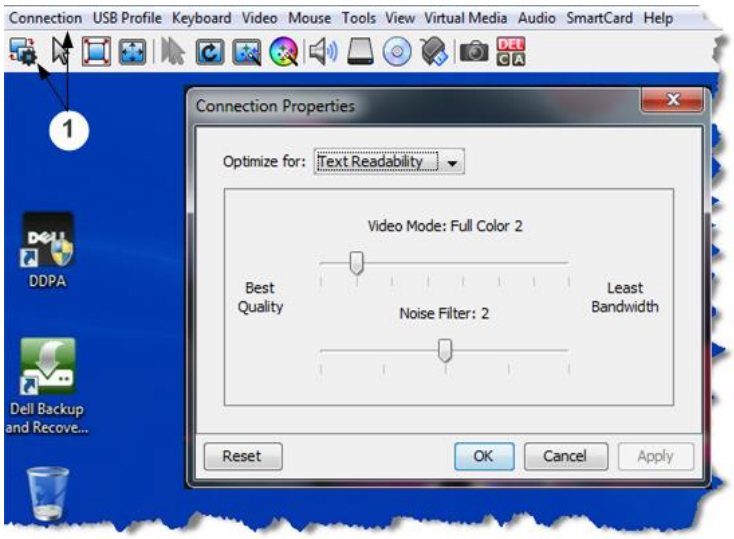
The properties are applied only to your connection - they do not impact the connection of other users accessing the same target servers via VKC or AKC.

If you make changes to connection properties, they are retained by VKC and AKC.

Access Connection Properties

To access connection properties:

1	Click Connection > Properties, or click the Connection... icon to open the Connection Properties dialog.



About Connection Properties

The Virtual KVM Client (VKC) and Active KVM Client (AKC) support connection property management.

Connection properties manage streaming video performance over remote connections to target servers.

The properties are applied only to your connection - they do not impact the connection of other users accessing the same target servers via VKC or AKC.

If you make changes to connection properties, they are retained by VKC and AKC.

Default Connection Property Settings - Optimized for Best Performance

The KX II-101-V2 comes configured to provide optimal performance for the majority of video streaming conditions.

Default connection settings are:

- Optimized for: Text Readability - video modes are designed to maximize text readability.

  This setting is ideal for general IT and computer applications, such as performing server administration.

- Video Mode - defaults to Full Color 2.

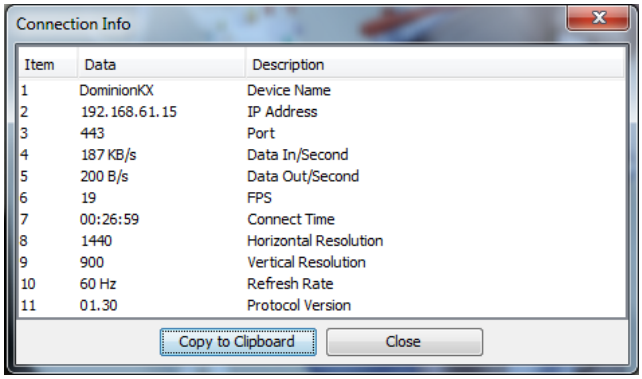
  Video frames transmit in high-quality, 24-bit color. This setting is suitable where a high-speed LAN is used.

- Noise Filter - defaults to 2.

  The noise filter setting does not often need to be changed.

Click Reset on the Connection Properties dialog at any time to return to the default settings.

Tip: Use the Connection Information dialog to monitor the connection in real-time. See **Access and Copy Connection Information** *(on page 50)*



Optimize for: Selections

Text Readability

Text Readability is designed to provide video modes with lower color depth but text remains readable. Greyscale modes are even available when applying lower bandwidth settings.

This setting is ideal when working with computer GUIs, such as server administration.

When working in full color video modes, a slight contrast boost is provided, and text is sharper.

In lower quality video modes, bandwidth is decreased at the expense of accuracy.

Color Accuracy

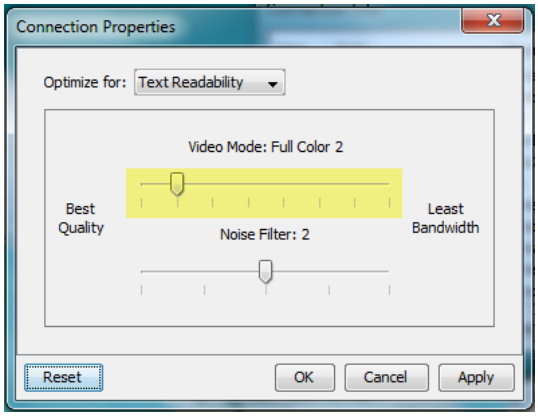
When Color Accuracy is selected, all video modes are rendered in full 24-bit color with more compression artifacts.

This setting applies to viewing video streams such as movies or other broadcast streams.

In lower quality video modes, sharpness of fine detail, such as text, is sacrificed.

Video Mode

The Video Mode slider controls each video frame's encoding, affecting video quality, frame rate and bandwidth.



In general, moving the slider to the left results in higher quality at the cost of higher bandwidth and, in some cases, lower frame rate.

Moving the slider to the right enables stronger compression, reducing the bandwidth per frame, but video quality is reduced.

In situations where system bandwidth is a limiting factor, moving the video mode slider to the right can result in higher frame rates.

When Text Readability is selected as the Optimized setting, the four rightmost modes provide reduced color resolution or no color at all.

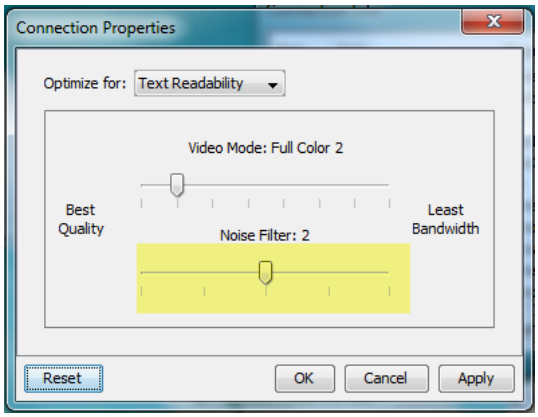
These modes are appropriate for administration work where text and GUI elements take priority, and bandwidth is at a premium.

Click Reset on the Connection Properties dialog at any time to return to the default settings.

Noise Filter

Unless there is a specific need to do so, do not change the noise filter setting. The default setting is designed to work well in most situations.

The Noise Filter controls how much interframe noise is absorbed by the KX II-101-V2.



Moving the Noise Filter slider to the left lowers the filter threshold, resulting in higher dynamic video quality. However, more noise is likely to come through, resulting in higher bandwidth and lower frame rates.

Moving the slider to the right raises the threshold, allows less noise and less bandwidth is used. Video artifacts may be increased.

Moving the noise filter to the right may be useful when accessing a computer GUI over severely bandwidth-limited connections.

Click Reset on the Connection Properties dialog at any time to return to the default settings.

Connection Information

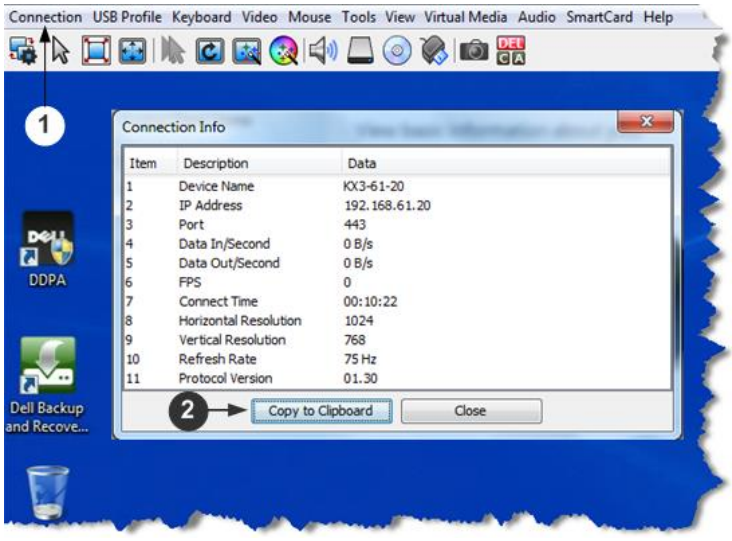
Open the Connection Information dialog for real-time connection information on your current connection, and copy the information from the dialog as needed.

See ***Configuring Connection Properties*** (on page 45)

Current connection information:

- Name of the KX II-101-V2
- IP address of the KX II-101-V2
- Port - The KVM communication TCP/IP port used to access KX II-101-V2.
- Data In/Second - Data rate received from the KX II-101-V2
- Data Out/Second - Data rate sent to the KX II-101-V2.
- Connect Time - The duration of the current connection.
- FPS - Video frames per second transmitted received from the KX II-101-V2.
- Horizontal Resolution - The target server horizontal resolution.
- Vertical Resolution - The target server vertical resolution.
- Refresh Rate - Refresh rate of the target server.
- Protocol Version - Raritan communications protocol version.

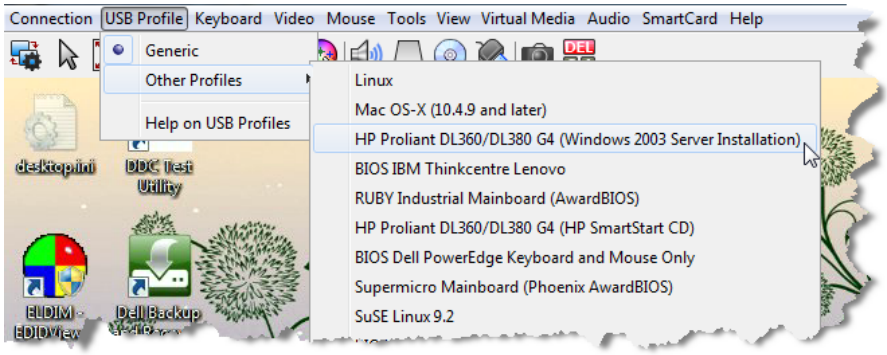
Access and Copy Connection Information



Steps	
1	Click Connection > Info... to open the Connection Info dialog.
2	Click Copy to Clipboard. Paste the information as needed.

USB Profiles

Set a USB profile for a target server from the Virtual KVM Client (VKC) by clicking USB Profile in the menu, then selecting from the menu choices.



Select a USB profile that best applies to the KVM target server.

For example, if the server is running Windows® operating system, it would be best to use the Generic profile.

Or, to change settings in the BIOS menu or boot from a virtual media drive, depending on the target server model, a BIOS profile may be more appropriate.

For details on USB profiles, see **USB Profiles** - **Overview**.

Keyboard

Send Ctrl+Alt+Del Macro

Due to its frequent use, a Ctrl+Alt+Delete macro is preprogrammed.

Selecting Keyboard > Send Ctrl+Alt+Del, or 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, 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.

Send LeftAlt+Tab (Switch Between Open Windows on a Target Server)

Select Keyboard > Send LeftAlt + Tab to switch between open windows on the target server or KVM switch you are connected to.

Setting CIM Keyboard/Mouse Options

To access the DCIM-USBG2 setup menu:

1. Put the mouse focus on a window such as Note Pad (Windows® operating system) or an equivalent.
2. Select Set CIM Keyboard/Mouse options. This is the equivalent of sending the Left-Control and Num Lock to the target. The CIM setup menu options are then displayed.
3. Set the language and mouse settings.
4. Exit the menu to return to normal CIM functionality.

Send Text to Target

To use the Send Text to Target function for the macro:

1. Click the Keyboard > Send Text to Target. The Send Text to Target dialog appears.
2. Enter the text you want sent to the target.

   Note: Non-English characters are not supported by the Send Text to Target function.

3. If the target uses a US/International keyboard layout, select the "Target system is set to the US/International keyboard layout" checkbox.
4. Click OK.

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 (VKC) is running (your client PC).

Macros are stored on the client PC and are PC-specific. Therefore, if you use another PC, you cannot 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 Virtual KVM Client (VKC) cannot be used in Active KVM Client (AKC) or vice versa.

Build a New Macro

To build a macro:

1. Click Keyboard > Keyboard Macros. The Keyboard Macros dialog appears.
2. Click Add. The Add Keyboard Macro dialog appears.
3. Type a name for the macro in the Keyboard Macro Name field. This name appears in the Keyboard menu after it is created.
4. 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**
5. In the Keys to Press drop-down list, select each key you would like to use to emulate the keystrokes that is used to perform the command. Select the keys in the order by which they are to be pressed. After each selection, select Add Key. As each key is selected, it appears in the Macro Sequence field and a Release Key command is automatically added after each selection.

   For example, create a macro to close a window by selecting Left Ctrl + Esc. This appears in the Macro Sequence box as follows:

   Press Left Alt

   Press F4

   Esc

   Release F4

   Esc

   Release Left Alt
6. Review the Macro Sequence field to be sure the macro sequence is defined correctly.
   a. To remove a step in the sequence, select it and click Remove.

b. To change the order of steps in the sequence, click the step and then click the up or down arrow buttons to reorder them as needed.

7. 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.
8. Click Close to close the Keyboard Macros dialog. The macro now appears on the Keyboard menu in the application.
9. Select the new macro on the menu to run it or use the keystrokes you assigned to the macro.

Import Macros

To import macros:

1. Choose Keyboard > Import Keyboard Macros to open the Import Macros dialog. Browse to the folder location of the macro file.
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 is displayed and the import terminates once OK is selected.
   b. If the import fails, an error dialog appears and a message regarding why the import failed is displayed. 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 to begin the import.
   a. If a duplicate macro is found, the Import Macros dialog appears. Do one of the following:

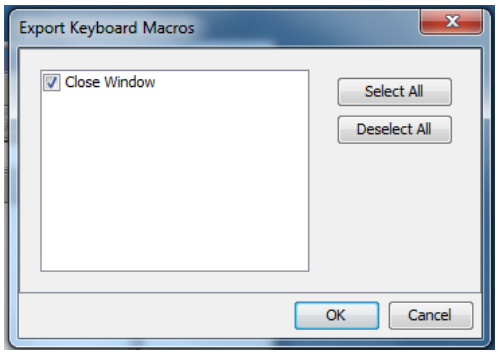
- Click Yes to replace the existing macro with the imported version.
- Click Yes to All to replace the currently selected and any other duplicate macros that are found.
- Click No to keep the original macro and proceed to the next macro
- Click No to All keep the original macro and proceed to the next macro. Any other duplicates that are found are 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 appears. Enter a new name for the macro in the field and click OK. The dialog closes and the process proceeds. If the name that is entered is a duplicate of a macro, an alert appears and you are required to enter another name for the macro.

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

The macros are then imported. If a macro is imported that contains a hot key that already exists, the hot key for the imported macro is discarded.

Export Macros

1. Choose 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. An "Export Keyboard Macros to" dialog is displayed. Locate and select the macro file. By default, the macro exists on your desktop.
4. Select the folder to save the macro file to, enter a name for the file and click Save. If the macro already exists, you receive an alert message.

5. Select Yes to overwrite the existing macro or No to close the alert without overwriting the macro.

Video Properties

Refreshing the Screen

The Refresh Screen command forces a refresh of the video screen. Video settings can be refreshed automatically in several ways:

- The Refresh Screen command forces a refresh of the video screen.
- The Auto-sense Video Settings command automatically detects the target server's video settings.
- The Calibrate Color command calibrates the video to enhance the colors being displayed.

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

To refresh the video settings, do one of the following:

- Choose Video > Refresh Screen, or click the Refresh Screen button  in the toolbar.

Auto-Sense Video Settings

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

To automatically detect the video settings:

- Choose Video > Auto-sense Video Settings, or click the Auto-Sense Video Settings button  in the toolbar.

  A message stating that the auto adjustment is in progress appears.

Calibrating 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.

Note: When color is successfully calibrated, the values are cached and reused each time you switch to the target. Changes to the brightness and contrast in Video Settings are not cached. Changing resolution resets the video to the cached values again. You can clear the cached values in Video > Clear Video Settings Cache. See **Clear Video Settings Cache** *(on page 57).*

To calibrate the color:

- Choose Video > Calibrate Color, or click the Calibrate Color button  in the toolbar.

  The target device screen updates its color calibration.

Clear Video Settings Cache

You can clear the video settings cache to delete old settings that do not apply anymore, such as when a target server is replaced. When you clear the video settings cache, the server automatically does a video auto-sense and color calibration. The new values are cached and reused when the target is accessed again.

To clear the video settings cache:

Choose Video > Clear Video Settings Cache in the toolbar.

Adjusting Video Settings

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

To change the video settings:

1. Choose Video > Video Settings to open the Video Settings dialog.
2. Adjust the following settings as required. As you adjust the settings the effects are immediately visible:

   a. PLL Settings

   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 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.

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

c. Brightness Red - Controls the brightness of the target server display for the red signal.

d. Brightness Green - Controls the brightness of the green signal.

e. Brightness Blue - Controls the brightness of the blue signal.

f. Contrast Red - Controls the red signal contrast.

g. Contrast Green - Controls the green signal.

h. 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: 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.

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

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

3. Select Automatic Color Calibration to enable this feature. This setting does not apply to KX3-808 target servers.

4. Select the video sensing mode. This setting does not apply to KX3-808 target servers when connecting to the target, but will apply if you change resolution.

   - Best possible video mode

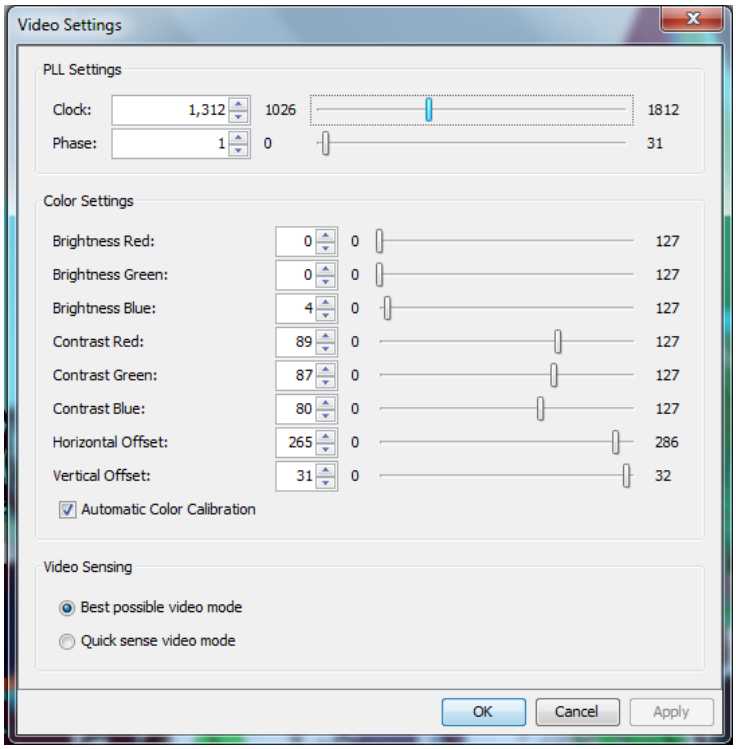
     The device will perform the full Auto Sense process when switching targets or target resolutions. Selecting this option calibrates the video for the best image quality.

   - 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.

5. Click OK to apply the settings and close the dialog. Click Apply to apply the settings without closing the dialog.

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.



Screenshot from Target Command (Target Screenshot)

You are able to take a screenshot of a target server using the Screenshot from Target server command. If needed, save this screenshot to a file location of your choosing as a bitmap, JPEG or PNG file.

To take a screenshot of the target server:

1. Select Video > Screenshot from Target, or click the Target Screenshot button  on the toolbar.
2. In the Save dialog, choose the location to save the file, name the file, and select a file format from the 'Files of type' drop-down.
3. Click Save to save the screenshot.

Mouse Options

You can operate in either single mouse mode or dual mouse mode.

When in a dual mouse mode, and provided the option is properly configured, the mouse cursors align.

When controlling a target server, the Remote Console displays two mouse cursors - one belonging to your KX II-101-V2 client workstation, and the other belonging to the target server.

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

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

When the mouse pointer lies within the 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 can use single mouse mode, and view only the target server's pointer.

You can toggle between these two modes (single mouse and dual mouse).

Dual Mouse Modes

Absolute Mouse Synchronization

In this mode, absolute coordinates are used to keep the client and target cursors in synch, even when the target mouse is set to a different acceleration or speed.

This mode is supported on servers with USB ports and is the default mode for virtual media CIMs.

Absolute Mouse Synchronization requires the use of a virtual media CIM -

- D2CIM-VUSB
- D2CIM-DVUSB
- D2CIM-DVUSB-DVI
- D2CIM-DVUSB-HDMI
- D2CIM-DVUSB-DP

To enter Absolute Mouse Synchronization:

- Choose Mouse > Absolute from the KVM client.

The black USB connector on the DVUSB CIMs are used for the keyboard and mouse. The gray connector is used for virtual media.

Keep both USB plugs of the CIM connected to the device.

The device may not operate properly if both plugs are not connected to the target server.

Intelligent Mouse Mode

In Intelligent Mouse mode, the device can detect the target mouse settings and synchronize the mouse cursors accordingly, allowing mouse acceleration on the target. Intelligent mouse mode is the default for non-VM targets.

Enter Intelligent Mouse Mode

To enter intelligent mouse mode:

- Choose Mouse > Intelligent.

Intelligent Mouse Synchronization Conditions

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).
- When using the intelligent mouse synchronization function, having a file icon or folder icon located in the upper left corner of your desktop may cause the function not to work properly. To be sure to avoid any problems with this function, Raritan recommends you do not have file icons or folder icons in the upper left corner of your desktop.

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.

Standard Mouse Mode

Standard Mouse mode uses a standard mouse synchronization algorithm. The algorithm determines relative mouse positions on the client and target server.

In order for the client and target mouse cursors to stay in synch, mouse acceleration must be disabled. Additionally, specific mouse parameters must be set correctly.

To enter Standard Mouse mode:

- Choose Mouse > Standard.

Mouse Synchronization Tips

If you have an issue with mouse synchronization:

1. Verify that the selected video resolution and refresh rate are among those supported by the device. The KVM Client Connection Info dialog displays the actual values that the device is seeing.
2. Force an auto-sense by clicking the KVM Client auto-sense button.
3. If that does not improve the mouse synchronization (for Linux, UNIX, and Solaris KVM target servers):
   a. Open a terminal window.
   b. Enter the following command: `xset mouse 1 1`
   c. Close the terminal window.
4. Click the "KVM Client mouse synchronization" button  .

Synchronize Your Mouse

In dual mouse mode, the Synchronize Mouse command forces realignment of the target server mouse cursor with the client mouse cursor.

To synchronize the mouse cursors, do one of the following:

- Click the Synchronize Mouse button  in the KVM client toolbar, or select Mouse > Synchronize Mouse from the menu bar.

Note: This option is available only in Standard and Intelligent mouse modes.

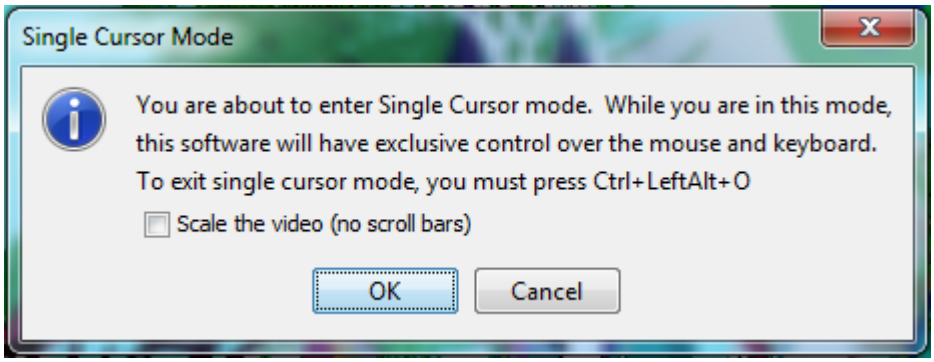
Single Mouse Mode

Single Mouse mode uses only the target server mouse cursor; the client mouse cursor no longer appears onscreen.

Note: Single mouse mode does not work on Windows or Linux targets when the client is running on a Virtual Machine.

To enter single mouse mode, do one the following:

- Choose Mouse > Single Mouse Cursor.
- Click the Single/Double Mouse Cursor button in the toolbar.



To exit single mouse mode:

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

Tool Options

General Settings

To set the tools options:

1. Click Tools > Options. The Options dialog appears.
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)
- French (Belgium)
- Norwegian (Norway)
- Portuguese (Portugal)
- Danish (Denmark)
- Swedish (Sweden)
- German (Switzerland)
- Hungarian (Hungary)
- Spanish (Spain)
- Italian (Italy)
- Slovenian
- Translation: French - US
- Translation: French - US International

In AKC, the keyboard type defaults to the local client, so this option does not apply.

4. Configure hotkeys:
   - Exit Full Screen Mode - Hotkey.

     When you enter Full Screen mode, the display of the target server becomes full screen and acquires the same resolution as the target server.

     This is the hot key used for exiting this mode.
   - Exit Single Cursor Mode - Hotkey.

     When you enter single cursor mode, only the target server mouse cursor is visible.

     This is the hot key used to exit single cursor mode and bring back the client mouse cursor.
   - Disconnect from Target - Hotkey.

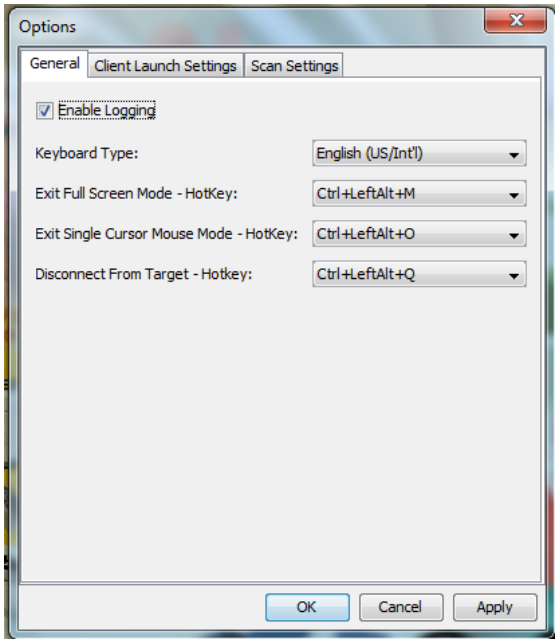
     Enable this hotkey to allow users to quickly disconnect from the target.

   For hotkey combinations, the application does not allow you to assign the same hotkey combination to more than one function.

   For example, if Q is already applied to the Disconnect from Target function, it won't be available for the Exit Full Screen Mode function.

   Further, if a hotkey is added to the application due to an upgrade and the default value for the key is already in use, the next available value is applied to the function instead.

5. Click OK.



Keyboard Limitations

Turkish Keyboards

If using a Turkish keyboard, you must connect to a target server through the Active KVM Client (AKC). It is not supported by other Raritan clients.

Slovenian Keyboards

The < key does not work on Slovenian keyboards due to a JRE limitation.

Language Configuration on Linux

Because the Sun JRE on Linux has problems generating the correct Key Events 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
French	Keyboard Indicator
German	System Settings (Control Center)
Japanese	System Settings (Control Center)
UK	System Settings (Control Center)
Korean	System Settings (Control Center)

Language	Configuration method
Belgian	Keyboard Indicator
Norwegian	Keyboard Indicator
Danish	Keyboard Indicator
Swedish	Keyboard Indicator
Hungarian	System Settings (Control Center)
Spanish	System Settings (Control Center)
Italian	System Settings (Control Center)
Slovenian	System Settings (Control Center)
Portuguese	System Settings (Control Center)

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

Client Launch Settings

Configuring client launch settings allows you to define the screen settings for a KVM session.

To configure client launch settings:

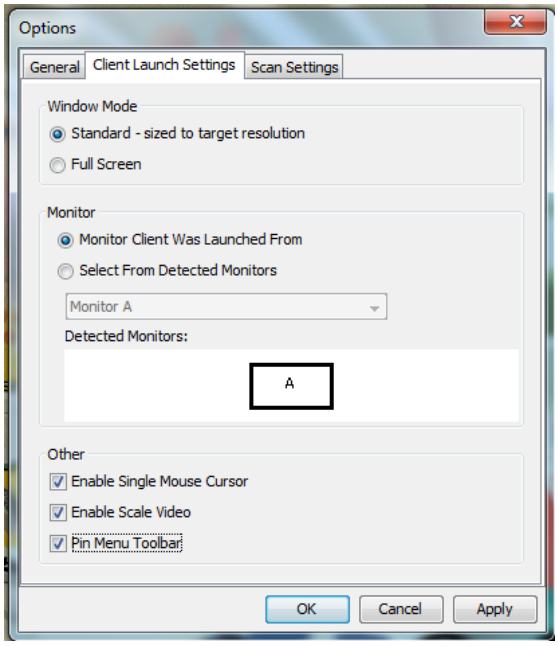
1. Click Tools > Options. The Options dialog appears.
2. Click on the Client Launch Settings tab.
   - To configure the target window settings:
   a. Select 'Standard - sized to target Resolution' to open the window using the target's current resolution. If the target resolution is greater than the client resolution, the target window covers as much screen area as possible and scroll bars are added (if needed).
   b. Select 'Full Screen' to open the target window in full screen mode.
   - To configure the monitor on which the target viewer is launched:
   a. Select 'Monitor Client Was Launched From' if you want the target viewer to be launched using the same display as the application that is being used on the client (for example, a web browser or applet).
   b. Use 'Select From Detected Monitors' to select from a list of monitors that are currently detected by the application. If a previously selected monitor is no longer detected, 'Currently Selected Monitor Not Detected' is displayed.
   - To configure additional launch settings:

a. Select 'Enable Single Cursor Mode' to enable single mouse mode as the default mouse mode when the server is accessed.

b. Select 'Enable Scale Video' to automatically scale the display on the target server when it is accessed.

c. Select 'Pin Menu Toolbar' if you want the toolbar to remain visible on the target when it is in Full Screen mode. By default, while the target is in Full Screen mode, the menu is only visible when you hover your mouse along the top of the screen.

3. Click OK.



Configuring Port Scan Settings in VKC/VKCS and AKC

Configuring port scan options in VKC/VKCS and AKC applies to scanning from the KX III Remote Console.

To configure port scan options for the Local Console, see Configure Local Console Scan Settings

Use the port scanning feature to search for selected targets, and display them in a slide show view, allowing you to monitor up to 32 targets at one time.

You can connect to targets or focus on a specific target as needed. Scans can include standard targets, blade servers, tiered Dominion devices, and KVM switch ports.

Configure scan settings from either the VKC/VKCS or AKC.

See Scanning Ports - Remote Console

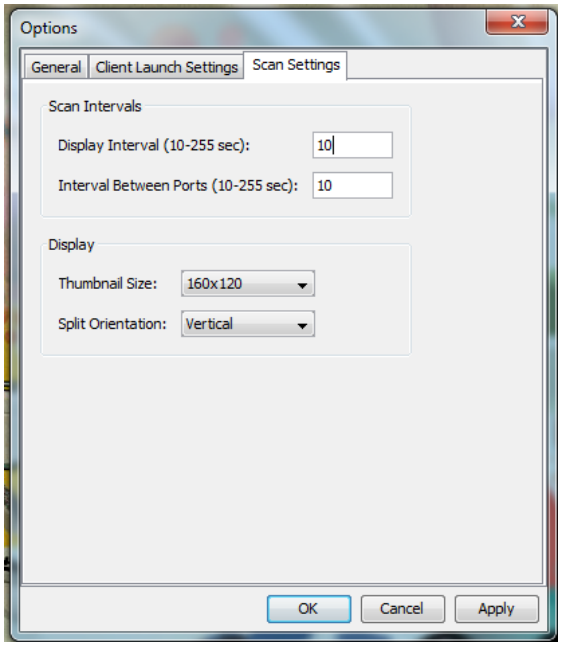
Use the Scan Settings tab to customize the scan interval and default display options.

Configure Port Scan

To set scan settings:

1. Click Tools > Options. The Options dialog appears.
2. Select the Scan Settings tab.
3. In the "Display Interval (10-255 sec):" field, specify the number of seconds you want the target that is in focus to display in the center of the Port Scan window.
4. In the "Interval Between Ports (10 - 255 sec):" field, specify the interval at which the device should pause between ports.
5. In the Display section, change the default display options for the thumbnail size and split orientation of the Port Scan window.

6. Click OK.



Collecting a Diagnostic Snapshot of the Target

Administrators are able to collect a "snapshot" of a target from either the VKC/VKCS or Active KVM Client (AKC).

The "snapshot" function generate log files and image files from the target.

It then bundles these files in a zip file that can be sent to Raritan Technical Support in order to help diagnose technical problems you may be encountering.

The following files are included in the zip file:

- screenshot_image.png

  This is a screenshot of the target that captures a picture of the issue you are experiencing. This feature is operates in the same as the "Screenshot from Target" feature.

- raw_video_image.png:

  A snapshot image created from raw video data. Please note that client's postprocessing is applied, just as if it were a "regular" screen update.

- raw_video_ycbcr420.bin:

  Binary file of the raw snapshot.

- raw_video_ycbcr420.txt:

  Text file containing data used by Raritan to help diagnose issues.

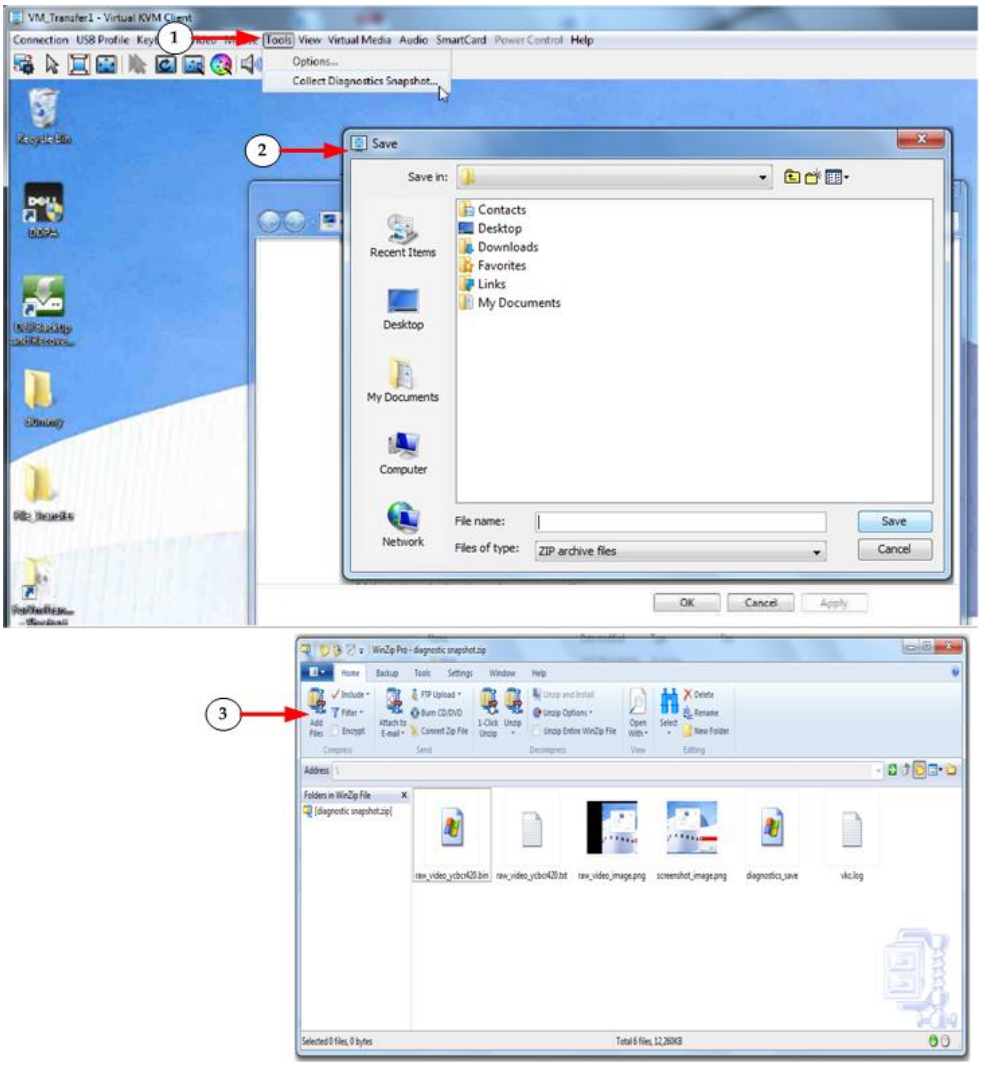
- Log.txt file:

  These are the client logs.

  Note that the logs are included even if you have not enabled information to be captured in them. VKC uses internal memory to capture the information in this case.

Collect a Diagnostic Snapshot from VKC, VKCS, and AKC

To capture a diagnostic snapshot:



Steps	
1	Access a target, and then click Tools > Collect a Diagnostic Snapshot. Several messages are displayed as the information is collected.
2	You are prompted to save the zip file containing the diagnostic files.

3	The zip file containing the diagnostic files that were collecting opens.

View Options

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.

View Status Bar

By default, the status bar is displayed at the bottom of the target window.

To hide the status bar:

- Click View > Status Bar to deselect it.

To restore the status bar:

- Click View > Status Bar to select it.

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.

Full Screen Mode

When you enter Full Screen mode, the target's full screen is displayed and acquires the same resolution as the target server.

The hot key used for exiting this mode is specified in the Options dialog, see ***Tool Options*** (on page 64).

While in Full Screen mode, moving your mouse to the top of the screen displays the Full Screen mode menu bar.

If you want the menu bar to remain visible while in Full Screen mode, enable the Pin Menu Toolbar option from the Tool Options dialog. See ***Tool Options*** (on page 64).

To enter full screen mode:

- Choose View > Full Screen, or click the Full Screen button  .

To exit full screen mode:

- Press the hot key configured in the Tool's Options dialog. The default is Ctrl+Alt+M.

If you want to access the target in full screen mode at all times, you can make Full Screen mode the default.

To set Full Screen mode as the default mode:

1. Click Tools > Options to open the Options dialog.
2. Select Enable Launch in Full Screen Mode and click OK.

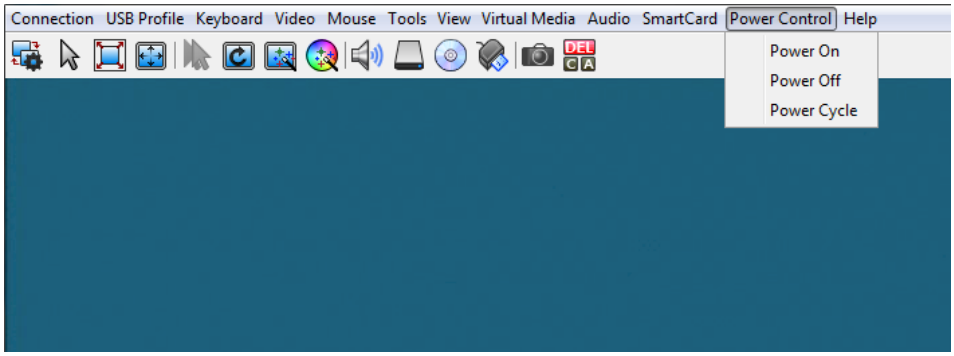
Connect to Virtual Media

See Virtual Media

Power Control Using VKC, VKCS, and AKC

You can power on, power off, and power cycle a target through the outlet it is connected to.

Access the target, and then select a power control option from the Power Control menu.



The menu option is disabled if you do not have permission for power control, and when outlets are not associated with the port.

Version Information - Virtual KVM Client

This menu command provides version information about the Virtual KVM Client, in case you require assistance from Raritan Technical Support.

To obtain version information:

1. Choose Help > About Raritan Virtual KVM Client.
2. Use the Copy to Clipboard button to copy the information contained in the dialog to a clipboard file so it can be accessed later when dealing with support (if needed).

Active KVM Client (AKC) Help

Overview

The Active KVM Client (AKC) is based on Microsoft Windows .NET® technology.

This allows you to run the client in a Windows environments without using the Java® Runtime Environment (JRE), which is required to run Raritan's Virtual KVM Client (VKC).

AKC is the default KX II-101-V2 client on Windows platforms, and it also works with CC-SG.

AKC provides the same features as VKC with the exception of the following:

- Keyboard macros created in AKC cannot be used in VKC
- Direct port access configuration (see Enabling Direct Port Access via URL)
- AKC server certification validation configuration (see ***Prerequisites for Using AKC*** (on page 77))
- AKC automatically loads favorites, VKC does not. See ***Managing Favorites*** (on page 39)

For details on using the features, see ***Virtual KVM Client (VKC) Help*** (see "***Virtual KVM Client (VKC and VKCs) Help***" on page 43).

Recommended Minimum Active KVM Client (AKC) Requirements

Raritan recommends the Active KVM Client (AKC) machines meet the following minimum requirements for use with KX III.

- Client machine with either a -
  - 'modern' dual-core CPU for a single connections, or
  - 'modern' quad core CPU for two or more simultaneous connections
- 4GB of RAM

AKC Supported Microsoft .NET Framework

The Active KVM Client (AKC) requires Windows .NET® version 4.0 or 4.5.

AKC Supported Operating Systems

When launched from Internet Explorer®, the Active KVM Client (AKC) allows you to reach target servers via the KX II-101-V2.

AKC is compatible with the following platforms:

- Windows XP® operating system
- Windows Vista® operating system (up to 64 bit)
- Windows 7® operating system (up to 64 bit)
- Windows 8® operating system (up to 64 bit)
- Windows 10 ® operating system (up to 64 bit)

Note: You must be using Windows 7 if WINDOWS PC FIPs is turned on and you are accessing a target using AKC and a smartcard.

Since .NET is required to run AKC, if you do not have .NET installed or you have an unsupported version of .NET installed, you will receive a message instructing you to check the .NET version.

Note: Raritan recommends Windows XP® operating system users verify you have a working version of .NET 4.0 or 4.5 already installed before you launch AKC. If you do not verify your .NET version is working, you may be prompted to download a file versus receiving the default message to check your .NET version.

AKC Supported Browsers

- Internet Explorer® 10 (and later)
- Chrome on Windows platforms. You must have the Chrome ClickOnce plugin installed.

Prerequisites for Using AKC

Allow Cookies

Ensure the cookies from the IP address of the device that is being accessed are not currently being blocked.

Include KX II-101-V2 IP Address in 'Trusted Sites Zone'

Windows Vista®, Windows® 7 and Windows 2008 server users should ensure that the IP address of the device being accessed is included in their browser's Trusted Sites Zone.

Disable 'Protected Mode'

Windows Vista®, Windows® 7 and Windows 2008 server users should ensure that Protected Mode is not on when accessing the Raritan device.

Enable AKC Download Server Certificate Validation

If the Raritan device (or CC-SG) administrator has enabled the Enable AKC Download Server Certificate Validation option:

- Administrators must upload a valid certificate to the device or generate a self-signed certificate on the device. The certificate must have a valid host designation.
- Each user must add the CA certificate (or a copy of self-signed certificate) to the Trusted Root CA store in their browser.

Proxy Server Configuration for Use with VKC, VKCS, and AKC

When the use of a Proxy Server is required, a SOCKS proxy must also be provided and configured on the remote client PC.

Note: If the installed proxy server is only capable of the HTTP proxy protocol, you cannot connect.

To configure the SOCKS proxy:

1. On the remote client PC, select Control Panel > Internet Options.
   a. On the Connections tab, click 'LAN settings'. The Local Area Network (LAN) Settings dialog opens.
   b. Select 'Use a proxy server for your LAN'.
   c. Click Advanced. The Proxy Settings dialog opens.
   d. Configure the proxy servers for all protocols.

      IMPORTANT: Do not select 'Use the same proxy server for all protocols'.

      Note: The default port for a SOCKS proxy (1080) is different from HTTP proxy (3128).

   e. Click OK at each dialog to apply the settings.
2. Next, configure the proxy settings for the Java™ applets:
   a. Select Control Panel > Java.
   b. On the General tab, click Network Settings. The Network Settings dialog opens.
   c. Select "Use Proxy Server".
   d. Click Advanced. The Advanced Network Settings dialog opens.
   e. Configure the proxy servers for all protocols.

      IMPORTANT: Do not select 'Use the same proxy server for all protocols'.

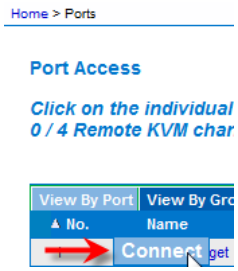
Note: The default port for a SOCKS proxy (1080) is different from HTTP proxy (3128).

Connect to a Target from Virtual KVM Client (VKC), Standalone VKC (VKCs), or Active KVM Client (AKC)

Once you have logged on to the KX II-101-V2 Remote Console, access target servers via the Virtual KVM Client (VKC), Standalone VKC (VKCs), or Active KVM Client (AKC).

To connect to an available server:

1. On the Port Access page, click on the port name of the target server you want to connect to. The Port Action menu opens.
2. Click Connect.



See Port Action Menu for details on additional available menu options.

Chapter 4 Virtual Media

In This Chapter

Overview

All KX II-101-V2 models support virtual media. Virtual media extends KVM capabilities by enabling target servers to remotely access media from a client PC and network file servers.

With this feature, media mounted on client PCs and network file servers are 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.

Each KX II-101-V2 comes equipped with virtual media to enable remote management tasks using the widest variety of CD, DVD, USB, internal and remote drives, and images.

Virtual media sessions are secured using 128 or 256 bit AES, or RC4 encryption.

Prerequisites for Using Virtual Media

KX II-101-V2 Virtual Media Prerequisites

- For users requiring access to virtual media, the KX II-101-V2 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.
- A USB connection must exist between the device and the target server.
- If you want to use PC-Share, Security Settings 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.

Remote PC VM Prerequisites

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

Note: If you are using Microsoft Vista or Windows 7, disable User Account Control or select Run as Administrator when starting Internet Explorer. To do this, click the Start Menu, locate IE, right-click and select Run as Administrator.

Target Server VM Prerequisites

- KVM target servers must support USB connected drives.
- KVM target servers running Windows 2000 must have all of the recent patches installed.
- USB 2.0 ports are both faster and preferred.

Mounting Local Drives

This option mounts an entire drive, which means 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.

Notes on Mounting Local Drives

KVM target servers running the Windows XP® 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.

Supported Tasks Via Virtual Media

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

- Transferring files
- Running diagnostics
- Installing or patching applications
- Complete installation of the operating system

***Important: Once you are connected to a virtual media drive, do not change mouse modes in the KVM client if you are performing file transfers, upgrades, installations or other similar actions. Doing so may cause errors on the virtual media drive or cause the virtual media drive to fail.**

Supported Virtual Media Types

The following virtual media types are supported for Windows®, Mac® and Linux™ clients:

- Internal and external hard drives
- Internal and USB-mounted CD and DVD drives
- USB mass storage devices
- PC hard drives
- ISO images (disk images)

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

Conditions when Read/Write is Not Available

Virtual media Read/Write is not available in the following situations:

- For Linux® and Mac® clients
- 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

Number of Supported Virtual Media Drives

With the virtual media feature, you can mount up to two drives (of different types) that are supported by the USB profile currently applied to the target. 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 as long as the USB profile supports it.

To use virtual media, 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.

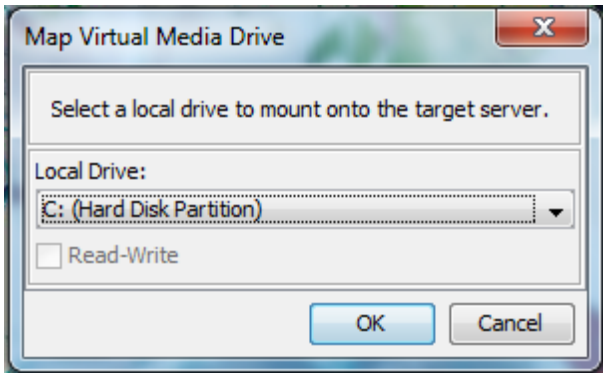
Connecting and Disconnecting from Virtual Media

Access a Virtual Media Drive on a Client Computer

Important: Once you are connected to a virtual media drive, do not change mouse modes in the KVM client if you are performing file transfers, upgrades, installations or other similar actions. Doing so may cause errors on the virtual media drive or cause the virtual media drive to fail.

To access a virtual media drive on the client computer:

1. From the KVM client, choose Virtual Media > Connect Drive, or click the Connect Drive... button  . The Map Virtual Media Drive dialog appears.



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

   If you want Read and Write capabilities, select the Read-Write checkbox.

   This option is disabled for nonremovable drives. See the ***Conditions when Read/Write is Not Available*** (on page 83) for more information.

   When checked, you will be able to read or write to 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.

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

Mounting 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 KVM client, choose Virtual Media > Connect CD-ROM/ISO Image, or click the Connect CD ROM/ISO button  . The Map Virtual Media CD/ISO Image dialog appears.

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 Browse.
   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 list. 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 - User name required for access to the file server. The name can include the domain name such as mydomain/username.
   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.

Note: If you are working with files on a Linux® target, use the Linux Sync command after the files are copied using virtual media in order to view the copied files. Files may not appear until a sync is performed.

Note: If you are using the Windows 7® operating system®, Removable Disk is not displayed by default in the Window's My Computer folder when you mount a Local CD/DVD Drive or Local or Remote ISO Image. To view the Local CD/DVD Drive or Local or Remote ISO Image in this folder, select Tools > Folder Options > View and deselect "Hide empty drives in the Computer folder".

Note: You cannot access a remote ISO image via virtual media using an IPv6 address due to third-party software technical limitations.

Disconnect from Virtual Media Drives

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 command, simply closing the KVM connection closes the virtual media as well.

Virtual Media in a Windows XP Environment

If you are running the Virtual KVM Client or Active KVM Client in a Windows® XP environment, users must have Administrator privileges to access any virtual media type other than CD-ROM connections, ISOs and ISO images.

Virtual Media in a Linux Environment

Active System Partitions

You cannot mount active system partitions from a Linux client.

Linux Ext3/4 drive partitions need to be unmounted via umount /dev/<device label> prior to a making a virtual media connection.

Drive Partitions

The following drive partition limitations exist across operating systems:

- Windows® and Mac targets are not able to read Linux formatted partitions
- Windows and Linux cannot read Mac formatted partitions
- Only Windows Fat partitions are supported by Linux

Root User Permission Requirement

Your virtual media connection can be closed if you mount a CD ROM from a Linux client to a target and then unmount the CD ROM.

To avoid these issues, you must be a root user.

Virtual Media in a Mac Environment

Active System Partition

You cannot use virtual media to mount active system partitions for a Mac client.

Drive Partitions

The following drive partition limitations exist across operating systems:

- Windows® and Mac targets are not able to read Linux formatted partitions
- Windows cannot read Mac formatted partitions
- Windows FAT and NTFS are supported by Mac
- Mac users must unmount any devices that are already mounted in order to connect to a target server. Use >diskutil umount /dev/disk1s1 to unmount the device and diskutil mount /dev/disk1s1 to remount it.

Virtual Media File Server Setup (File Server ISO Images Only)

This feature is only required when using virtual media to access file server ISO images. ISO9660 format is the standard supported by Raritan. However, other CD-ROM extensions may also work.

Note: SMB/CIFS support is required on the file server.

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 images specified here are 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 ***Mounting CD-ROM/DVD-ROM/ISO Images*** (on page 84).

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. Check the Selected checkbox for all media that you want accessible as virtual media.
3. Enter information about the file server ISO images that you want to access:
   - IP Address/Host Name - Host name or IP address of the file server.

- Image Path - Full path name of the location of the ISO image. For example, /sharename0/path0/image0.iso, \sharename1\path1\image1.iso, and so on.

Note: The host name cannot exceed 232 characters in length.

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

Note: If you are connecting to a Windows 2003® server and attempt to load an ISO image from the server, you may receive an error stating "Virtual Media mounting on port failed. Unable to connect to the file server or incorrect File Server username and password".

If this occurs, disable "Microsoft Network Server: Digitally Sign Communications" option on the server under the Domain Controllers policies.

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 command, simply closing the KVM connection closes the virtual media as well.

Chapter 5 User Management

In This Chapter

User Groups

Every KX II-101-V2 is delivered with three default user groups. These groups cannot be deleted:

User	Description
Admin	Users that are members of this group have full administrative privileges. The original, factory-default user is a member of this group and has the complete set of system privileges. In addition, the Admin user must be a member of the Admin group.
Unknown	This is the default group for users who are authenticated externally using LDAP/LDAPS or RADIUS or who are unknown to the system. If the external LDAP/LDAPS or RADIUS server does not identify a valid user group, the Unknown group is used. In addition, any newly created user is automatically put in this group until assigned to another group.
Individual Group	An individual group is essentially a “group” of one. That is, the specific user is in its own group, not affiliated with other real groups. Individual groups can be identified by the “@” in the Group Name. The individual group allows a user account to have the same rights as a group.

Up to 254 user groups can be created in the KX II-101-V2.

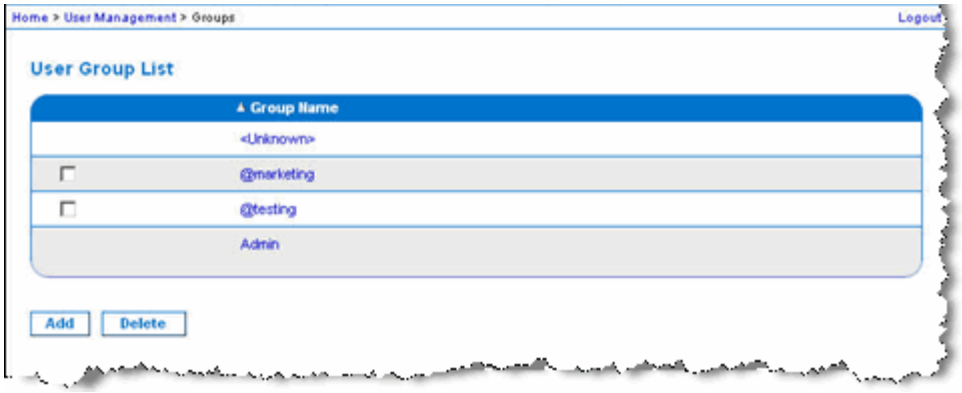
User Group List

User groups are used with local and remote authentication (via RADIUS or LDAP/LDAPS). It is a good idea to define user groups before creating individual users since, when you add a user, you must assign that user to an existing user group.

The User Group List page displays a list of all user groups, which can be sorted in ascending or descending order by clicking on the Group Name column heading. From the User Group List page, you can also add, modify, or delete user groups.

To list the user groups:

- Choose User Management > User Group List. The User Group List page opens.



Relationship Between Users and Groups

Users belong to a group and groups have privileges. Organizing the various users of your KX II-101-V2 into groups saves time by allowing you to manage permissions for all users in a group at once, instead of managing permissions on a user-by-user basis.

You may also choose not to associate specific users with groups. In this case, you can classify the user as “Individual.”

Upon successful authentication, the appliance uses group information to determine the user's permissions, such as which server ports are accessible, whether rebooting the appliance is allowed, and other features.

Adding a New User Group

To add a new user group:

1. Select User Management > Add New User Group or click Add on the User Group List page.

2. Type a descriptive name for the new user group into the Group Name field (up to 64 characters).
3. Select the checkboxes next to the permissions you want to assign to all of the users belonging to this group. See ***Setting Permissions*** (on page 93).

Setting Port Permissions

For each server port, you can specify the access type the group has, as well as the type of port access to the virtual media and the power control. Please note that the default setting for all permissions is Deny.

Port access	
Option	**Description**
Deny	Denied access completely
View	View the video (but not interact with) the connected target server
Control	Control the connected target server. Control must be assigned to the group if VM and power control access will also be granted.

VM access	
option	**Description**
Deny	Virtual media permission is denied altogether for the port.
Read-Only	Virtual media access is limited to read access only.
Read-Write	Complete access (read, write) to virtual media.
Power control access	
option	**Description**
Deny	Deny power control to the target server
Access	Full permission to power control on a target server

Group-Based IP ACL (Access Control List)

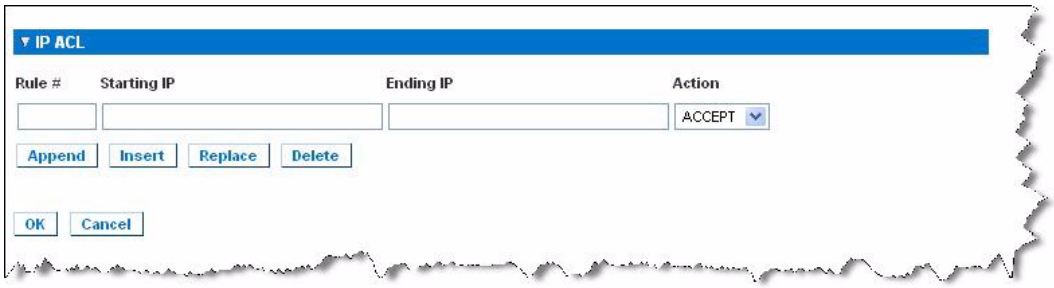
Important: Exercise caution when using group-based IP access control. It is possible to be locked out of your KX II-101-V2 if your IP address is within a range that has been denied access.

This feature limits a user's access to the KX II-101-V2 by allowing you to assign them to a group that can only access the device through specific IP addresses.

This feature applies only to users belonging to the specific group. This is unlike the IP Access Control List feature that applies to all access attempts to the device. IP access control takes priority over group-based IP ACL and is processed first.

Important: The IP address 127.0.0.1 is used by the KX II-101-V2 Local Port and cannot be blocked.

Use the IP ACL section of the Group page to add, insert, replace, and delete IP access control rules on a group-level basis.



To add (append) rules:

1. Type the starting IP address in the Starting IP field.
2. Type the ending IP address in the Ending IP field.
3. Choose the action from the available options:
   - Accept - IP addresses set to Accept are allowed access to the KX II-101-V2 device.
   - Drop - IP addresses set to Drop are denied access to the KX II-101-V2 device.
4. Click Append. The rule is added to the bottom of the rules list. Repeat steps 1 through 4 for each rule you want to enter.

To insert a rule:

1. Enter a rule number (#). A rule number is required when using the Insert command.
2. Enter the Starting IP and Ending IP fields.
3. Choose the action from the Action drop-down list.
4. Click Insert. If the rule number you just typed equals an existing rule number, the new rule is placed ahead of the exiting rule and all rules are moved down in the list.

To replace a rule:

1. Specify the rule number you want to replace.
2. Type the Starting IP and Ending IP fields.
3. Choose the Action from the drop-down list.
4. Click Replace. Your new rule replaces the original rule with the same rule number.

To delete a rule:

1. Specify the rule number you want to delete.
2. Click Delete.
3. When prompted to confirm the deletion, click OK.

Important: ACL rules are evaluated in the order in which they are listed. For instance, in the example shown here, if the two ACL rules were reversed, Dominion would accept no communication at all.

```
Rule 1, Starting IP = 192.168.50.1, Ending IP = 192.168.55.255, Action = ACCEPT

Rule 2, Starting IP = 0.0.0.0, Ending IP = 255.255.255.255, Action = DROP
```

Tip: The rule numbers allow you to have more control over the order in which the rules are created.

Setting Permissions

Important: Selecting the User Management checkbox allows the members of the group to change the permissions of all users, including their own. Carefully consider granting these permissions.

Permission	Description
Device Access While Under CC-SG Management	Allows users and user groups with this permission to directly access the KX II-101-V2 using an IP address when Local Access is enabled for the device in CC-SG. The device can be accessed from the Remote Console, MPC and VKC. When a device is accessed directly while it is under CC-SG management, access and connection activity is logged on the KX II-101-V2. User authentication is performed based on KX II-101-V2 authentication settings. *Note: The Admin user group has this permission by default.*
Device Settings	Network settings, date/time settings, port configuration (channel names, power associations), event management (SNMP, Syslog), virtual media file server setup
Diagnostics	Network interface status, network statistics, ping host, trace route to host, KX II-101-V2 diagnostics
Maintenance	Backup and restore database, firmware upgrade, factory reset, reboot
Modem Access	Permission to use the modem to connect to the KX II-101-V2device.
PC-Share	Simultaneous access to the same target by multiple users
Security	SSL certificate, security settings (VM Share, PC-Share), IP ACL
User Management	User and group management, remote authentication (LDAP/LDAPS/RADIUS), login settings

Setting Permissions for an Individual Group

To set permissions for an individual user group:

1. Locate the group from among the groups listed. Individual groups can be identified by the @ in the Group Name.
2. Click the Group Name. The Group page opens.
3. Select the appropriate permissions.

4. Click OK.

Modifying an Existing User Group

Note: All permissions are enabled for the Admin group and cannot be changed.

To modify an existing user group:

1. From the Group page, change the appropriate fields and set the appropriate permissions.
2. Set the Permissions for the group. Select the checkboxes before the permissions you want to assign to all of the users belonging to this group. See ***Setting Permissions*** (on page 93).
3. Set the Port Permissions. Specify the server ports that can be accessed by users belonging to this group (and the type of access). See ***Setting Port Permissions*** (on page 91).
4. Set the IP ACL (optional). This feature limits access to the KX II-101-V2 device by specifying IP addresses. See ***Group-Based IP ACL (Access Control List)*** (on page 92).
5. Click OK.

To delete a user group:

Important: If you delete a group with users in it, the users are automatically assigned to the <unknown> user group.

Tip: To determine the users belonging to a particular group, sort the User List by User Group.

1. Choose a group from among those listed by checking the checkbox to the left of the Group Name.
2. Click Delete.
3. When prompted to confirm the deletion, click OK.

Users

Users must be granted user names and passwords to gain access to the KX II-101-V2. This information is used to authenticate users attempting to access your KX II-101-V2.

View KX II-101-V2 User List

The User List page displays a list of all users including their user name, full name, and user group. The list can be sorted on any of the columns by clicking on the column name. From the User List page, you can add, modify, or delete users.

To view the ports each user is connected to, see View Users by Port.

To view the list of users:

- Choose User Management > User List. The User List page opens.

View Users by Port

The User By Ports page lists all authenticated local and remote users and ports they are being connected to. Only permanent connections to ports are listed.

If the same user is logged on from more than one client, their username appears on the page for each connection they have made. For example, if a user has logged on from two (2) different clients, their name is listed twice.

This page contains the following user and port information:

- Port Number - port number assigned to the port the user is connected to
- Port Name - port name assigned to the port the user is connected to

  Note: If user is not connected to a target, 'Local Console' or 'Remote Console' is displayed under the Port Name.
- Username - username for user logins and target connections
- Access From - IP address of client PC accessing the KX II-101-V2
- Status - current Active or Inactive status of the connection

To view users by port:

- Choose User Management > User by Port. The Users by Port page opens.

Disconnecting Users from Ports

Disconnecting users disconnects them from the target port *without* logging them off of KX II-101-V2.

This is unlike the force user logoff KX II-101-V2 function that disconnects users from the target port and logs them off of KX II-101-V2. See ***Logging Users Off the KX II-101-V2 (Force Logoff)*** (on page 97) for information.

If the "Disconnect User from Port" is disabled, the user is not logged on to the port at the current time.

1. Choose User Management > Users by Port. The Users by Port page opens.
2. Select the checkbox next to the username of the person you want to disconnect from the target.
3. Click "Disconnect User from Port".
4. Click OK on the confirmation message to disconnect the user.
5. A confirmation message is displayed to indicate that the user was disconnected.

Logging Users Off the KX II-101-V2 (Force Logoff)

If you are an administrator, you are able to log off any authenticated user who is logged on to the KX II-101-V2. Users can also be disconnected at the port level. See ***Disconnecting Users from Ports*** (on page 97).

To log a user off the KX II-101-V2:

1. Choose User Management > Users by Port. The Users by Port page opens.
2. Select the checkbox next to the username of the person you want to disconnect from the target.
3. Click Force User Logoff.
4. Click OK on the Logoff User confirmation message.

Adding a New User

*Note: Since you must assign a user to an existing user group when you add them, it is a good idea to define user groups before creating KX II-101-V2 users. See **Adding a New User Group**.*

From the User page, you can add new users, modify user information, and reactivate users that have been deactivated*.

Note: A user can be deactivated when the number of failed login attempts has exceeded the maximum login attempts set in the Security Settings page. See* **Security Settings *(on page 153).*

To add a new user:

1. Select User Management > Add New User or click Add on the User List page.
2. Type a unique name in the Username field, up to 16 characters.
3. Type the person's full name in the Full Name field, up to 64 characters.
4. Type a password in the Password field and retype the password in the Confirm Password field, up to 64 characters.
5. Choose the group from the User Group drop-down list.

   If you do not want to associate this user with an existing User Group, select Individual Group from the drop-down list. For more information about permissions for an Individual Group, see ***Setting Permissions for an Individual Group*** (on page 94).
6. To activate the new user, leave the Active checkbox selected. Click OK.

Modifying an Existing User

To modify an existing user:

1. Open the User List page by choosing User Management > User List.
2. Locate the user from among those listed on the User List page.
3. Click the user name. The User page opens.
4. On the User page, change the appropriate fields. See ***Adding a New User*** (on page 98) for information about how to get access the User page.
5. To delete a user, click Delete. You are prompted to confirm the deletion.
6. Click OK.

Blocking and Unblocking Users

A user's access to the system can be blocked by the administrator or automatically blocked based on security settings. See ***User Blocking*** (on page 156). A blocked user becomes inactive and can be unblocked by being made active again by the administrator.

To block or unblock a user:

1. Choose User Management > User List. The User List page opens.
2. Select or deselect the Active checkbox.
   - If selected, the user is made active and given access to the KX II-101-V2.
   - If deselected, the user is made inactive and cannot access the KX II-101-V2.
3. Click OK. The user's active status is updated.

Authentication Settings

Authentication is the process of verifying that a user is who he says he is. Once a user is authenticated, the user's group is used to determine his system and port permissions. The user's assigned privileges determine what type of access is allowed. This is called authorization.

When the KX II-101-V2 is configured for remote authentication, the external authentication server is used primarily for the purposes of authentication, not authorization.

Note: When remote authentication (LDAP/LDAPS or RADIUS) is selected, if the user is not found, the local authentication database will also be checked.

To configure authentication:

1. Choose User Management > Authentication Settings. The Authentication Settings page opens.
2. Choose the option for the authentication protocol you want to use (Local Authentication, LDAP/LDAPS, or RADIUS). Choosing the LDAP option enables the remaining LDAP fields; selecting the RADIUS option enables the remaining RADIUS fields.
3. If you choose Local Authentication, proceed to step 6.
4. If you choose LDAP/LDAPS, read the section entitled Implementing LDAP Remote Authentication for information about completing the fields in the LDAP section of the Authentication Settings page.
5. If you choose RADIUS, read the section entitled Implementing RADIUS Remote Authentication for information about completing the fields in the RADIUS section of the Authentication Settings page.

6. Click OK to save.

To return to factory defaults:

- Click Reset to Defaults.

Implementing LDAP/LDAPS Remote Authentication

Lightweight Directory Access Protocol (LDAP/LDAPS) is a networking protocol for querying and modifying directory services running over TCP/IP. A client starts an LDAP session by connecting to an LDAP/LDAPS server (the default TCP port is 389). The client then sends operation requests to the server, and the server sends responses in turn.

Reminder: Microsoft Active Directory functions natively as an LDAP/LDAPS authentication server.

To use the LDAP authentication protocol:

1. Click User Management > Authentication Settings to open the Authentication Settings page.
2. Select the LDAP radio button to enable the LDAP section of the page.
3. Click the 

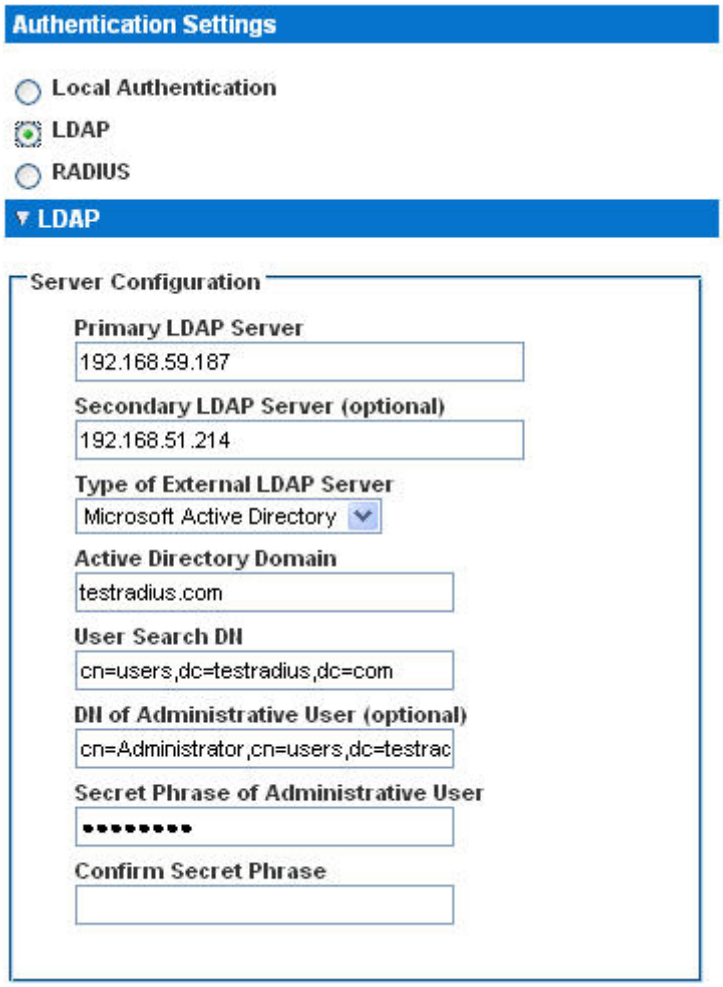
icon to expand the LDAP section of the page.

   Server Configuration

4. In the Primary LDAP Server field, type the IP address or DNS name of your LDAP/LDAPS remote authentication server (up to 256 characters). When the Enable Secure LDAP option is selected and the Enable LDAPS Server Certificate Validation option is selected, the DNS name must be used to match the CN of LDAP server certificate.
5. In the Secondary LDAP Server field, type the IP address or DNS name of your backup LDAP/LDAPS server (up to 256 characters). When the Enable Secure LDAP option is selected, the DNS name must be used. Note that the remaining fields share the same settings with the Primary LDAP Server field. **Optional**
6. Type of External LDAP Server.
7. Select the external LDAP/LDAPS server. Choose from among the options available:
   - Generic LDAP Server.
   - Microsoft Active Directory. Active Directory is an implementation of LDAP/LDAPS directory services by Microsoft for use in Windows environments.

8. Type the name of the Active Directory Domain if you selected Microsoft Active Directory. For example, *acme.com*. Consult your Active Directive Administrator for a specific domain name.
9. In the User Search DN field, enter the Distinguished Name of where in the LDAP database you want to begin searching for user information. Up to 64 characters can be used. An example base search value might be: `cn=Users,dc=raritan,dc=com`. Consult your authentication server administrator for the appropriate values to enter into these fields.
10. Enter the Distinguished Name of the Administrative User in the DN of Administrative User field (up to 64 characters). Complete this field if your LDAP server only allows administrators to search user information using the Administrative User role. Consult your authentication server administrator for the appropriate values to type into this field. An example DN of Administrative User value might be: `cn=Administrator,cn=Users,dc=testradius,dc=com`. **Optional**

11. If you entered a Distinguished Name for the Administrative User, you must enter the password that will be used to authenticate the Administrative User's DN against the remote authentication server. Enter the password in the Secret Phrase field and again in the Confirm Secret Phrase field (up to 128 characters).



LDAP/LDAP Secure

12. Select the Enable Secure LDAP checkbox if you would like to use SSL. This will enable the Enable LDAPS Server Certificate Validation checkbox. Secure Sockets Layer (SSL) is a cryptographic protocol that allows KX II-101-V2 to communicate securely with the LDAP/LDAPS server.
13. The default Port is 389. Either use the standard LDAP TCP port or specify another port.

14. The default Secure LDAP Port is 636. Either use the default port or specify another port. This field is only used when the Enable Secure LDAP checkbox is selected.
15. Select the Enable LDAPS Server Certificate Validation checkbox to use the previously uploaded root CA certificate file to validate the certificate provided by the server. If you do not want to use the previously uploaded root CA certificate file, leave this checkbox deselected. Disabling this function is the equivalent of accepting a certificate that has been signed by an unknown certifying authority. This checkbox is only available when the Enable Secure LDAP checkbox has been enabled.

Note: When the Enable LDAPS Server Certificate Validation option is selected, in addition to using the Root CA certificate for validation, the server hostname must match the common name provided in the server certificate.

16. If needed, upload the Root CA Certificate File. This field is enabled when the Enable Secure LDAP option is selected. Consult your authentication server administrator to get the CA certificate file in Base64 encoded X-509 format for the LDAP/LDAPS server. Use Browse to navigate to the certificate file. If you are replacing a certificate for the LDAP/LDAPS server with a new certificate, you must reboot the KX II-101-V2 in order for the new certificate to take effect.

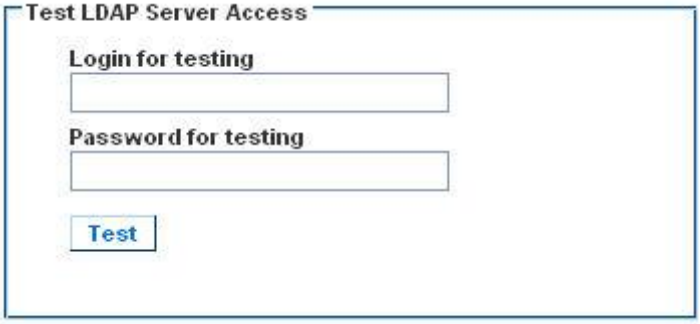
Test LDAP Server Access

17. To test the LDAP configuration, enter the login name and password in the "Login for testing" field and the "Password for testing" field, respectively. Click Test.

This is the username and password you entered to access the KX II-101-V2. It is also username and password the LDAP server uses to authenticate you.

The KX II-101-V2 then tests the LDAP configuration from the Authentication Settings page. This is helpful due to the complexity sometimes encountered when configuring the LDAP server and KX II-101-V2 for remote authentication.

Once the test is completed, a message is displayed that lets you know the test was successful or, if the test failed, a detailed error message is displayed. It also can display group information retrieved from remote LDAP server for the test user in case of success.



Returning User Group Information from Active Directory Server

The KX II-101-V2 supports user authentication to Active Directory® (AD) without requiring that users be defined locally on the KX II-101-V2. This allows Active Directory user accounts and passwords to be maintained exclusively on the AD server. Authorization and AD user privileges are controlled and administered through the standard KX II-101-V2 policies and user group privileges that are applied locally to AD user groups.

IMPORTANT: If you are an existing Raritan, Inc. customer, and have already configured the Active Directory server by changing the AD schema, the KX II-101-V2 still supports this configuration and you do not need to perform the following operations. See Updating the LDAP Schema for information about updating the AD LDAP/LDAPS schema.

To enable your AD server on the KX II-101-V2:

1. Using the KX II-101-V2, create special groups and assign proper permissions and privileges to these groups. For example, create groups such as KVM_Admin and KVM_Operator.
2. On your Active Directory server, create new groups with the same group names as in the previous step.

3. On your AD server, assign the KX II-101-V2 users to the groups created in step 2.
4. From the KX II-101-V2, enable and configure your AD server properly. See ***Implementing LDAP/LDAPS Remote Authentication*** (on page 100).

Important Notes

- Group Name is case sensitive.
- The KX II-101-V2 provides the following default groups that cannot be changed or deleted: Admin and <Unknown>. Verify that your Active Directory server does not use the same group names.
- If the group information returned from the Active Directory server does not match the KX II-101-V2 group configuration, the KX II-101-V2 automatically assigns the group of <Unknown> to users who authenticate successfully.

Implementing RADIUS Remote Authentication

Remote Authentication Dial-in User Service (RADIUS) is an AAA (authentication, authorization, and accounting) protocol for network access applications.

To use the RADIUS authentication protocol:

1. Click User Management > Authentication Settings to open the Authentication Settings page.
2. Click the RADIUS radio button to enable the RADIUS section of the page.
3. Click the 

icon to expand the RADIUS section of the page.
4. In the Primary Radius Server and Secondary Radius Server fields, type the IP address of your primary and optional secondary remote authentication servers, respectively (up to 256 characters).
5. In the Shared Secret fields, type the server secret used for authentication (up to 128 characters).

   The shared secret is a character string that must be known by both the KX II-101-V2 and the RADIUS server to allow them to communicate securely. It is essentially a password.
6. The Authentication Port default is port is 1812 but can be changed as required.
7. The Accounting Port default port is 1813 but can be changed as required.
8. The Timeout is recorded in seconds and default timeout is 1 second, but can be changed as required.

The timeout is the length of time the KX II-101-V2 waits for a response from the RADIUS server before sending another authentication request.

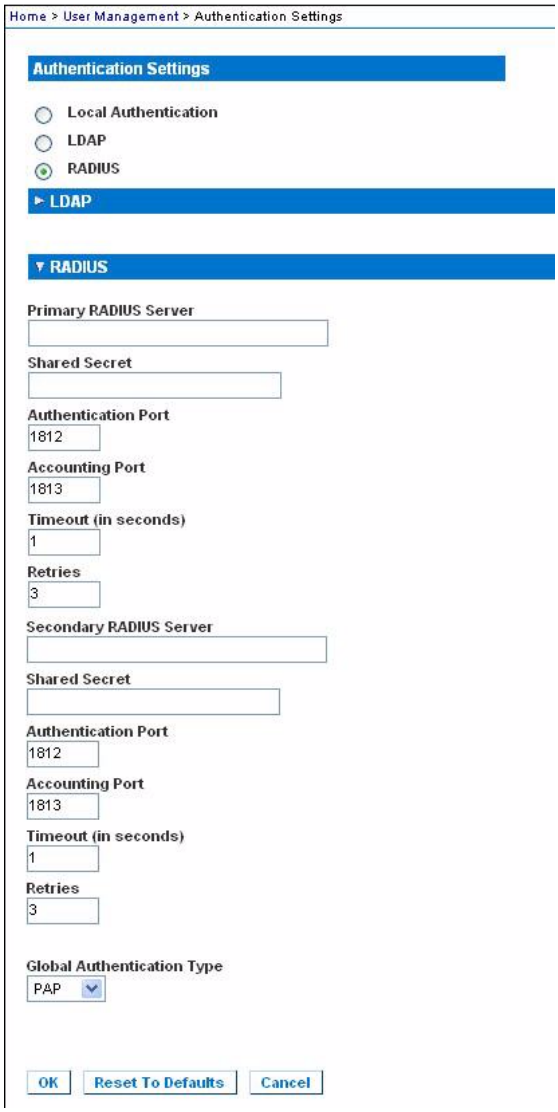
9. The default number of retries is 3 Retries.

   This is the number of times the KX II-101-V2 will send an authentication request to the RADIUS server.

10. Choose the Global Authentication Type from among the options in the drop-down list:

    - PAP - With PAP, passwords are sent as plain text. PAP is not interactive. The user name and password are sent as one data package once a connection is established, rather than the server sending a login prompt and waiting for a response.

- CHAP - With CHAP, authentication can be requested by the server at any time. CHAP provides more security than PAP.



Returning User Group Information via RADIUS

When a RADIUS authentication attempt succeeds, the KX II-101-V2 determines the permissions for a given user based on the permissions of the user's group.

Your remote RADIUS server can provide these user group names by returning an attribute, implemented as a RADIUS FILTER-ID. The FILTER-ID should be formatted as follows: Raritan:G{*GROUP_NAME*} where *GROUP_NAME* is a string denoting the name of the group to which the user belongs.

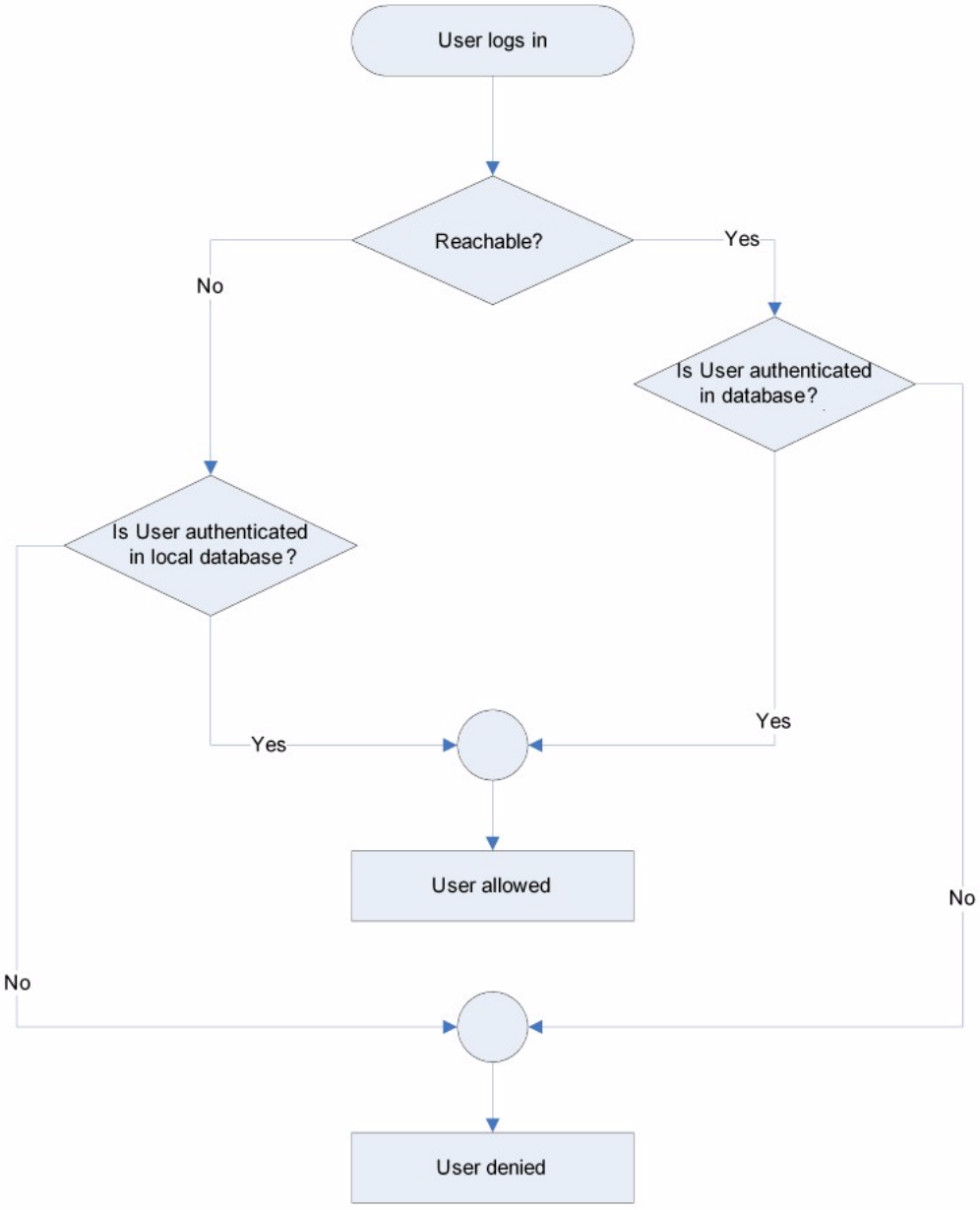
RADIUS Communication Exchange Specifications

The KX II-101-V2 sends the following RADIUS attributes to your RADIUS server:

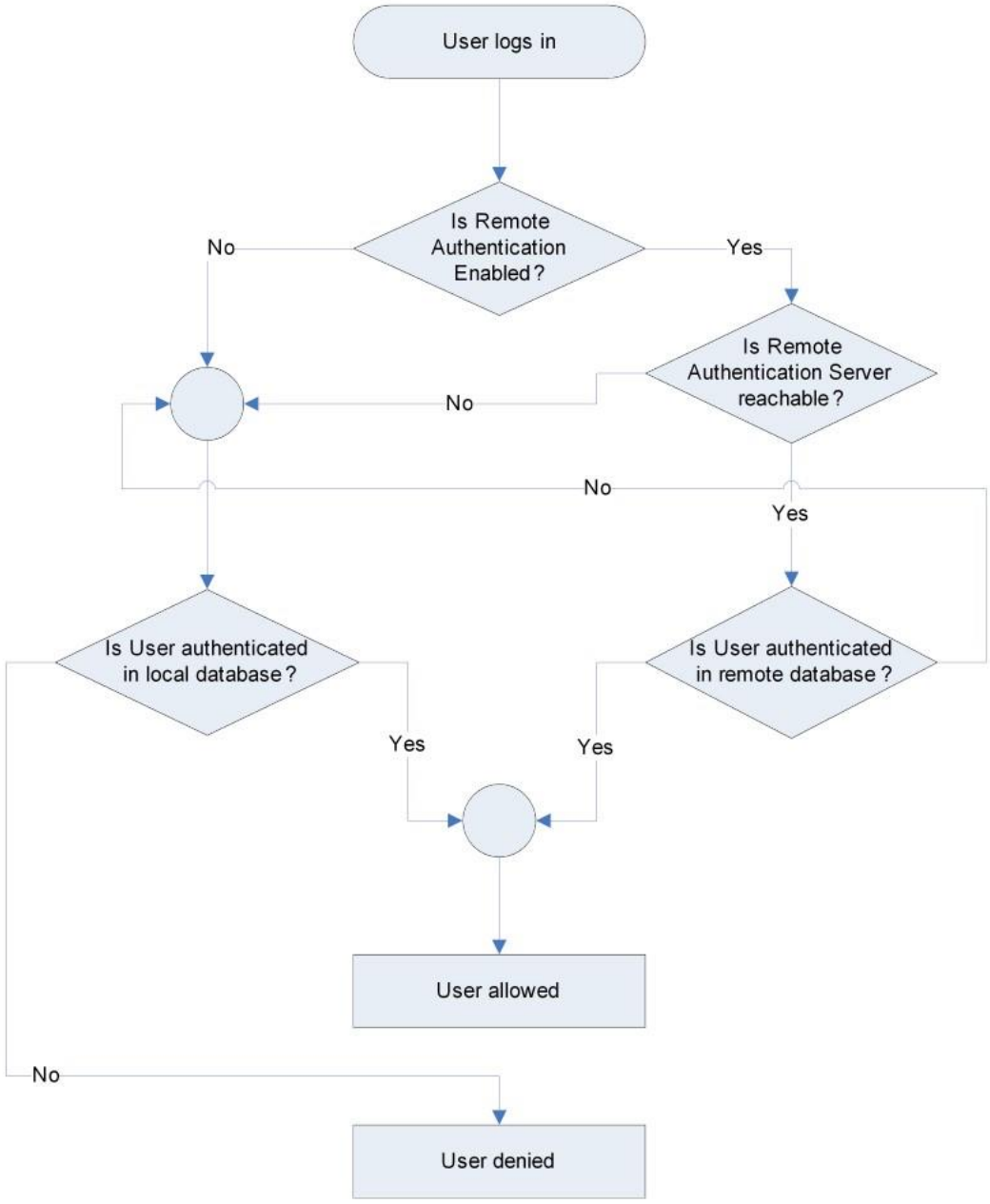
Attribute	Data
Log in	
Access-Request (1)	
NAS-Port-Type (61)	VIRTUAL (5) for network connections.
NAS-IP-Address (4)	The IP address for the KX II-101-V2.
User-Name (1)	The user name entered at the login screen.
Acct-Session-ID (44)	Session ID for accounting.
User-Password(2)	The encrypted password.
Accounting-Request(4)	
Acct-Status (40)	Start(1) - Starts the accounting.
NAS-Port-Type (61)	VIRTUAL (5) for network connections.
NAS-Port (5)	Always 0.
NAS-IP-Address (4)	The IP address for the KX II-101-V2.
User-Name (1)	The user name entered at the login screen.
Acct-Session-ID (44)	Session ID for accounting.
Log out	
Accounting-Request(4)	
Acct-Status (40)	Stop(2) - Stops the accounting
NAS-Port-Type (61)	VIRTUAL (5) for network connections.
NAS-Port (5)	Always 0.
NAS-IP-Address (4)	The IP address for the KX II-101-V2.
User-Name (1)	The user name entered at the login screen.
Acct-Session-ID (44)	Session ID for accounting.

User Authentication Process

When the device is configured to authenticate and authorize local users, the order in which the user credentials are validated follows the following process:



Remote authentication follows the process specified in the flowchart below:

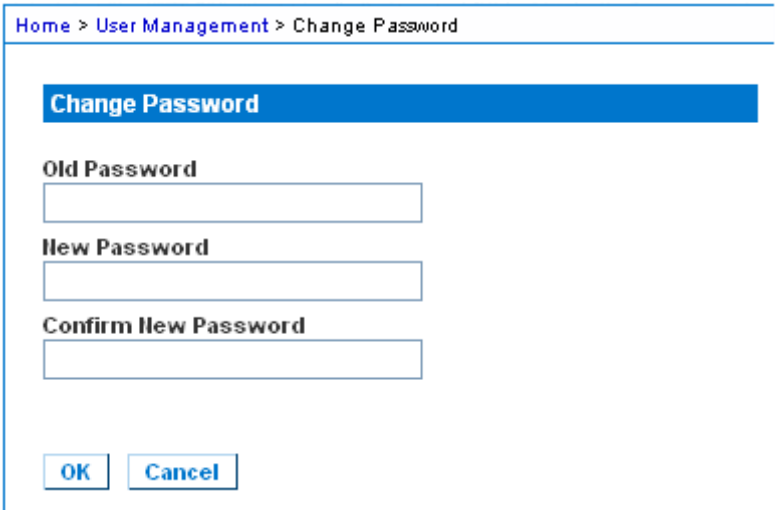


Changing a Password

To change your KX II-101-V2 password:

1. Choose User Management > Change Password. The Change Password page opens.
2. Type your current password in the Old Password field.
3. Type a new password in the New Password field. Retype the new password in the Confirm New Password field. Passwords can be up to 64 characters in length and can consist of English alphanumeric characters and special characters.
4. Click OK.
5. You will receive confirmation that the password was successfully changed. Click OK.

Note: If strong passwords are in use, this page displays information about the format required for the passwords. For more information about passwords and strong passwords, see **Strong Passwords** *(on page 155) in online help.*

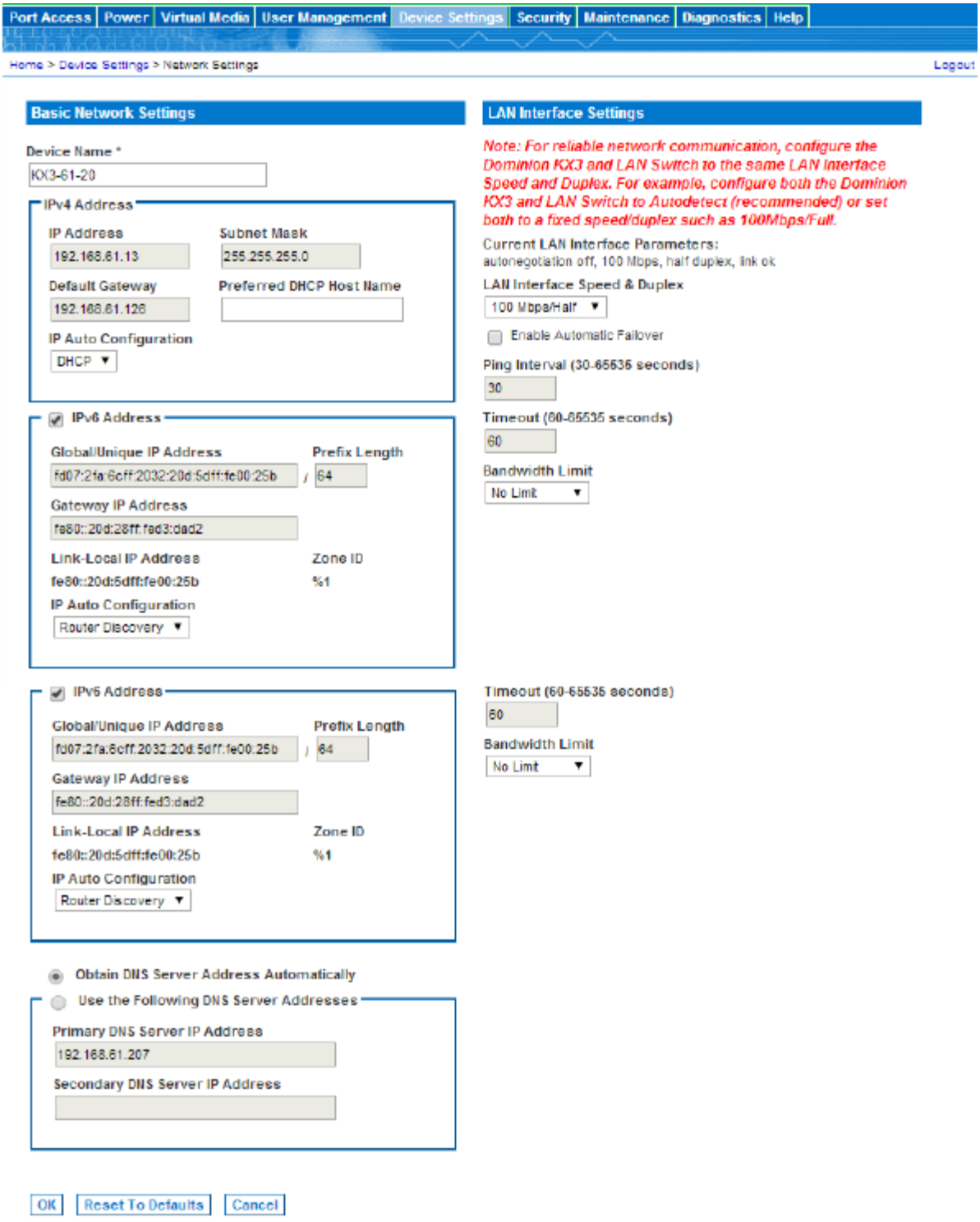


Chapter 6 Device Management

In This Chapter

Network Settings

Use the Basic Network Settings page to customize the network configuration for your KX II-101-V2. Specifically:


Port Access
Power
Virtual Media
User Management
Device Settings
Security
Maintenance
Diagnostics
Help
Home > Device Settings > Network Settings
Logout
Basic Network Settings
Device Name *
KX3-61-20
IPv4 Address
IP Address
192.168.61.13
Subnet Mask
255.255.255.0
Default Gateway
192.168.61.126
Preferred DHCP Host Name
IP Auto Configuration
DHCP
IPv6 Address
Global/Unique IP Address
fd07:2fa:6cff:2032:20d:5dff:fe00:25b
Prefix Length
64
Gateway IP Address
fe80::20d:28ff:fed3:dad2
Link-Local IP Address
fe80::20d:5dff:fe00:25b
Zone ID
%1
IP Auto Configuration
Router Discovery
IPv6 Address
Global/Unique IP Address
fd07:2fa:6cff:2032:20d:5dff:fe00:25b
Prefix Length
64
Gateway IP Address
fe80::20d:28ff:fed3:dad2
Link-Local IP Address
fe80::20d:5dff:fe00:25b
Zone ID
%1
IP Auto Configuration
Router Discovery
Obtain DNS Server Address Automatically
Use the Following DNS Server Addresses
Primary DNS Server IP Address
192.168.61.207
Secondary DNS Server IP Address
OK
Reset To Defaults
Cancel
LAN Interface Settings
Note: For reliable network communication, configure the Dominion KX3 and LAN Switch to the same LAN Interface Speed and Duplex. For example, configure both the Dominion KX3 and LAN Switch to Autodetect (recommended) or set both to a fixed speed/duplex such as 100Mbps/Full.
Current LAN Interface Parameters:
autonegotiation off, 100 Mbps, half duplex, link ok
LAN Interface Speed & Duplex
100 Mbps/Half
Enable Automatic Failover
Ping Interval (30-65535 seconds)
30
Timeout (60-65535 seconds)
60
Bandwidth Limit
No Limit
Timeout (60-65535 seconds)
60
Bandwidth Limit
No Limit

To change the network configuration:

1. Choose Device Settings > Network. The Network Settings page opens.
2. Update the Network Basic Settings. See ***Network Basic Settings*** (on page 116).
3. Update the LAN Interface Settings. See LAN Interface Settings.
4. Click OK to set these configurations. If your changes require rebooting the device, a reboot message appears.

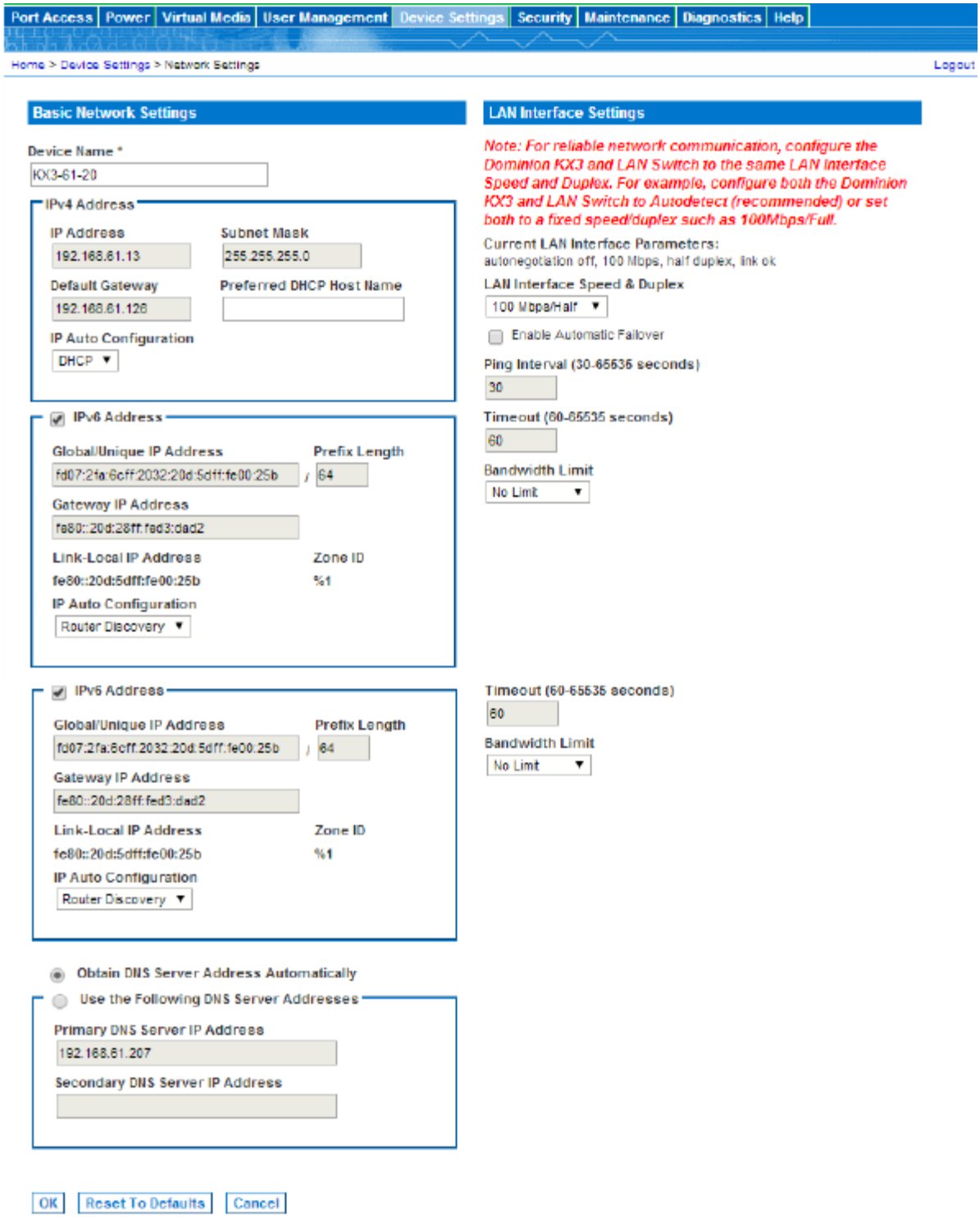
To reset the page to the factory defaults:

- Click "Reset To Defaults".

Network Basic Settings

Use the Basic Network Settings page to customize the network configuration for your KX II-101-V2. Specifically:

- ***Assign the KX II-101-V2 a Device Name*** (on page 17)
- ***Configure the IPv4 Settings*** (on page 17)
- ***Configure the IPv6 Settings*** (on page 19)
- ***Configure the DNS Settings*** (on page 20)


Port Access
Power
Virtual Media
User Management
Device Settings
Security
Maintenance
Diagnostics
Help
Home > Device Settings > Network Settings
Logout
Basic Network Settings
Device Name *
KX3-61-20
IPv4 Address
IP Address
192.168.61.13
Subnet Mask
255.255.255.0
Default Gateway
192.168.61.126
Preferred DHCP Host Name
IP Auto Configuration
DHCP
IPv6 Address
Global/Unique IP Address
fd07:2fa:6cff:2032:20d:5dff:fe00:25b
Prefix Length
64
Gateway IP Address
fe80::20d:28ff:fed3:dad2
Link-Local IP Address
fe80::20d:5dff:fe00:25b
Zone ID
%1
IP Auto Configuration
Router Discovery
IPv6 Address
Global/Unique IP Address
fd07:2fa:6cff:2032:20d:5dff:fe00:25b
Prefix Length
64
Gateway IP Address
fe80::20d:28ff:fed3:dad2
Link-Local IP Address
fe80::20d:5dff:fe00:25b
Zone ID
%1
IP Auto Configuration
Router Discovery
Obtain DNS Server Address Automatically
Use the Following DNS Server Addresses
Primary DNS Server IP Address
192.168.61.207
Secondary DNS Server IP Address
OK
Reset To Defaults
Cancel
LAN Interface Settings
Note: For reliable network communication, configure the Dominion KX3 and LAN Switch to the same LAN interface Speed and Duplex. For example, configure both the Dominion KX3 and LAN Switch to Autodetect (recommended) or set both to a fixed speed/duplex such as 100Mbps/Full.
Current LAN Interface Parameters:
autonegotiation off, 100 Mbps, half duplex, link ok
LAN Interface Speed & Duplex
100 Mbps/Half
Enable Automatic Failover
Ping Interval (30-65535 seconds)
30
Timeout (60-65535 seconds)
60
Bandwidth Limit
No Limit
Timeout (60-65535 seconds)
60
Bandwidth Limit
No Limit

To change the network configuration:

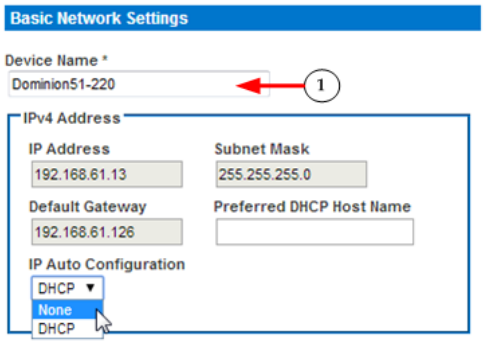
1. Choose Device Settings > Network. The Network Settings page opens.
2. Update the Network Basic Settings. See ***Network Basic Settings*** (on page 116).
3. Update the LAN Interface Settings. See LAN Interface Settings.
4. Click OK to set these configurations. If your changes require rebooting the device, a reboot message appears.

To reset the page to the factory defaults:

- Click "Reset To Defaults".

Assign the KX II-101-V2 a Device Name

Open the Device Network Settings page in the KX II-101-V2 Remote client



1. Specify a meaningful Device Name for your KX II-101-V2 device.

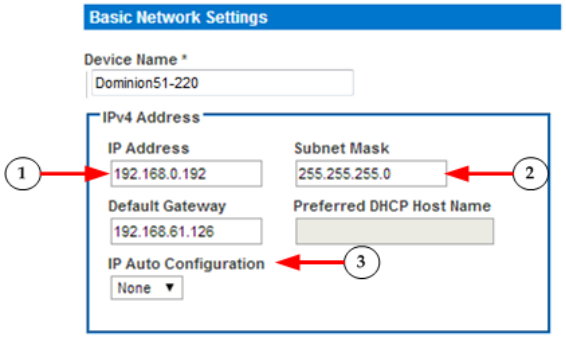
   Up to 32 alphanumeric and valid special characters, no spaces between characters.

Next, configure the IP address and DNS settings.

Configure the IPv4 Settings

In the IPv4 section, enter or select the appropriate IPv4-specific network settings.

Note that the same IP addresses cannot be applied to LAN1 and LAN2.



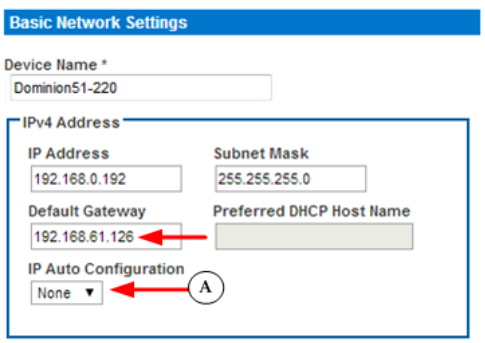
1. Enter the IP Address, if needed.

   The default IP address is 192.168.0.192.

2. Enter the Subnet Mask.

   The default subnet mask is 255.255.255.0.

3. Set up your IP Auto Configuration by selecting - None or DHCP



- *None* - for a static IP.

  Default selection and **recommended** option.

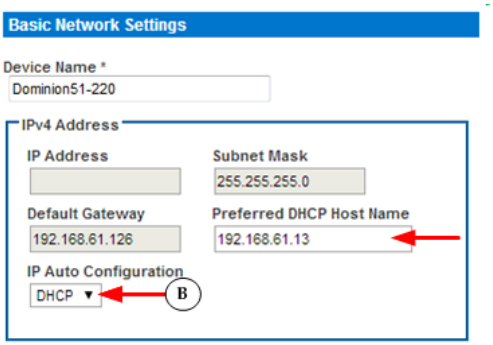
  If *None* is selected, you must manually specify the network parameters by entering the Default Gateway.

  Leaving the selection set to *None* -

  - Lets you set the network parameters since KX II-101-V2 is part of your network infrastructure and you most likely do not want its IP address to change frequently.

- Ensure redundant failover capabilities should the primary Ethernet port or the switch/router to which it is connected fail.

  If a failure occurs, KX II-101-V2 fails over to the secondary network port with the same IP address so there is no interruption.



- DHCP - Dynamic Host Configuration Protocol is used by networked computers (clients) to obtain unique IP addresses and other parameters from a DHCP server. This means the IP address is automatically assigned by a DHCP server and you do not need to provide a subnet mask or default gateway.

  Enter the Preferred DHCP Host Name if DHCP is selected from the IP Auto Configuration drop-down.

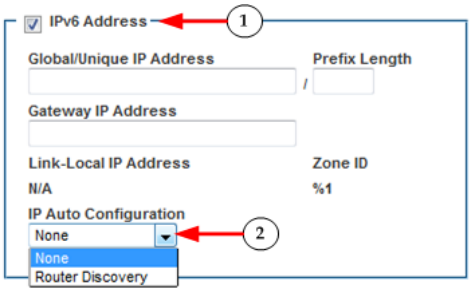
  Up to 63 characters.

Next -

- ***Configure the IPv6 Settings*** (on page 19)
- ***Configure the DNS Settings*** (on page 20)

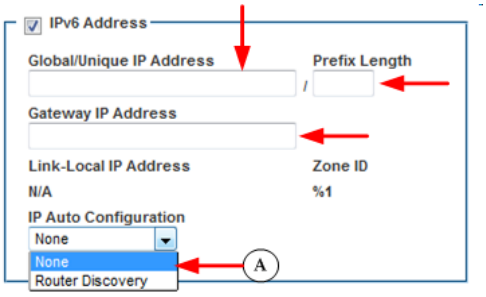
Configure the IPv6 Settings

If using IPv6, enter or select the appropriate IPv6-specific network settings in the IPv6 section.



1. Select the IPv6 checkbox to activate the fields in the section and enable IPv6 on the device.

2. Select an IP Auto Configuration option - None or Router Discovery.

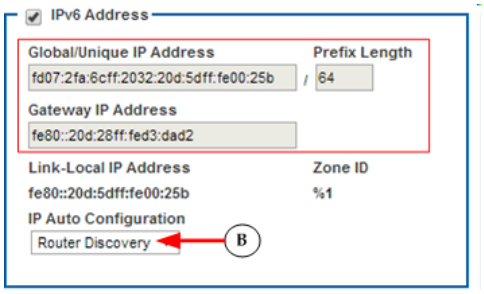


a. *None* - for a static IP. Default selection. **Recommended** option.

If *None* is selected, you must manually specify -

- Global/Unique IP Address - this is the IP address assigned to KX II-101-V2
- Prefix Length - this is the number of bits used in the IPv6 address
- Gateway IP Address

See IPv4 for details on leaving the selection set to *None*.



b. *Router Discovery* - Select this option to locate a Global or Unique IPv6 address instead of a Link-Local subnet.

Once located, the address is automatically applied.

The following additional, read-only information appears in this section -

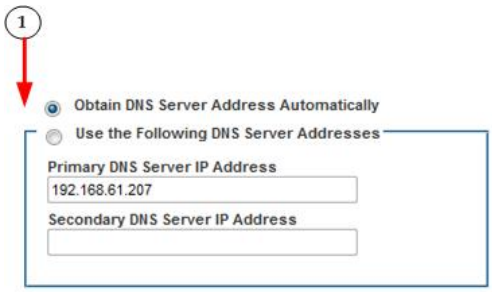
- Link-Local IP Address

  This address is automatically assigned to the device. The address is used for neighbor discovery or when no routers are present. Read-Only

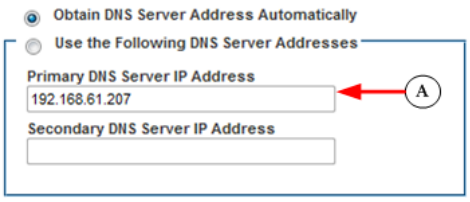
- Zone ID

Identifies the device the address is associated with. Read-OnlyNext - ***Configure the DNS Settings*** (on page 20)

Configure the DNS Settings



1. Do one of the following to configure DNS -
   - "Obtain DNS Server Address Automatically"
   - "Use the Following DNS Server Addresses"



   a. Select "Obtain DNS Server Address Automatically" if DHCP is selected.

      The DNS information is then provided by the DHCP server that is used.

      When finished, click OK. Your KX II-101-V2 device is now network accessible.

   b. Enter the following information if the "Use the Following DNS Server Addresses" is selected -
      - Primary DNS Server IP Address
      - Secondary DNS Server IP Address

      These secondary DNS address is used if the primary DNS server connection is lost due to an outage.

Even if DHCP is selected in the IPv4 section, enter the primary and secondary addresses since these addresses are used to connect to the DNS server.

When finished, click OK.

LAN Interface Settings

The current parameter settings are identified in the Current LAN interface parameters field.

1. Choose Device Settings > Network. The Network Settings page opens.
2. Choose the LAN Interface Speed & Duplex from the following options:
   - Autodetect (default option)
   - 10 Mbps/Half - Both LEDs blink
   - 10 Mbps/Full - Both LEDs blink
   - 100 Mbps/Half - Yellow LED blinks
   - 100 Mbps/Full - Yellow LED blinks
   - 1000 Mbps/Full (gigabit) - Green LED blinks
   - Half-duplex provides for communication in both directions, but only one direction at a time (not simultaneously).
   - Full-duplex allows communication in both directions simultaneously.

   Note: Occasionally there are problems running at 10 Mbps in either half or full duplex. If you are experiencing problems, try another speed and duplex setting.

   See Network Speed Settings for more information.
3. Select the Enable Automatic Failover checkbox to allow the KX II to automatically recover its network connection using a second network port if the active network port fails.

   Note: Because a failover port is not activated until after a failover has actually occurred, Raritan recommends that you not monitor the port or monitor it only after a failover occurs.

   When this option is enabled, the following two fields are used:
   - Ping Interval (seconds) - Ping interval determines how often the KX II checks the status of the network path to the designated gateway. The default ping interval is 30 seconds.
   - Timeout (seconds) - Timeout determines how long a designated gateway remains unreachable via the network connection before a fail over occurs.

Note: The ping interval and timeout can be configured to best meet the local network conditions. The timeout should be set to allow for at least two or more ping requests to be transmitted and responses returned. For example, if a high rate of failover is observed due to high network utilization, the timeout should be extended to 3 or 4 times the ping interval.

4. Select the Bandwidth.
5. Click OK to apply the LAN settings.

Device Services

The Device Services page allows you to configure the following functions:

- Enable SSH access
- Enter the discovery port
- Enable direct port access
- Enable Telnet access
- Configure HTTp and HTTPs settings
- Configuring SNMP agents

Enabling Telnet

If you wish to use Telnet to access the KX II-101-V2, first access the KX II-101-V2 from the CLI or a browser.

To enable Telnet:

1. Select Device Settings > Device Services and then select the Enable TELNET Access checkbox.
2. Enter the Telnet port.
3. Click OK.

Once Telnet access is enabled, you can use it to access the KX II-101-V2 and set up the remaining parameters.

Enabling SSH

Enable SSH access to allow administrators to access the KX II-101-V2 via the SSH v2 application.

To enable SSH access:

1. Choose Device Settings > Device Services. The Device Service Settings page opens.
2. Select Enable SSH Access.

3. Enter the SSH Port information. The standard SSH TCP port number is 22 but the port number can be changed to provide a higher level of security operations.
4. Click OK.

HTTP and HTTPS Port Settings

You are able to configure HTTP and/or HTTPS ports used by the KX II-101-V2. For example, if you are using the default HTTP port 80 for another purpose, changing the port will ensure the device does not attempt to use it.

1. Choose Device Settings > Device Services. The Device Service Settings page opens.
2. Enter the new ports in the HTTP Port and/or HTTPS Port fields.
3. Click OK.

Entering the Discovery Port

KX II-101-V2 discovery occurs over a single, configurable TCP Port.

The default is Port 5000, but you can configure it to use any TCP port except 80 and 443.

To access KX II-101-V2 from beyond a firewall, your firewall settings must enable two-way communication through the default Port 5000 or a non-default port configured on this page.

via Remote Console or command line interface (CLI).

To enable the discovery port:

1. Choose Device Settings > Device Services. The Device Service Settings page opens.
2. Enter the Discovery Port.
3. Click OK.

Enabling Direct Port Access via URL

Direct Port Access allows users to bypass having to use the KX II-101-V2's Login dialog and Port Access page.

This feature also provides the ability to enter a username and password directly to proceed to the target, if the username and password is not contained in the URL.

If you are using the Virtual KVM Client (VKC) and direct port access, use one of the following syntaxes:

- https://IPaddress/dpa.asp?username=username&password=password&port=port number
- https://IPaddress/dpa.asp?username=username&password=password&portname=port name

To enable direct port access:

1. Choose Device Settings > Device Services. The Device Service Settings page opens.
2. Select Enable Direct Port Access via URL if you would like users to have direct access to a target via the Dominion device by passing in the necessary parameters in the URL.
3. Click OK.

Configuring SNMP Agents

SNMP-compliant devices, called agents, store data about themselves in Management Information Bases (MIBs) and return this data to the SNMP managers. See ***Viewing the KX II-101-V2 MIB*** (on page 137) for information on viewing the KX II-101-V2 MIB.

KX II-101-V2 supports SNMP logging for SNMP v1/v2c and/or v3. SNMP v1/v2c defines message formats and protocol operations when SNMP logging is enabled. SNMP v3 is a security extension of SNMP that provides user authentication, password management and encryption.

1. Choose Device Settings > Device Services. The Device Service Settings page opens.
2. Provide the following SNMP agent identifier information for the MIB-II System Group objects:
   - System Name - the SNMP agent's name/appliance name
   - System Contact - the contact name related to the appliance

   a. System Location - the location of the appliance
3. Select either or both Enable SNMP v1/v2c and Enable SNMP v3. At least one option must be selected. **Required**
4. Complete the following fields for SNMP v1/v2c (if needed):

- Community - the appliance's community string

a. Community Type - grant either Read-Only or Read-Write access to the community users

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Note: An SNMP community is the group to which appliances and management stations running SNMP belong. It helps define where information is sent. The community name is used to identify the group. The SNMP device or agent may belong to more than one SNMP community.

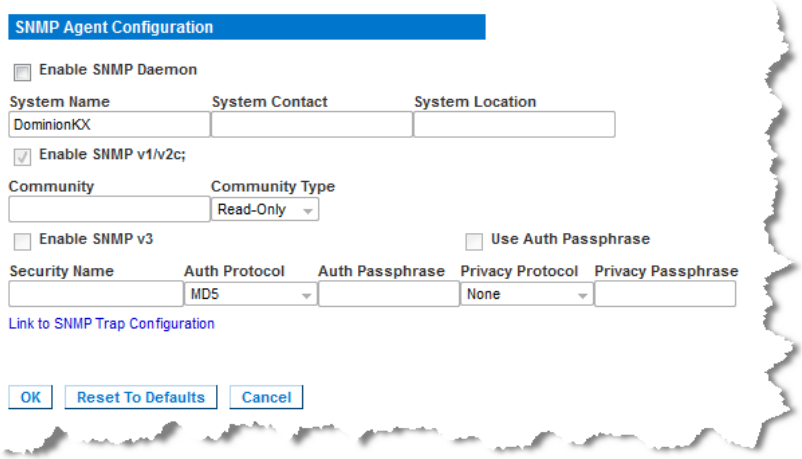
---

5. Complete the following fields for SNMP v3 (if needed):
   - Select Use Auth Passphrase if one is needed. If the Privacy Passphrase is required, the 'Use Auth Passphrase' allows you to have the same passphrase for both without having to re-enter the Auth Passphrase.
   - Security Name - the username or service account name of the entity communicating with the SNMP agent (up to 32 characters).
   - Authentication Protocol - the MD5 or SHA authentication protocol used by the SNMP v3 agent.
   - Authentication Passphrase - the pass phrase required to access the SNMP v3 agent (up to 64 characters).
   - Privacy Protocol - if applicable, the AES or DES algorithm used to encrypt PDU and context data.

   a. Privacy Passphrase - if applicable, the pass phrase used to access the privacy protocol algorithm (up to 64 characters).
6. Click OK to start the SNMP agent service.

Configure SNMP traps on the Event Management - Settings page, which can be quickly accessed by clicking the SNMP Trap Configuration link. See Configuring SNMP Traps for information on creating SNMP traps and List of KX II-101-V2 SNMP Traps for a list of available KX II-101-V2 SNMP traps.

The events that are captured once an SNMP trap is configured are selected on the Event Management - Destination page. See Configuring Event Management - Destinations.



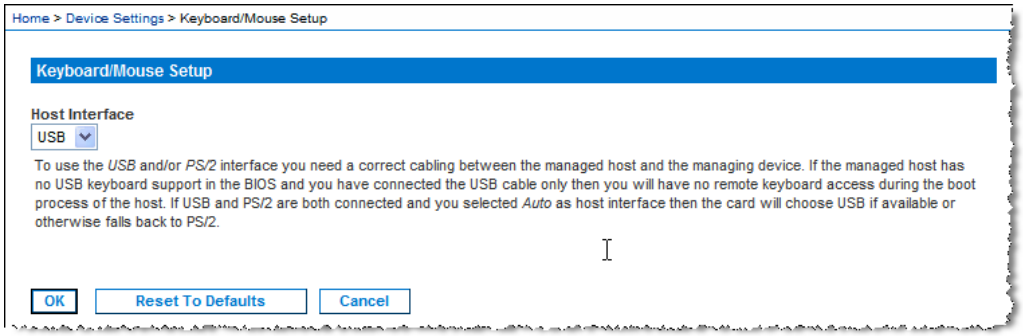
To reset to factory defaults:

- Click Reset To Defaults. All items on the page are set back to their defaults.

WARNING: When using SNMP traps over UDP, it is possible for the KX II-101-V2 and the router that it is attached to fall out of synchronization when the KX II-101-V2 is rebooted, preventing the reboot completed SNMP trap from being logged.

Keyboard/Mouse Setup

Use the Keyboard/Mouse Setup page to configure the Keyboard and Mouse interface between the KX II-101-V2 and the host device.



1. Click Device Settings > Keyboard/Mouse.
2. Select the Host Interface. This selection determines if the KX II-101-V2 sends keyboard and mouse data through the PS/2 or USB connections.
   - Auto - With this setting, the KX II-101-V2 will use a USB connection if available, otherwise it will default to the PS/2 connection.
   - USB - Forces the KX II-101-V2 to use the USB connection to send Keyboard and Mouse data to the host device.
   - PS/2 - Forces the KX II-101-V2 to use the PS/2 connection to send Keyboard and Mouse data to the host device.

   Note: If you are using a Raritan switch on the front-end with a KX II-101-V2, you must set the Host Interface to PS/2 in order for the configuration to work properly. See **Analog KVM Switch** *(on page 146).*
3. Click OK.

To reset to factory defaults:

- Click Reset To Defaults.

Serial Port Settings

Use the Serial Port Settings page to configure how the KX II-101-V2 employs its integrated serial port.

Admin Port

To configure the admin serial port:

1. Choose Device Settings > Serial Port. The Serial Port Settings page appears.
2. Select the Admin Port radio button.
3. Choose one of these options to connect to the KX II-101-V2 directly from a client PC and access the Command Line Interface through a program such as Hyperterminal. See ***Command Line Interface (CLI)*** (on page 185).
4. In the Serial Settings section, configure the following fields:
   - Speed
   - Stop Bits
   - Data Bits
   - Handshake
   - Parity
5. Click OK.

Raritan Power Strip Control

To configure the power strip serial port:

1. Choose Device Settings > Serial Port. The Serial Port Settings page opens.
2. Select the PowerStrip Control radio button. Choose this option when connecting the KX II-101-V2 to a Raritan power strip.
3. Click OK.

Modem

To configure the modem serial port:

1. Choose Device Settings > Serial Port. The Serial Port Settings page opens.
2. Select the Modem radio button. Choose this option when attaching an external modem to the KX II-101-V2 in order to provide dial-up access.
3. In the Modem Settings section, configure the following fields:
   - Serial line speed
   - Modem init string - The default string displayed in the field must be used to enable modem access.

- Modem server IP address - The address the user types to access the KX II-101-V2 web interface once connected via modem.
- Modem client IP address - The address assigned to the user once connected via modem.

4. Click OK.

See ***Modem Access Cable Connections*** (on page 131) for details on the cable connection for modem access and see ***Certified Modems*** (on page 201) for details on certified modems that work with the KX II-101-V2. For information on settings that will give you the best performance when connecting to the KX II-101-V2 via modem, see **Creating, Modifying and Deleting Profiles in MPC** in the **KVM and Serial Clients Guide**.

Modem Access Cable Connections

Use the following cable connection configuration to connect the KX II-101-V2 to a modem:

1. Connect an admin serial cable to the KX II-101-V2.
2. Connect a 9 pin male/male gender changer to the admin serial cable.
3. Connect a null modem cable to other side of the gender changer.
4. Connect the 9 pin male/male gender changer to other end of the null modem cable.
5. Connect a DB9 to male DB25 modem cable between the null modem cable and the modem.

Configuring Date/Time Settings

Use the Date/Time Settings page to specify the date and time for the KX II-101-V2. There are two ways to do this:

- Manually set the date and time.
- Synchronize the date and time with a Network Time Protocol (NTP) server.

To set the date and time:

1. Choose Device Settings > Date/Time. The Date/Time Settings page opens.
2. Choose your time zone from the Time Zone drop-down list.
3. Adjust for daylight savings time by checking the "Adjust for daylight savings time" checkbox.
4. Choose the method to use to set the date and time:
   - User Specified Time - use this option to input the date and time manually. For the User Specified Time option, enter the date and time. For the time, use the hh:mm format (using a 24-hour clock).

- Synchronize with NTP Server - use this option to synchronize the date and time with the Network Time Protocol (NTP) Server.

5. For the Synchronize with NTP Server option:
   a. Enter the IP address of the Primary Time server.
   b. Enter the IP address of the Secondary Time server. **Optional**

Note: If DHCP is selected for the Network Settings on the Network page, the NTP server IP address is automatically retrieved from the DHCP server by default. Manually enter the NTP server IP address by selecting the Override DHCP checkbox.

6. Click OK.

Event Management

The KX II-101-V2 Event Management feature allows you enable and disable the distribution of system events to SNMP Managers, SMTP, the Syslog and the audit log. These events are categorized, and for each event you can determine whether you want the event sent to one or several destinations.

Configuring Event Management - Settings

Configure SNMP traps and the syslog configuration from the Event Management - Settings page. See Configuring SNMP Traps.

Once configured, enable the SNMP traps on the Event Management - Destinations page. See Configuring Event Management - Destinations.

Configuring SNMP Traps

Simple Network Management Protocol (SNMP) is a protocol governing network management and the monitoring of network devices and their functions.

SNMP traps are sent out over a network to gather information.

The traps are configured on the Event Management - Settings page. See List of KX II-101-V2 SNMP Traps for a list of KX II-101-V2 SNMP traps.

SNMP-compliant devices, called agents, store data about themselves in Management Information Bases (MIBs) and respond to the SNMP trap.

SNMP agents are configured on the Device Services page. See ***Configuring SNMP Agents*** (on page 126) for information on configuring SNMP agents and ***Viewing the KX II-101-V2 MIB*** (on page 137) for information on viewing the KX II-101-V2 MIB.

1. Choose Device Settings > Event Management - Settings. The Event Management - Settings page opens.

2. Select the SNMP Logging Enabled checkbox to enable to remaining checkboxes in the section. **Required**
3. Select either or both SNMP v1/v2c Traps Enabled and SNMP Trap v3 Enabled. At least one option must be selected. Once selected, all related fields are enabled. **Required**
4. Complete the following fields for SNMP v1/v2c (if needed):
   - Destination IP/Hostname - the IP or hostname of the SNMP manager. Up to five (5) SNMP managers can be created

   Note: IPv6 addresses cannot exceed 80 characters in length for the host name.

   a. Port Number - the port number used by the SNMP manager

   b. Community - the device's community string

   Note: An SNMP community is the group to which appliances and management stations running SNMP belong. It helps define where information is sent. The community name is used to identify the group. The SNMP device or agent may belong to more than one SNMP community.
5. If it is not already, select the SNMP Trap v3 Enabled checkbox to enable the following fields. Complete the following fields for SNMP v3 (if needed):
   - Destination IP/Hostname - the IP or hostname of the SNMP manager. Up to five (5) SNMP managers can be created

   Note: IPv6 addresses cannot exceed 80 characters in length for the host name.

   a. Port Number - the port number used by the SNMP manager
   - Security Name - the username or service account name of the entity communicating with the SNMP agent (up to 32 characters).
   - Authentication Protocol - the MD5 or SHA authentication protocol used by the SNMP v3 agent.
   - Authentication Passphrase - the pass phrase required to access the SNMP v3 agent (up to 64 characters).
   - Privacy Protocol - if applicable, the AES or DES algorithm used to encrypt PDU and context data.

   a. Privacy Passphrase - if applicable, the pass phrase used to access the privacy protocol algorithm (up to 64 characters).
6. Click OK to create the SNMP traps.

Use the Link to SNMP Agent Configuration link to quickly navigate to the Devices Services page from the Event Management - Settings page.

The events that are captured once an SNMP trap is configured are selected on the Event Management - Destination page. See Configuring Event Management - Destinations.

KX II-101-V2 supports SNMP logging for SNMP v1/v2c and/or v3. SNMP v1/v2c defines message formats and protocol operations when SNMP logging is enabled. SNMP v3 is a security extension of SNMP that provides user authentication, password management and encryption.

To edit existing SNMP traps:

1. Choose Device Settings > Event Management - Settings. The Event Management - Settings page opens.
2. Make changes as needed and click OK to save the changes.

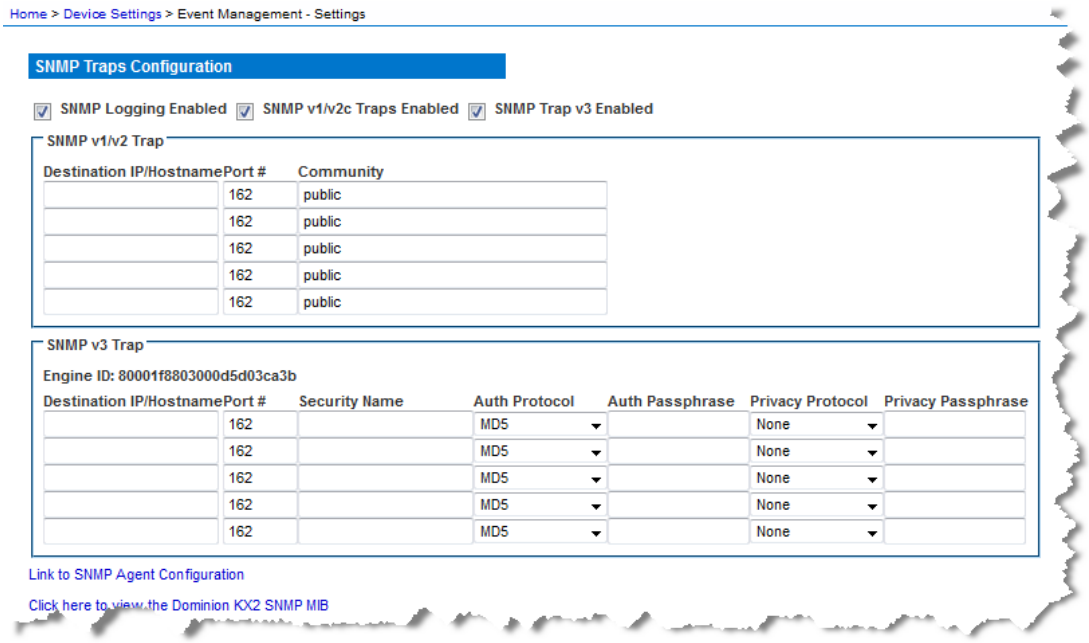
Note: If you disable SNMP settings at any time, the SNMP information is retained so you do not have to reenter if you re-enable the settings.

To delete SNMP traps:

- Clear all of the SNMP trap fields and save.

Use the reset to factory defaults feature to remove the SNMP configuration and set the KX II-101-V2 to its original factory default.

WARNING: When using SNMP traps over UDP, it is possible for the KX II-101-V2 and the router that it is attached to fall out of synchronization when the KX II-101-V2 is rebooted, preventing the reboot completed SNMP trap from being logged.



List of KX II-101-V2 SNMP Traps

SNMP provides the ability to send traps, or notifications, to advise an administrator when one or more conditions have been met. The following table lists the KX II-101-V2 SNMP traps:

Trap Name	Description
configBackup	The device configuration has been backed up.
configRestore	The device configuration has been restored.
deviceUpdateFailed	Device update has failed.
deviceUpgradeCompleted	The KX II-101-V2 has completed update via an RFP file.

Trap Name	Description
deviceUpgradeStarted	The KX II-101-V2 has begun update via an RFP file.
factoryReset	The device has been reset to factory defaults.
firmwareFileDiscarded	Firmware file was discarded.
firmwareUpdateFailed	Firmware update failed.
firmwareValidationFailed	Firmware validation failed.
groupAdded	A group has been added to the KX II-101-V2 system.
groupDeleted	A group has been deleted from the system.
groupModified	A group has been modified.
networkFailure	An Ethernet interface of the product can no longer communicate over the network.
networkParameterChanged	A change has been made to the network parameters.
networkParameterChangedv2	A change has been made to the KX II-101-V2 network parameters.
passwordSettingsChanged	Strong password settings have changed.
portConnect	A previously authenticated user has begun a KVM session.
portConnectv2	A previously authenticated KX II-101-V2 user has begun a KVM session.
portConnectionDenied	A connection to the target port was denied.
portDisconnect	A user engaging in a KVM session closes the session properly.
portDisconnectv2	A KX II-101-V2 user engaging in a KVM session closes the session properly.
portStatusChange	The port has become unavailable.
powerNotification	The power outlet status notification: 1=Active, 0=Inactive.
powerOutletNotification	Power strip device outlet status notification.
rebootCompleted	The KX II-101-V2 has completed its reboot.
rebootStarted	The KX II-101-V2 has begun to reboot, either through cycling power to the system or by a warm reboot from the OS.
securityBannerAction	Security banner was accepted or rejected.

Trap Name	Description
securityBannerChanged	A change has been made to the security banner.
securityViolation	Security violation.
setDateTime	The date and time for the device has been set.
setFIPSMode	FIPS mode has been enabled.
startCCManagement	The device has been put under CommandCenter Management.
stopCCManagement	The device has been removed from CommandCenter Management.
userAdded	A user has been added to the system.
userAuthenticationFailure	A user attempted to log in without a correct username and/or password.
userConnectionLost	A user with an active session has experienced an abnormal session termination.
userDeleted	A user account has been deleted.
userForcedLogout	A user was forcibly logged out by Admin
userLogin	A user has successfully logged into the KX II-101-V2 and has been authenticated.
userLogout	A user has successfully logged out of the KX II-101-V2 properly.
userModified	A user account has been modified.
userPasswordChanged	This event is triggered if the password of any user of the device is modified.
userSessionTimeout	A user with an active session has experienced a session termination due to timeout.
userUploadedCertificate	A user uploaded a SSL certificate.
vmImageConnected	User attempted to mount either a device or image on the target using Virtual Media. For every attempt on device/image mapping (mounting) this event is generated.
vmImageDisconnected	User attempted to unmount a device or image on the target using Virtual Media.

Viewing the KX II-101-V2 MIB

1. Choose Device Settings > Event Management - Settings. The Event Management - Settings page opens.

2. Click the 'Click here to view the 'SNMP MIB' link. The MIB file opens in a browser window.

SysLog Configuration

1. Choose Device Settings > Event Management - Settings. The Event Management - Settings page opens.
2. Select Enable Syslog Forwarding to log the appliance's messages to a remote Syslog server.
3. Type the IP Address/Hostname of your Syslog server in the IP Address field.
4. Click OK.

Note: IPv6 addresses cannot exceed 80 characters in length for the host name.

- Click Reset to Defaults at the bottom of the page to remove the setting.

Configuring Event Management - Destinations

If system events are enabled, SNMP notification events (traps) are generated. The events can be logged to the syslog or audit log.

Events and where the event information is sent is configured on the Event Management - Destinations page.

Note: SNMP, Syslog, and SMTP logging only works when enabled in the Event Management - Settings page.

To select events and their destinations:

1. Choose Device Settings > Event Management - Destinations. The Event Management - Destinations page opens.

   System events are categorized by Device Operation, Device Management, Security, User Activity, and User Group Administration.
2. Select the checkboxes for those event line items you want to enable or disable, and where you want to send the information.

   Tip: Enable or disable entire categories by checking or clearing the Category checkboxes, respectively.
3. Click OK.

To reset to factory defaults:

- Click Reset To Defaults.

WARNING: When using SNMP traps over UDP, it is possible for the KX II-101-V2 and the router that it is attached to fall out of synchronization when the KX II-101-V2 is rebooted, preventing the reboot completed SNMP trap from being logged.

Port Configuration

The Port Configuration page displays a list of the KX II-101-V2 ports. Ports connected to KVM target servers or power strips are displayed in blue and can be edited.

To change a port configuration:

1. Choose Device Settings > Port Configuration. The Port Configuration page opens.

Sorting

This page is initially displayed in port number order, but can be sorted on any of the fields by clicking on the column heading.

- Port Name - The name assigned to the port. A port name displayed in black indicates that you cannot change the name and that the port cannot be edited; port names displayed in blue can be edited.

Note: Do not use apostrophes for the Port Name.

- Port Type - The type of target connected to the port:

Port type	Description
PowerStrip	Power strip/PDU
KVM	KVM target

To edit a port name:

1. Click the Port Name for the port you want to edit.
   - For KVM ports, the Port page opens. In this page, you can name the ports, create power associations, and set target server settings.
   - For power strips, the Port page for power strips opens. In this page, you can name the power strips and their outlets. See ***Power Control*** (on page 141).

Note: The Power Port 1 link is enabled only when a Raritan power strip is connected to the KX II-101-V2 and configured. Otherwise, the link is disabled.

Managing KVM Target Servers (Port Page)

This Port page opens when you select a port from the Port Configuration page that is connected to a target server. From this page, you can make power associations and change the Port Name to something more descriptive.

A server can have up to four power plugs that you can associate with the power strip. In this page, you can define those associations so that you can power on, power off, and power cycle the server from the Port Access page, as shown below.

Note: To use this feature, you must have a Raritan Dominion PX power strip attached to the device. See Connecting the Power Strip.

To access a port configuration:

1. Choose Device Settings > Port Configuration. The Port Configuration page opens.
2. Click the Port Name for the port you want to edit.

Note: The Power Port 1 link is enabled only when a Raritan power strip is connected to the KX II-101-V2 and configured. Otherwise, the link is disabled.

Renaming a Port

To change the port name:

1. Enter a descriptive name, such as the name of the target server. The name can be up to 32 alphanumeric characters and can include special characters.

   Note: Do not use apostrophes for the Port Name.

2. Click OK.

Valid Special Characters

Character	Description	Character	Description
!	Exclamation point	;	Semi-colon
"	Double quote	=	Equal sign
#	Pound sign	>	Greater than sign
$	Dollar sign	?	Question mark
%	Percent sign	@	At sign
&	Ampersand	[	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
:	Colon		

Power Control

The KX II-101-V2 provides remote power control of a target server. To utilize this feature, you must have a Raritan remote power strip.

To use the KX II-101-V2 power control feature:

- Connect the power strip to your target server using the DKX2-101-V2-PDU connector (not included but available from your reseller or Raritan). See Connecting the Power Strip.
- Name the power strip (not included but available from your reseller or Raritan. See ***Naming the Power Strip (Port Page for Power Strips)*** (on page 143).
- Associate outlet in the power strip to the target server. See ***Managing KVM Target Servers (Port Page)*** (on page 140).
- Turn the outlets on the power strip on and off in the Power Strip Device page. See Controlling a Power Strip Device.

Connecting the Power Strip

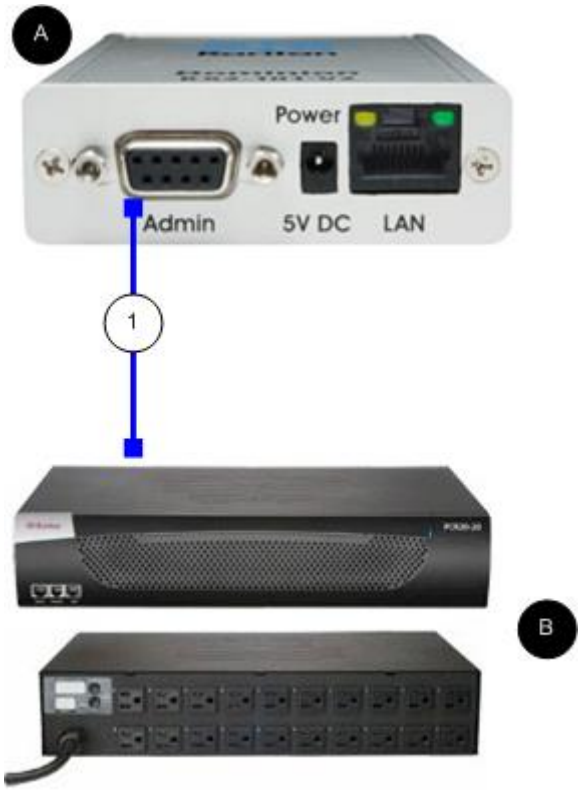


Diagram key	
A	KX II-101-V2
B	Raritan power strip.
1	DKX2-101-V2-PDU (DB9-RJ45 adapter) connector (not included) from the KX II-101-V2 to a Raritan the power strip.

To connect the KX II-101-V2 to a Raritan power strip:

1. Connect the DKX2-101-V2-PDU (DB9-RJ45 adapter) cable to the Admin port of the KX II-101-V2.
2. Connect the DKX2-101-V2-PDU to the serial port connector on the Raritan power strip using a Cat5 cable.
3. Attach an AC power cord to the target server and an available power strip outlet on the power strip.
4. Connect the power strip to an AC power source.

5. Power ON the Raritan power strip.
6. Click to Device Settings > Serial Port to open the Serial Port page.
7. Select the Power Strip Control radio button and click OK. Once this is done, the Power menu is available on the Remote Console.

Naming the Power Strip (Port Page for Power Strips)

Once the KX II-101-V2 is connected to a Raritan remote power strip, the port is displayed on the Port page and you can open that port from the Port Configuration page. The Type and the Name fields are prepopulated. The following information is displayed for each outlet in the power strip: Outlet Number, Name, and Port Association.

Use this page to name the power strip and its outlets. All names can be up to 32 alphanumeric characters and can include special characters.

Note: When a power strip is associated to a target server (port), the outlet name is replaced by the target server name (even if you assigned another name to the outlet).

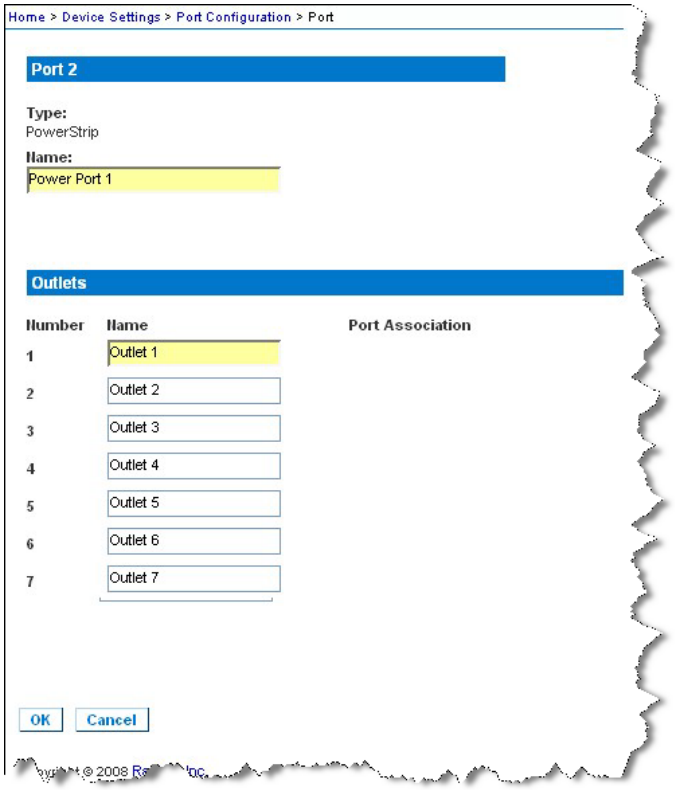
To name the power strip (and outlets):

Note: CommandCenter Service Gateway does not recognize power strip names containing spaces.

1. Change the Name of the power strip to something you will remember.
2. Change the (Outlet) Name if desired. (Outlet names default to Outlet number.)
3. Click OK.

To cancel without saving changes:

- Click Cancel.



Managing Power Associations

To make power associations (associate power strip outlets with the KVM target server):

Note: When a power strip is associated with the target server (port), the outlet name is replaced by the port name. You can change this name in the Port 2 page.

1. Choose the power strip from the Power Strip Name drop-down list.
2. Choose the outlet from the Outlet Name drop-down list.
3. Repeat steps 1 and 2 for each desired power association.
4. Click OK. A confirmation message appears.

To remove a power strip association:

1. Select the appropriate power strip from the Power Strip Name drop-down list.

2. For that power strip, select the appropriate outlet from the Outlet Name drop-down list.
3. From the Outlet Name drop-down list, select None.
4. Click OK. That power strip/outlet association is removed. A confirmation message appears.

To show the power port configuration:

- Choose Home > Device Settings > Port Configuration > [power port name]. The outlet associations for the power strip appear under Outlets.

To edit the power port configuration:

1. Change the power port name by editing the port Name field.
2. Change an outlet name by editing the associated outlets Name field. The outlet name appears in the Power Strip Device page. See Controlling a Power Strip Device.
3. Change the outlet association by clicking the Port Association link next to the outlet name and editing it in the Port 1 page.

Controlling a Power Strip Device

Control the power strip device using the Power Strip Device page. This page enables you to turn each outlet on the power strip on and off.

To control the power strip connected to the KX II-101-V2:

1. Choose Home > Powerstrip. The Power Strip Device page opens.
2. Click the On or Off button for each outlet to run it on or off.
3. Click OK when prompted to confirm your choice.

Note: The KX II-101-V2 can control only one power strip. You cannot select another power strip from the Powerstrip menu.

Analog KVM Switch

You can configure a Raritan analog KVM switch to work with the KX II-101-V2.

The KX II-101-V2's compatibility has been verified with the following Raritan KVM switches:

- SwitchMan SW2, SW4 and SW8
- Master Console MX416 and MXU

Similar products from Raritan or other vendors may be compatible but support is not guaranteed.

Note: In order for the KX II-101-V2 to work with analog KVM switches, the switch hotkey that allows you to switch targets must be set to the Scroll Lock default.

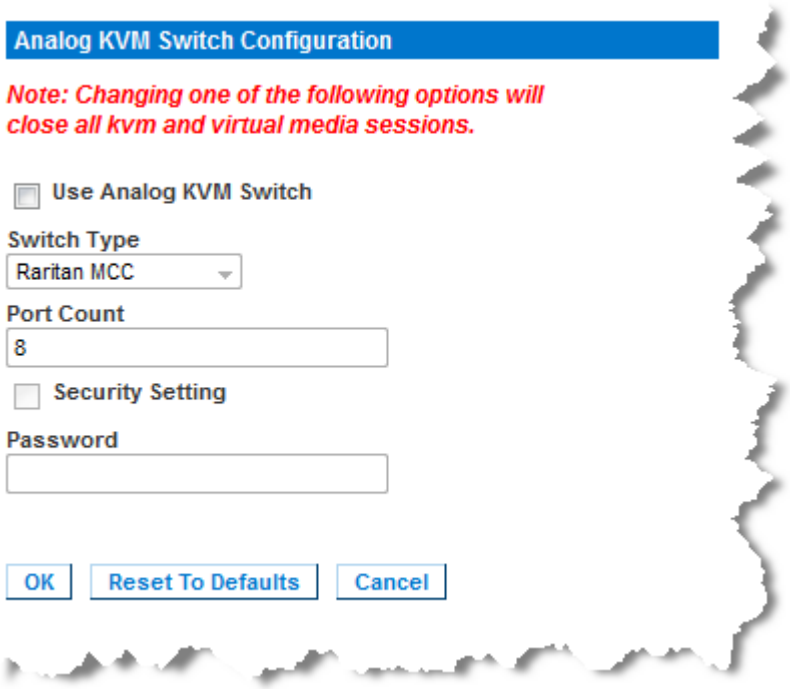
To configure a Raritan analog KVM switch:

1. Set the Host Interface on the Keyboard/Mouse Setup page to PS/2. If you don't do this and try to configure an analog KVM switch, you will receive the error "PS/2 is needed to access the KVM Switch. Please enable PS/2 first!" on the Analog KVM Switch Configuration page. See ***Keyboard/Mouse Setup*** (on page 129).
2. Click Device Settings > Analog KVM Switch. The Analog KVM Switch Configuration page opens.
3. Select the Use Analog KVM Switch checkbox to enable the fields.
4. Select the Raritan switch type from the Switch Type drop-down:
   - Raritan MCC
   - Raritan MX
   - Raritan MXU
   - Raritan Switchman
5. In the Port Count field, enter the number of ports available based on the switch type that is selected. Change the port count if needed or use the default counts. The defaults of the switch selection and default port count, respectively, are:
   - Raritan MCC - 8
   - Raritan MX - 16
   - Raritan MXU - 16
   - Raritan Switchman - 2
6. Select the Security Setting checkbox to enable the security.
7. Enter the password used to access the KVM switch.

8. Click OK to configure the analog KVM switch.

To restore analog KVM switch defaults:

- Click Reset to Defaults.



Resetting the KX II-101-V2 Using the Reset Button

On the top of the device, there is a Reset button. It is recessed to prevent accidental resets (you will need a pointed object to press this button).

The actions that are performed when the Reset button is pressed are defined in the graphical user interface. See **Encryption & Share**

To reset the device:

1. Power off the KX II-101-V2.
2. Use a pointed object to press and hold the Reset button.
3. While continuing to hold the Reset button, power the KX II-101-V2 device back on.
4. Continue holding the Reset button for 10 seconds.
5. Release the Reset button and the KX II-101-V2 reboots. This typically takes three minutes.

Note: If the KX II-101-V2 is set to restore to the factory defaults upon reset, the IP address, user name, and other options will be set accordingly.

Changing the Default GUI Language Setting

The KX II-101-V2 GUI defaults to English, but also supports the following localized languages:

- English (default)
- Japanese
- Simplified Chinese
- Traditional Chinese

To change the GUI language:

1. Select Device Settings > Language. The Language Settings page opens.
2. From the Language drop-down, select the language you want to apply to the GUI.
3. Click Apply. Click Reset Defaults to change back to English.

Note: Once you apply a new language, the online help is also localized to match your language selection.

Chapter 7 Managing USB Connections

In This Chapter

Overview

To broaden the KX II-101-V2's compatibility with different KVM target servers, Raritan provides a user defined real-time selection of USB configuration profile options for a wide range of operating system and BIOS-level server implementations.

The default USB Connection Settings meet the needs of the vast majority of deployed KVM target server configurations. Additional configuration items are provided to meet the specific needs of other commonly deployed server configurations (for example, Linux® and Mac OS X. There are also a number of configuration items, designated by platform name and BIOS revision) to enhance virtual media function compatibility with the target server, for example, when operating at the BIOS level.

USB profiles are configured on the Device Settings > Port Configuration > Port page of the KX II-101-V2 Remote Console. A device administrator can configure the port with the profiles that best meet the needs of the user and the target server configuration.

WARNING: It is possible, based on the selections you make in the Advanced USB Connection Settings section, to cause configuration problems between the KX II-101-V2 and the target server.

Therefore, Raritan strongly recommends that you refer to the most recent User Defined KX II-101-V2 USB Profile Configuration Table hyperlink, which can be accessed directly from the Advanced USB Connection Settings section on the Port page. The information available at the time of this publication can be found in Known USB Profiles.

A user connecting to a KVM target server chooses among these USB Connection Settings depending on the operational state of the KVM target server. For example, if the server is running and the user wants to use the Windows® operating system, it would be best to use the default settings. But if the user wants to change settings in the BIOS menu or boot from a virtual media drive, depending on the target server model, a different USB Connection Setting may be more appropriate.

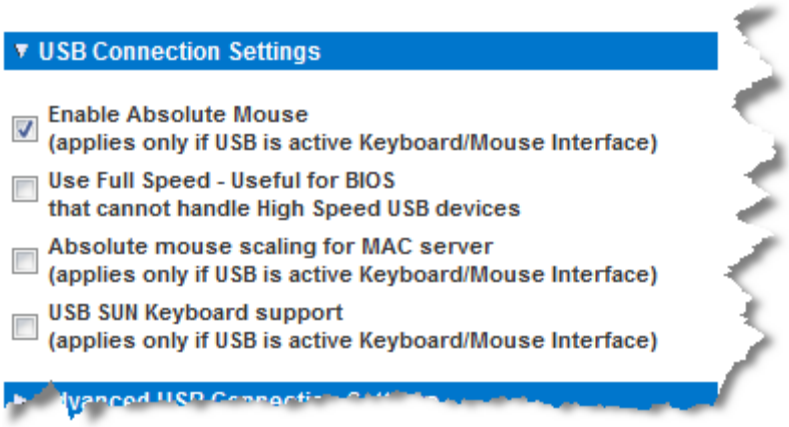
Should none of the USB Connection settings provided by Raritan work with a given KVM target, please contact Raritan Technical Support for assistance.

USB Connection Settings

To define USB connections for the target server:

1. Click Device Settings > Port Configuration to open the Port Configuration page. Click on the port you want to configure.

2. Click USB Connection Settings to expand the USB Connection Settings section.
3. Select the USB connection settings you will be using:
   - Enable Absolute Mouse - Applies only if USB is active Keyboard/Mouse Interface
   - Use Full Speed - Useful for BIOS that cannot accommodate High Speed USB devices
   - Absolute mouse scaling for MAC server - Applies only if USB is active Keyboard/Mouse Interface
   - USB Sun Keyboard support - Applies only if USB is active Keyboard/Mouse Interface
4. Click OK.



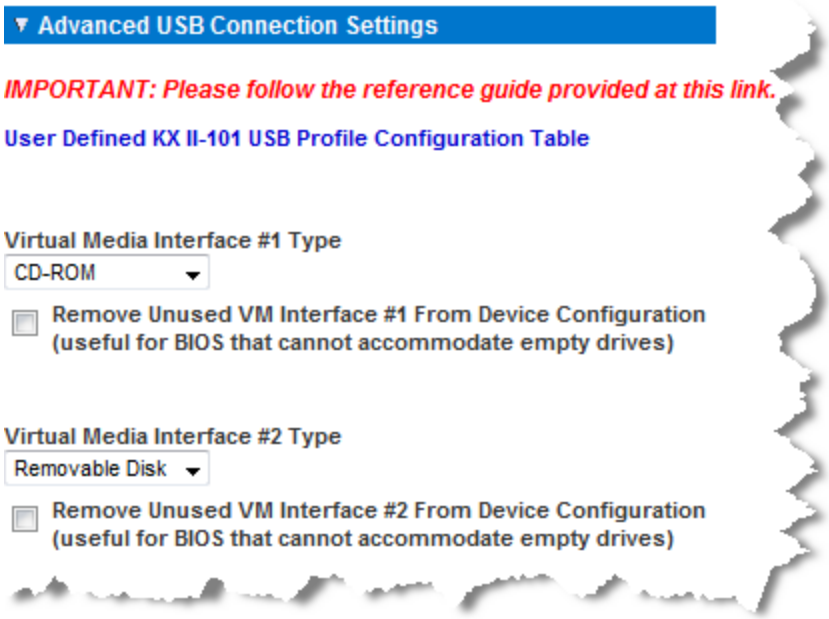
Advanced USB Connection Settings

WARNING: It is possible, based on the selections you make in the Advanced USB Connection Settings section, to cause configuration problems between the KX II-101-V2 and the target server. Therefore, Raritan strongly recommends that you refer to the Known USB Profiles or to the User Defined KX II-101-V2 USB Profiles Connection Configuration Table, which can be accessed by clicking its corresponding link on the Advanced USB Connection Settings section of the Port page .

To define advanced USB connections for the target server:

1. Click Device Settings > Port Configuration to open the Port Configuration page. Click on the port you want to configure.
2. Click Advanced USB Connection Settings to expand the section.

3. Click the User Defined KX II-101 USB Profile Configuration Table link to access the recommended configurations to apply to the Advanced USB Connection Settings section.
4. Configure the following as needed:
   a. Virtual Media Interface #1 Type
   b. Check the Remove Unused VM Interface #1 From Device Configuration checkbox to remove the specified VM type interface (for #1).
   c. Virtual Media Interface #2 Type
   d. Check the Remove Unused VM Interface #2 From Device Configuration checkbox to remove the specified VM type interface (for #2).
5. Click OK.



Chapter 8 Security Management

In This Chapter

Security Settings

From the Security Settings page, you can specify login limitations, user blocking, password rules, and encryption and share settings.

To configure the security settings:

1. Choose Security > Security Settings. The Security Settings page opens.
2. Update the ***Login Limitations*** (on page 153) settings as appropriate.
3. Update the ***Strong Passwords*** (on page 155) settings as appropriate.
4. Update the ***User Blocking*** (on page 156) settings as appropriate.
5. Update the Encryption & Share settings as appropriate.
6. Click OK.

To reset back to defaults:

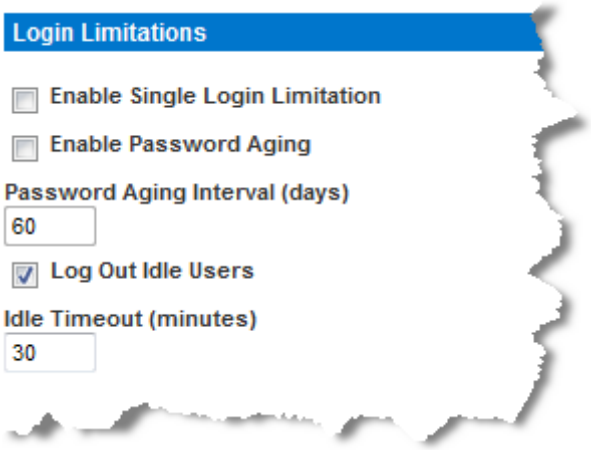
- Click Reset to Defaults.

Login Limitations

Using login limitations, you can specify restrictions for single login, password aging, and the logging out idle users.

Limitation	Description
Enable single login limitation	When selected, only one login per user name is allowed at any time. When deselected, a given user name/password combination can be connected into the appliance from several client workstations simultaneously.
Enable password aging	When selected, all users are required to change their passwords periodically based on the number of days specified in Password Aging

Limitation	Description
	Interval field. This field is enabled and required when the Enable Password Aging checkbox is selected. Enter the number of days after which a password change is required. The default is 60 days.
Log out idle users, After (1-365 minutes)	Select the "Log off idle users" checkbox to automatically disconnect users after the amount of time you specify in the "After (1-365 minutes)" field. If there is no activity from the keyboard or mouse, all sessions and all resources are logged out. If a virtual media session is in progress, however, the session does not timeout. The After field is used to set the amount of time (in minutes) after which an idle user will be logged out. This field is enabled when the Log Out Idle Users option is selected. Up to 365 minutes can be entered as the field value



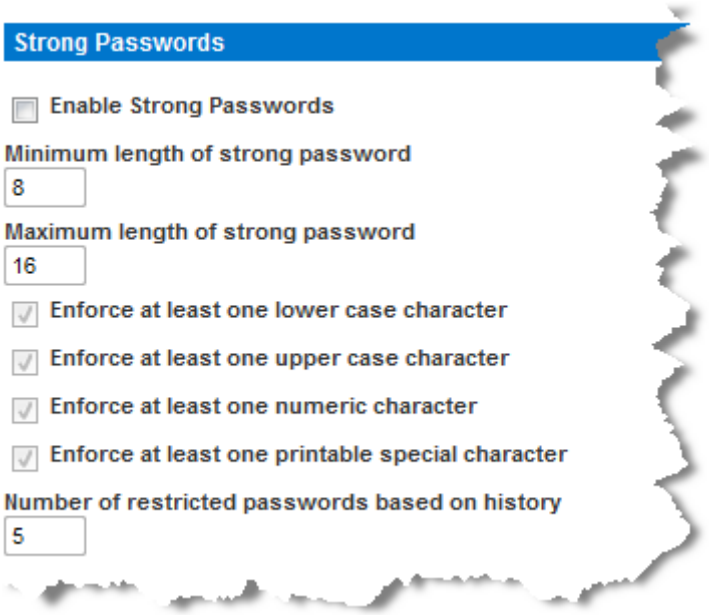
Strong Passwords

Strong passwords provide more secure local authentication for the system. Using strong passwords, you can specify the format of valid KX II-101-V2 local passwords such as minimum and maximum length, required characters, and password history retention.

Strong passwords require user-created passwords to have a minimum of 8 characters with at least one alphabetical character and one nonalphabetical character (punctuation character or number). In addition, the first four characters of the password and the user name cannot match.

When selected, strong password rules are enforced. Users with passwords not meeting strong password criteria will automatically be required to change their password on their next login. When deselected, only the standard format validation is enforced. When selected, the following fields are enabled and required:

Field	Description
Minimum length of strong password	Passwords must be at least 8 characters long. The default is 8, but administrators can change the minimum to 63 characters.
Maximum length of strong password	The default minimum length is 8, but administrators can set the maximum to a default of 16 characters. The maximum length of strong passwords is 63 characters.
Enforce at least one lower case character	When checked, at least one lower case character is required in the password.
Enforce at least one upper case character	When checked, at least one upper case character is required in the password.
Enforce at least one numeric character	When checked, at least one numeric character is required in the password.
Enforce at least one printable special character	When checked, at least one special character (printable) is required in the password.
Number of restricted passwords based on history	This field represents the password history depth. That is, the number of prior passwords that cannot be repeated. The range is 1-12 and the default is 5.



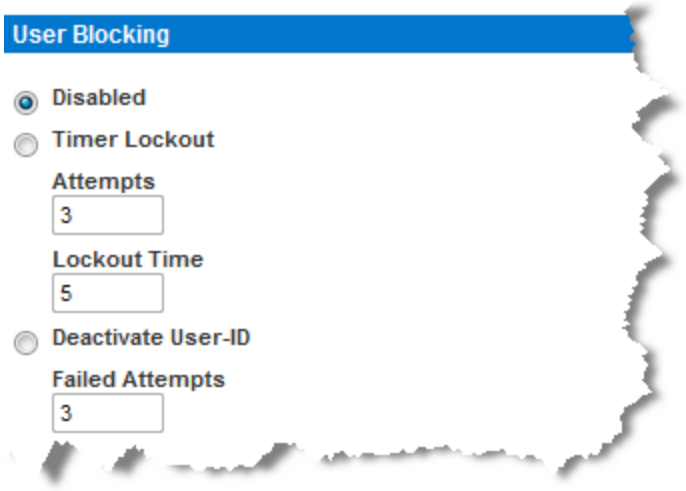
User Blocking

The User Blocking options specify the criteria by which users are blocked from accessing the system after the specified number of unsuccessful login attempts.

The three options are mutually exclusive:

Option	Description
Disabled	The default option. Users are not blocked regardless of the number of times they fail authentication.

Option	Description
Timer Lockout	Users are denied access to the system for the specified amount of time after exceeding the specified number of unsuccessful login attempts. When selected, the following fields are enabled: ▪ Attempts - The number of unsuccessful login attempts after which the user will be locked out. The valid range is 1 - 10 and the default is 3 attempts. ▪ Lockout Time - The amount of time for which the user will be locked out. The valid range is 1 - 1440 minutes and the default is 5 minutes. *Note: Users in the role of Administrator are exempt from the timer lockout settings.*
Deactivate User-ID	When selected, this option specifies that the user will be locked out of the system after the number of failed login attempts specified in the Failed Attempts field: ▪ Failed Attempts - The number of unsuccessful login attempts after which the user's User-ID will be deactivated. This field is enabled when the Deactivate User-ID option is selected. The valid range is 1 - 10. When a user-ID is deactivated after the specified number of failed attempts, the administrator must change the user password and activate the user account by selecting the Active checkbox on the User page.



Encryption & Share

Using the Encryption & Share settings you can specify the type of encryption used, PC and VM share modes, and the type of reset performed when the KX II-101-V2 Reset button is pressed.

WARNING: If you select an encryption mode that is not supported by your browser, you will not be able to access the KX II-101-V2 from your browser.

Note that performance may be impacted once encryption is applied. The extent of the performance impact varies based on the encryption mode.

To configure encryption and share:

1. Choose one of the options from the Encryption Mode drop-down list.

   When an encryption mode is selected, a warning appears, stating that if your browser does not support the selected mode, you will not be able to connect to the KX II-101-V2.

   The warning states "When the Encryption Mode is specified please ensure that your browser supports this encryption mode; otherwise you will not be able to connect to the KX II-101-V2."

Encryption mode	Description
Auto	This is the recommended option. The KX II-101-V2 autonegotiates to the highest level of encryption possible. You *must* select Auto in order for the device and client to successfully negotiate the use of FIPS compliant algorithms.
AES-128	The Advanced Encryption Standard (AES) is a National Institute of Standards and Technology specification for the encryption of electronic data. 128 is the key length. When AES-128 is specified, be certain that your browser supports it, otherwise you will not be able to connect. See ***Checking Your Browser for AES Encryption*** (on page 160) for more information.
AES-256	The Advanced Encryption Standard (AES) is a National Institute of Standards and Technology specification for the encryption of electronic data. 256 is the key length. When AES-256 is specified, be certain that your

Encryption mode	Description
	browser supports it, otherwise you will not be able to connect. See ***Checking Your Browser for AES Encryption*** (on page 160) for more information.

Note: MPC will always negotiate to the highest encryption and will match the Encryption Mode setting if not set to Auto.

Note: If you are running Windows XP® operating system with Service Pack 2, Internet Explorer® 7 cannot connect remotely to the KX II-101-V2 using AES-128 encryption.

1. Apply Encryption Mode to KVM and Virtual Media. When selected, this option applies the selected encryption mode to both KVM and virtual media. After authentication, KVM and virtual media data is also transferred with 128-bit encryption.
2. For government and other high security environments, enable FIPS 140-2 Mode by selecting the Enable FIPS 140-2 checkbox. See ***Enabling FIPS 140-2*** (on page 160) for information on enabling FIPS 140-2.
3. PC Share Mode - Determines global concurrent remote KVM access, enabling up to eight remote users to simultaneously log into one KX II-101-V2 and concurrently view and control the same target server through the device. Click the drop-down list to select one of the following options:
   - Private - No PC share. This is the default mode. Each target server can be accessed exclusively by only one user at a time.
   - PC-Share - KVM target servers can be accessed by up to eight users (administrator or non-administrator) at one time. Each remote user has equal keyboard and mouse control, however, note that uneven control will occur if one user does not stop typing or moving the mouse.
4. If needed, select VM Share Mode. This option is enabled only when PC-Share mode is enabled. When selected, this option permits the sharing of virtual media among multiple users, that is, several users can access the same virtual media session. The default is disabled.
5. If needed, select Local Device Reset Mode. This option specifies which actions are taken when the hardware Reset button (at the back of the device) is depressed. For more information, see ***Resetting the KX II-101-V2 Using the Reset Button*** (on page 147). Choose one of the following options:

Local device reset mode	Description
Enable Local Factory Reset (default)	Returns the KX II-101-V2 device to the factory defaults.

Local device reset mode	Description
Enable Local Admin Password Reset	Resets the local administrator password only. The password is reset to raritan.
Disable All Local Resets	No reset action is taken.

Checking Your Browser for AES Encryption

If you do not know if your browser uses AES, check with the browser manufacturer or navigate to the https://www.fortify.net/sslcheck.html website using the browser with the encryption method you want to check. This website detects your browser's encryption method and displays a report.

AES 256-bit encryption is supported on the following web browsers:

- Firefox®
- Internet Explorer®

In addition to browser support, AES 256-bit encryption requires the installation of Java™ Cryptography Extension® (JCE®) Unlimited Strength Jurisdiction Policy Files.

Jurisdiction files for various JREs™ are available at the “other downloads” section the Java download website.

Enabling FIPS 140-2

For government and other high security environments, enabling FIPS 140-2 mode may be required.

The KX II-101-V2 uses an embedded FIPS 140-2-validated cryptographic module running on a Linux® platform per FIPS 140-2 Implementation Guidance section G.5 guidelines.

Once this mode is enabled, the private key used to generate the SSL certificates must be internally generated; it cannot be downloaded or exported.

Note that performance may be impacted once FIPS 140-2 mode is enabled.

To enable FIPS 140-2:

1. Access the Security Settings page.
2. Enable FIPS 140-2 Mode by selecting the Enable FIPS 140-2 checkbox in the Encryption & Share section of the Security Settings page.

You will utilize FIPS 140-2 approved algorithms for external communications once in FIPS 140-2 mode.

The FIPS cryptographic module is used for encryption of session traffic consisting of video, keyboard, mouse, virtual media and smart card data.

3. Reboot the KX II-101-V2. **Required**

   Once FIPS mode is activated, 'FIPS Mode: Enabled' will be displayed in the Device Information section in the left panel of the screen.

   For additional security, you can also create a new Certificate Signing Request once FIPS mode is activated. This will be created using the required key ciphers. Upload the certificate after it is signed or create a self-signed certificate. The SSL Certificate status will update from 'Not FIPS Mode Compliant' to 'FIPS Mode Compliant'.

   When FIPS mode is activated, key files cannot be downloaded or uploaded. The most recently created CSR will be associated internally with the key file. Further, the SSL Certificate from the CA and its private key are not included in the full restore of the backed-up file. The key cannot be exported from KX II-101-V2.

FIPS 140-2 Support Requirements

The KX II-101-V2 supports the use of FIPS 140-2 approved encryption algorithms. This allows an SSL server and client to successfully negotiate the cipher suite used for the encrypted session when a client is configured for FIPS 140-2 only mode.

Following are the recommendations for using FIPS 140-2 with the KX II-101-V2:

KX II-101-V2

- Set the Encryption & Share to Auto on the Security Settings page. See Encryption & Share.

Microsoft Client

- FIPS 140-2 should be enabled on the client computer and in Internet Explorer.

To enable FIPS 140-2 on a Windows client:

1. Select Control Panel > Administrative Tools > Local Security Policy to open the Local Security Settings dialog.
2. From the navigation tree, select Select Local Policies > Security Options.
3. Enable "System Cryptography: Use FIPS compliant algorithms for encryption, hashing and signing".
4. Reboot the client computer.

To enable FIPS 140-2 in Internet Explorer:

1. In Internet Explorer, select Tools > Internet Options and click on the Advanced tab.
2. Select the Use TLS 1.0 checkbox.
3. Restart the browser.

Configuring IP Access Control

Using IP access control, you can control access to your KX II-101-V2. By setting a global Access Control List (ACL) you are by ensuring that your device does not respond to packets being sent from disallowed IP addresses.

Important: IP address 127.0.0.1 is used by the KX II-101-V2 local port. When creating an IP Access Control list, if 127.0.0.1 is within the range of IP addresses that are blocked, you will not have access to the KX II-101-V2 local port.

To use IP access control:

1. Open the IP Access Control page by selecting Security > IP Access Control. The IP Access Control page opens.
2. Select the Enable IP Access Control checkbox to enable IP access control and the remaining fields on the page.
3. Choose the Default Policy. This is the action taken for IP addresses that are not within the ranges you specify.
   - Accept - IP addresses are allowed access to the KX II-101-V2 device.
   - Drop - IP addresses are denied access to the KX II-101-V2 device.

To add (append) rules:

1. Type the IP address and subnet mask in the IPv4/Mask or IPv6/Prefix Length field.

   Note: The IP address should be entered using CIDR (Classless Inter-Domain Routing notation, CIDR notation consists of two parts. The most significant part is the network address, which identifies a whole network or subnet. The least significant portion is the identifier. The prefix length after the / identifies the length of the subnet mask.

2. Choose the Policy from the drop-down list.
3. Click Append. The rule is added to the bottom of the rules list.

To insert a rule:

1. Type a rule number (#). A rule number is required when using the Insert command.
2. Type the IP address and subnet mask in the IPv4/Mask or IPv6/Prefix Length field.
3. Choose the Policy from the drop-down list.
4. Click Insert. If the rule number you just typed equals an existing rule number, the new rule is placed ahead of the existing rule and all rules are moved down in the list.

Tip: Rule numbers allow you to have more control over the order in which the rules are created.

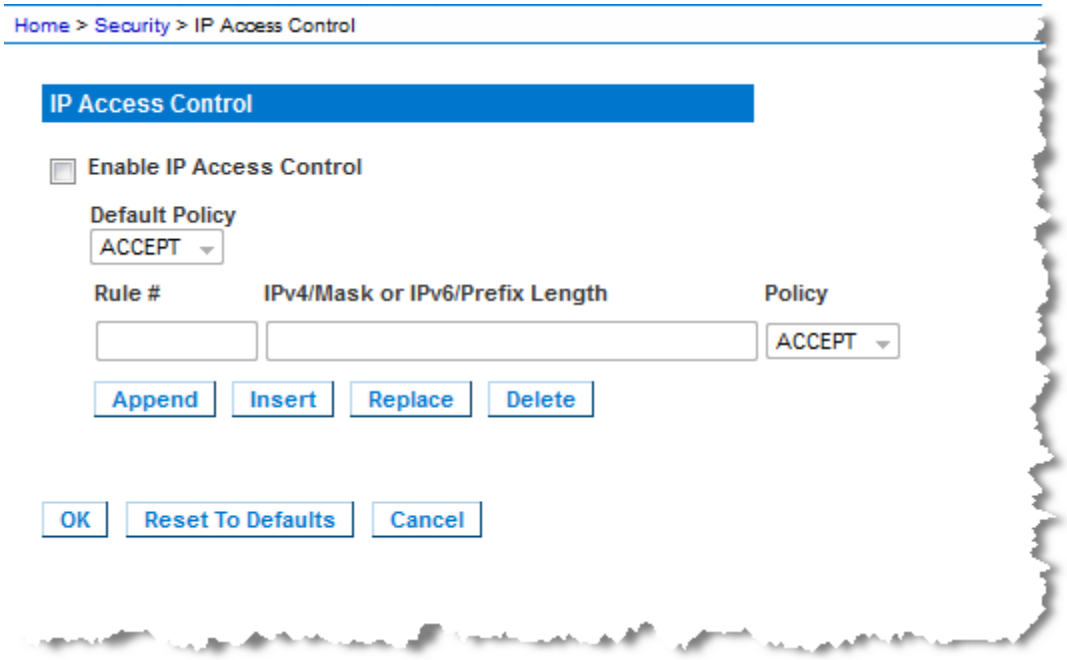
To replace a rule:

1. Specify the rule number you want to replace.
2. Type the IP address and subnet mask in the IPv4/Mask or IPv6/Prefix Length field.
3. Choose the Policy from the drop-down list.
4. Click Replace. Your new rule replaces the original rule with the same rule number.

To delete a rule:

1. Specify the rule number you want to delete.
2. Click Delete.

3. You are prompted to confirm the deletion. Click OK.



To allow access to only one IP address and block all others, change the subnet mask for the rule to /32. For example, if you are trying to exclude all access from the '192.168.51' subnet and the Default Policy is Accept, you would Append a Rule with IP/MASK set to 192.168.51.00/24 and a policy DROP. Or, if you are trying to exclude all access from the 192.168.51 subnet except from a specific IP address (192.168.51.105) and the Default Policy is Accept, you would:

1. Append Rule 1 with IP/Mask set to 192.168.51.105/32 and a policy of Accept.
2. Append Rule 2 with IP/Mask set to 192.168.51.0/24 and a policy of Drop.

If you reversed Rule 1 and Rule 2, 192.168.51.105 would also not be able to access the KX II-101-V2 since it would also have been dropped by the first rule that is encountered.

SSL Certificates

KX II-101-V2 uses the Secure Socket Layer (SSL) protocol for any encrypted network traffic between itself and a connected client.

When establishing a connection, KX II-101-V2 has to identify itself to a client using a cryptographic certificate.

KX II-101-V2 can generate a Certificate Signing Request (CSR) or a self-signed certificate using SHA-2.

The CA verifies the identity of the originator of the CSR.

The CA then returns a certificate containing its signature to the originator. The certificate, bearing the signature of the well-known CA, is used to vouch for the identity of the presenter of the certificate.

Important: Make sure your KX II-101-V2 date/time is set correctly.

When a self-signed certificate is created, the KX II-101-V2 date and time are used to calculate the validity period. If the KX II-101-V2 date and time are not accurate, the certificate's valid from - to date range may be incorrect, causing certificate validation to fail. See ***Configuring Date/Time Settings*** (on page 131).

Note: The CSR must be generated on the KX II-101-V2.

Note: When upgrading firmware, the active certificate and CSR are not replaced.

To create and install a SSL certificate:

1. Select Security > Certificate.
2. Complete the following fields:
   a. Common name - The network name of the KX II-101-V2 once it is installed on your network (usually the fully qualified domain name). The common name is identical to the name used to access the KX II-101-V2 with a web browser, but without the prefix “http://”. In case the name given here and the actual network name differ, the browser displays a security warning when the KX II-101-V2 is accessed using HTTPS.
   b. Organizational unit - This field is used for specifying to which department within an organization the KX II-101-V2 belongs.
   c. Organization - The name of the organization to which the KX II-101-V2 belongs.
   d. Locality/City - The city where the organization is located.
   e. State/Province - The state or province where the organization is located.

f. Country (ISO code) - The country where the organization is located. This is the two-letter ISO code, e.g. DE for Germany, or US for the U.S.

g. Challenge Password - Some certification authorities require a challenge password to authorize later changes on the certificate (e.g. revocation of the certificate). Applicable when generating a CSR for CA Certification.

h. Confirm Challenge Password - Confirmation of the Challenge Password. Applicable when generating a CSR for CA Certification.

i. Email - The email address of a contact person that is responsible for the KX II-101-V2 and its security.

j. Key length - The length of the generated key in bits. 1024 is the default. Up to 4096 is supported.

3. To generate, do one of the following:

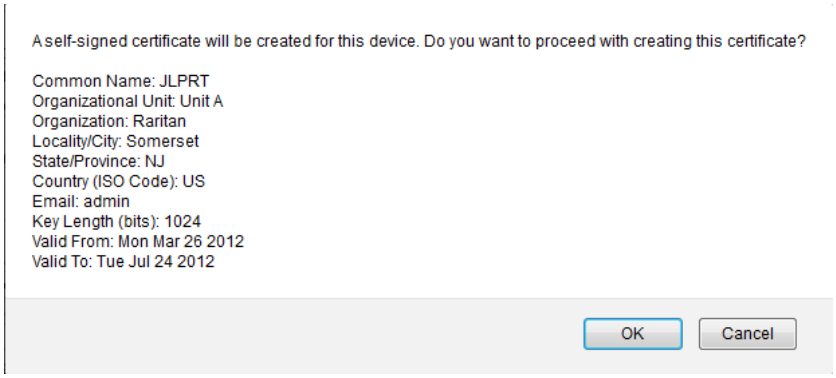
- To generate self-signed certificate, do the following:

a. Select the Create a Self-Signed Certificate checkbox if you need to generate a self-signed certificate. When you select this option, the KX II-101-V2 generates the certificate based on your entries, and acts as the signing certificate authority. The CSR does not need to be exported and used to generate a signed certificate.

b. Specify the number of days for the validity range. Ensure the KX II-101-V2 date and time are correct. If the date and time are not correct, the certificate's valid date range may not be calculated correctly.

c. Click Create.

d. A confirmation dialog is displayed. Click OK to close it.

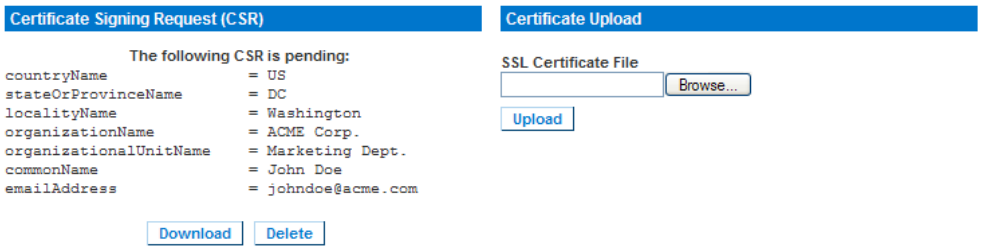


e. Reboot the KX II-101-V2 to activate the self-signed certificate.

- To generate a CSR to send to the CA for certification:

a. Click Create.

b. A message containing all of the information you entered appears.



c. The CSR and the file containing the private key used when generating it can be downloaded by clicking Download CSR.

d. Send the saved CSR to a CA for certification. You will get the new certificate from the CA.

Note: The CSR and the private key file are a matched set and should be treated accordingly. If the signed certificate is not matched with the private key used to generate the original CSR, the certificate will not be useful. This applies to uploading and downloading the CSR and private key files.

- Once you get the certificate from the CA, upload it to the KX II-101-V2 by clicking Upload.
- Reboot the KX II-101-V2 to activate the certificate.

After completing these steps the KX II-101-V2 has its own certificate that is used for identifying itself to its clients.

Important: If you destroy the CSR on the KX II-101-V2 there is no way to get it back! In case you deleted it by mistake, you have to repeat the three steps as described above. To avoid this, use the download function so you will have a copy of the CSR and its private key.

Security Banner

KX II-101-V2 provides you with the ability to add a security banner to the KX II-101-V2 login process. This feature requires users to either accept or decline a security agreement before they can access the KX II-101-V2. The information provided in a security banner will be displayed in a Restricted Service Agreement dialog after users access KX II-101-V2 using their login credentials.

The security banner heading and wording can be customized, or the default text can be used. Additionally, the security banner can be configured to require that a user accepts the security agreement before they are able to access the KX II-101-V2 or it can just be displayed following the login process. If the accept or decline feature is enabled, the user's selection is logged in the audit log.

To configure a security banner:

1. Click Security > Banner to open the Banner page.
2. Select Display Restricted Service Banner to enable the feature.
3. If you want to require users to acknowledge the banner prior to continuing the login process, select Require Acceptance of Restricted Service Banner. In order to acknowledge the banner, users will select a checkbox. If you do not enable this setting, the security banner will only be displayed after the user logs in and will not require users acknowledge it.
4. If needed, change the banner title. This information will be displayed to users as part of the banner. Up to 64 characters can be used.
5. Edit the information in the Restricted Services Banner Message text box. Up to 6000 characters can be entered or uploaded from a text file. To do this, do one of the following:
   a. Edit the text by manually typing in the text box. Click OK.
6. Upload the information from .txt file by selecting the Restricted Services Banner File radio button and using the Browse feature to locate and upload the file. Click OK. Once the file is uploaded, the text from the file will appear in the Restricted Services Banner Message text box.

Chapter 9 Maintenance

In This Chapter

Audit Log

A log is created of KX II-101-V2 system events.

The audit log can contain up to approximately 2K worth of data before it starts overwriting the oldest entries.

To avoid losing audit log data, export the data to a syslog server or SNMP manager. Configure the syslog server or SNMP manager from the Device Settings > Event Management page.

To view the audit log for your KX II-101-V2:

1. Choose Maintenance > Audit Log. The Audit Log page opens.

   The Audit Log page displays events by date and time (most recent events listed first). The Audit Log provides the following information:

   - Date - The date and time that the event occurred based on a 24-hour clock.
   - Event - The event name as listed in the Event Management page.
   - Description - Detailed description of the event.

To save the audit log:

1. Click Save to File. A Save File dialog appears.
2. Choose the desired file name and location and click Save. The audit log is saved locally on your client machine with the name and location specified.

To page through the audit log:

- Use the [Older] and [Newer] links.

Device Information

The Device Information page provides detailed information about your KX II-101-V2 device. This information is helpful should you need to contact Raritan Technical Support.

To view information about your KX II-101-V2:

- Choose Maintenance > Device Information. The Device Information page opens.

The following information is provided about the KX II-101-V2:

- Model
- Hardware Revision
- Firmware Version
- Serial Number
- MAC Address

Backup and Restore

From the Backup/Restore page, you can backup and restore the settings and configuration for your KX II-101-V2.

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 to your team from another KX II-101-V2 by backing up the user configuration settings from the KX II-101-V2 in use and restoring those configurations to the new KX II-101-V2.

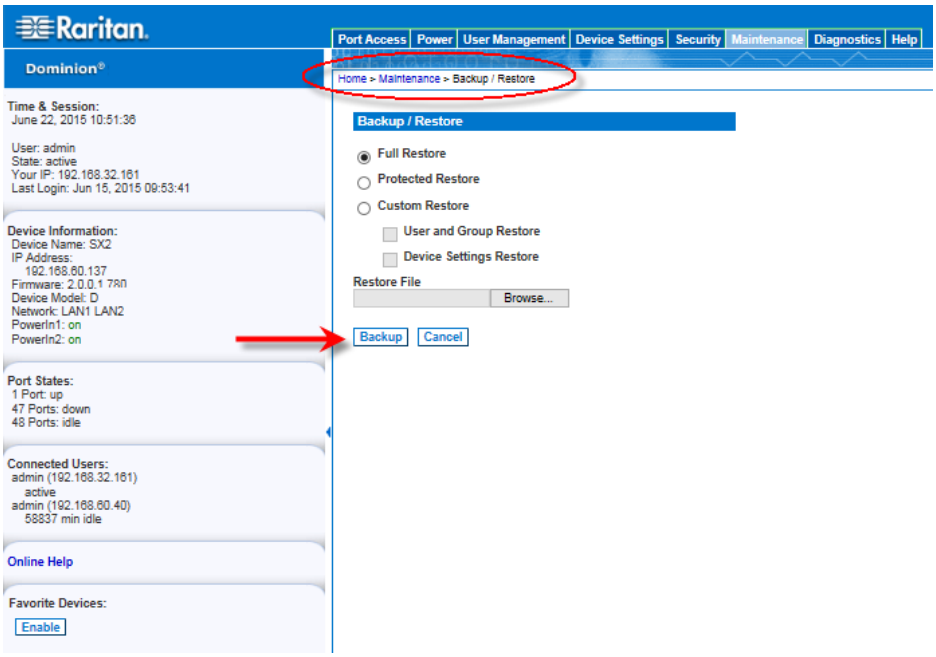
You can also set up one KX II-101-V2 and copy its configuration to multiple KX II-101-V2 devices.

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

If you are using Internet Explorer 7 or later, to back up your KX II-101-V2:

1. Choose Maintenance > Backup/Restore. The Backup/Restore page opens.
2. Click Backup. A File Download dialog appears that contains an Open button. Do not click Open.

In IE 7 (and later), IE is used as the default application to open files, so you are prompted to open the file versus save the file. To avoid this, you must change the default application that is used to open files to WordPad®.



3. To do this:
   a. Save the backup file. The backup file is saved locally on your client machine with the name and location specified.
   b. Once saved, locate the file and right-click on it. Select properties.
   c. In general tab, click Change and select WordPad.

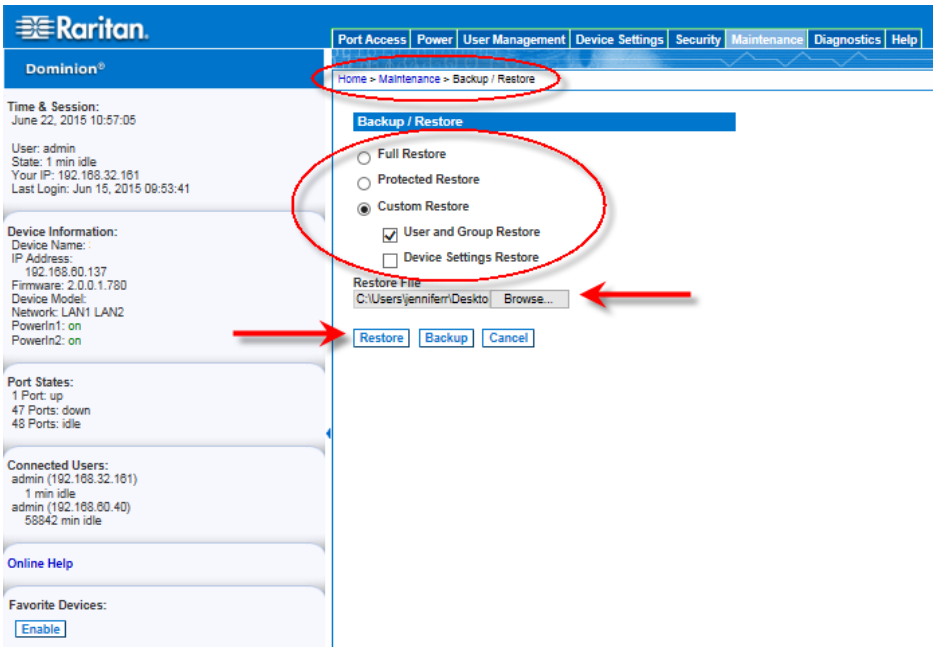
To restore your KX II-101-V2:

WARNING: Exercise caution when restoring your KX II-101-V2 to an earlier version. Usernames and password in place at the time of the backup will be restored. If you do not remember the old administrative usernames and passwords, you will be locked out of the KX II-101-V2.

In addition, if you used a different IP address at the time of the backup, that IP address will be restored as well. If the configuration uses DHCP, you may want to perform this operation only when you have access to the local port to check the IP address after the update.

1. Choose 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 appliance-specific information such as IP address, name, and so forth. With this option, you can setup one KX II-101-V2 and copy the configuration to multiple KX II-101-V2 appliances.
- Custom Restore - With this option, you can select User and Group Restore, Device Settings Restore, or both:
  - User and Group Restore - This option includes only user and group information. This option *does not* restore the certificate and the private key files. Use this option to quickly set up users on a different KX II-101-V2.
  - Device Settings Restore - This option includes only device settings such as power associations, USB profiles, blade chassis related configuration parameters, and Port Group assignments. Use this option to quickly copy the device information.

2. Click Browse. A Choose File dialog appears.
3. Navigate to and select the appropriate backup file and click Open. The selected file is listed in the Restore File field.
4. Click Restore. The configuration (based on the type of restore selected) is restored.
5. 

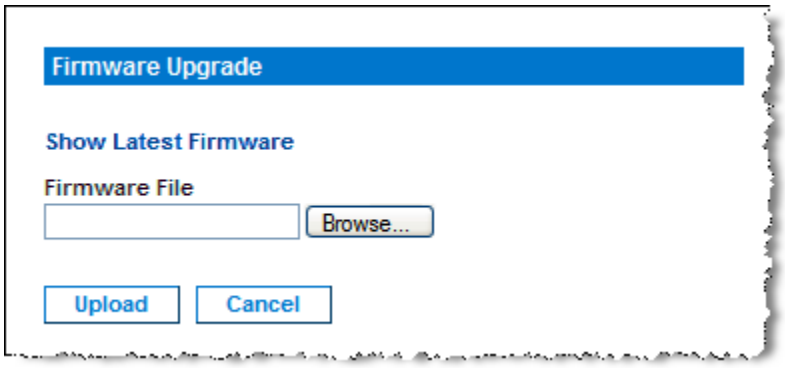
Upgrading Firmware

Use the Firmware Upgrade page to upgrade the firmware for your KX II-101-V2.

Important: Do not turn off your KX II-101-V2 device while the upgrade is in progress - doing so will likely result in damage to the device.

To upgrade your KX II-101-V2 device:

1. Choose Maintenance > Firmware Upgrade. The Firmware Upgrade page opens.



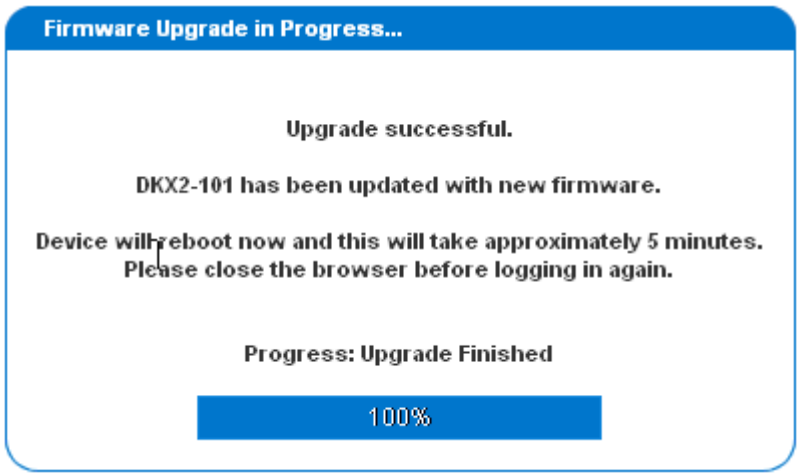
2. Click the Show Latest Firmware link, locate the appropriate Raritan firmware distribution file (*.RFP) from the Firmware Upgrades > KX II-101-V2 page, and download the file.
3. Unzip the file and read all instructions included in the firmware ZIP files carefully before upgrading.

   Note: Copy the firmware update file to a local PC before uploading. Do not load the file from a network drive. Click Browse to navigate to the directory where you unzipped the upgrade file.

4. Click Upload from the Firmware Upgrade page. Information about the upgrade and version numbers is displayed.

   Note: At this point, connected users are logged out, and new login attempts are blocked.

5. Click Upgrade. Wait for the upgrade to complete. Status information and progress bars are displayed during the upgrade. Upon completion of the upgrade, the device reboots.



6. As prompted, close the browser and wait approximately 5 minutes before logging into the KX II-101-V2 again.

   For information about upgrading the device firmware using the Multi-Platform Client, see the **KVM Serial and Clients User Guide.**

Upgrade History

The KX II-101-V2 provides information about upgrades performed on the KX II-101-V2 device.

To view the upgrade history:

- Choose Maintenance > Upgrade History. The Upgrade History page opens.

Factory Reset

Note: It is recommended that you save the audit log prior to performing a factory reset.

*The audit log is deleted when a factory reset is performed and the reset event is not logged in the audit log. For more information about saving the audit log, see **Audit Log**.*

To perform a factory reset:

1. Choose Maintenance > Factory Reset. The Factory Reset page opens.

2. Choose the appropriate reset option from the following options:
   - Full Factory Reset - Removes the entire configuration and resets the device completely to the factory defaults. Note that any management associations with CommandCenter will be broken. Because of the complete nature of this reset, you will be prompted to confirm the factory reset.
   - Network Parameter Reset - Resets the network parameters of the device back to the default values (click Device Settings > Network Settings to access this information):
3. Click Reset to continue. You will be prompted to confirm the factory reset because all network settings will be permanently lost.
4. Click OK proceed. Upon completion, the KX II-101-V2 device is automatically restarted.

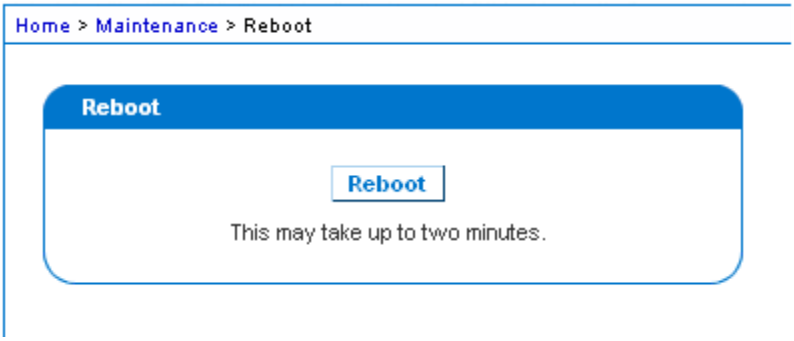
Rebooting the KX II-101-V2

The Reboot page provides a safe and controlled way to reboot your KX II-101-V2. This is the recommended method for rebooting.

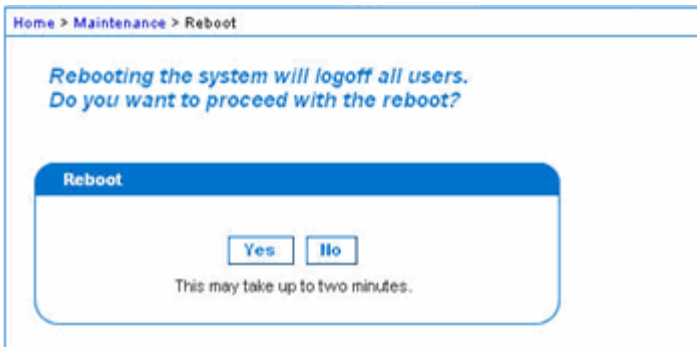
Important: All KVM and serial connections will be closed and all users will be logged off.

To reboot your KX II-101-V2:

1. Choose Maintenance > Reboot. The Reboot page opens.



2. Click Reboot. You are prompted to confirm the action. Click Yes to proceed with the reboot.



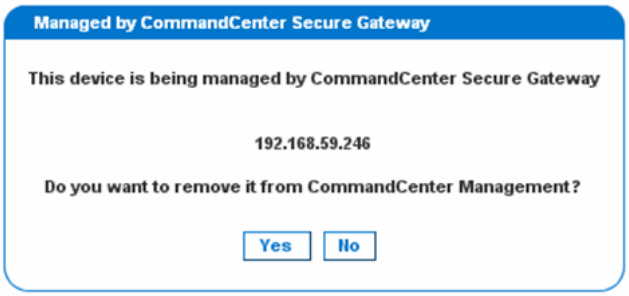
Stopping CC-SG Management

While KX II-101-V2 is under CC-SG management, if you try to access the device directly, you are notified that the device is under CC-SG management.

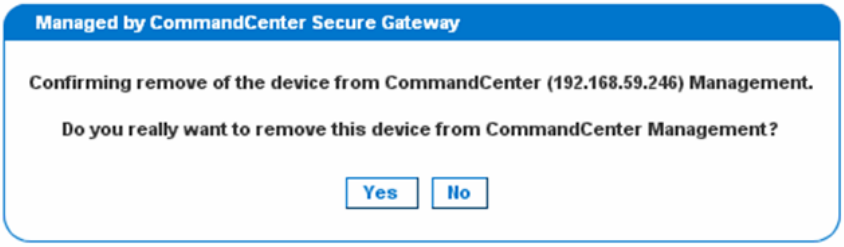
If you are managing KX II-101-V2 through CC-SG and connectivity between CC-SG and the KX II-101-V2 is lost after the specified timeout interval (typically 10 minutes), you are able to end the CC-SG management session from the KX II-101-V2 console.

Note: You must have the appropriate permissions to end CC-SG management of KX II-101-V2.

1. Click Maintenance > Stop CC-SG Management. A message indicating that the device is being managed by CC-SG will be displayed. An option to remove the device from CC-SG management will also be displayed.



2. Click Yes to begin the process of removing the device from CC-SG management. A confirmation message displays.



3. Click Yes to remove the device CC-SG management. A confirmation message displays when CC-SG management has ended.

Chapter 10 Diagnostics

The Diagnostics pages are used for troubleshooting and are intended primarily for the administrator of the KX II-101-V2 device. All of the Diagnostics pages (except Device Diagnostics) run standard networking commands and the information that is displayed is the output of those commands. The Diagnostics menu options help you debug and configure the network settings.

The Device Diagnostics option is intended for use in conjunction with Raritan Technical Support.

In This Chapter

Network Interface Page

The KX II-101-V2 provides information about the status of your network interface.

To view information about your network interface:

- Choose Diagnostics > Network Interface. The Network Interface page opens.

The following information is displayed:

- Whether the Ethernet interface is up or down.
- Whether the gateway is pingable or not.
- The LAN port that is currently active.

To refresh this information:

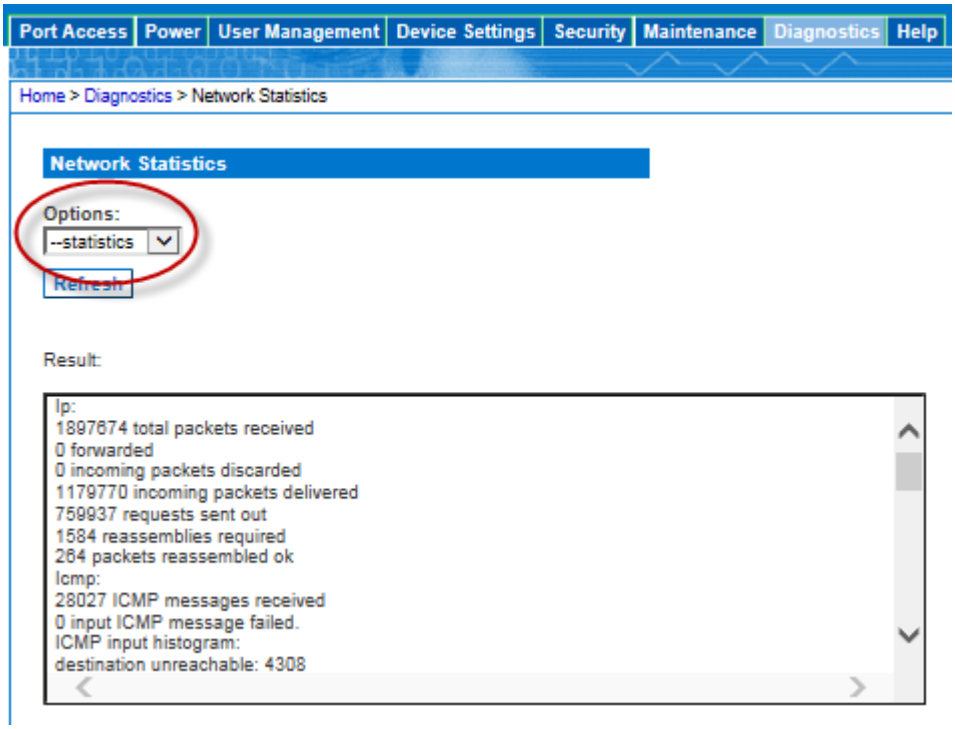
- Click Refresh.

Network Statistics Page

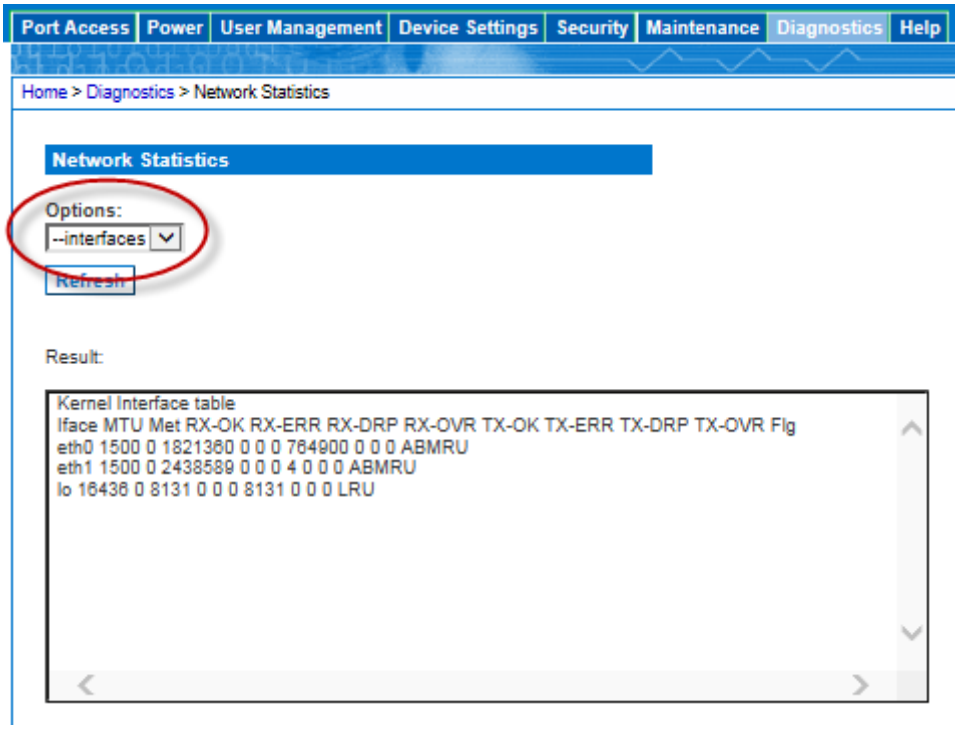
The KX II-101-V2 provides statistics about your network interface.

1. Choose Diagnostics > Network Statistics. The Network Statistics page opens.
2. Choose the appropriate option from the Options drop-down list.

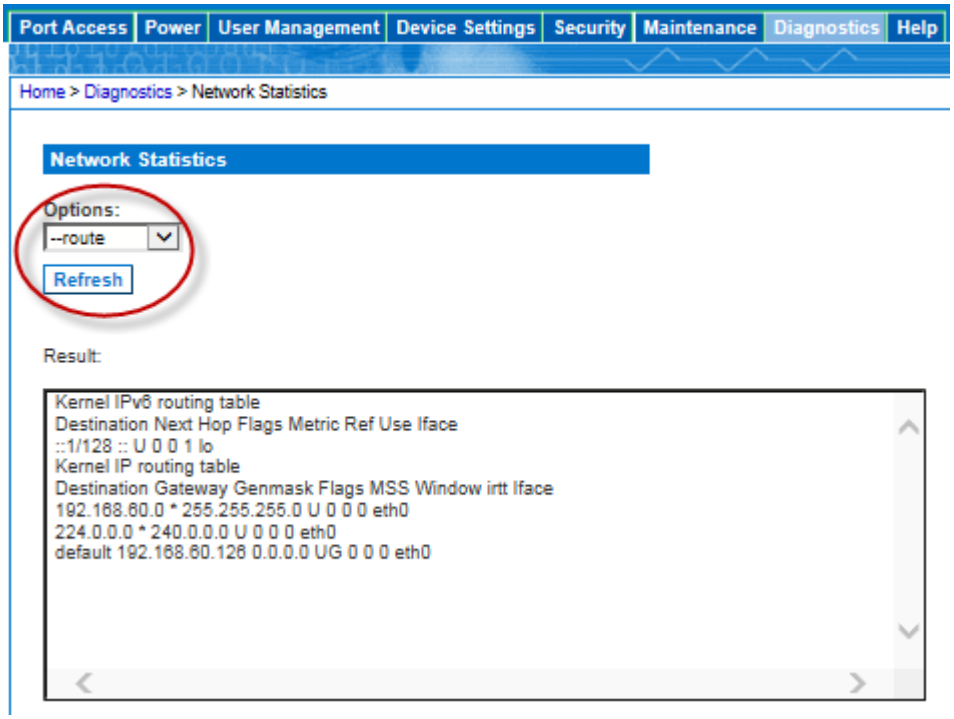
3. Click Refresh. The relevant information is displayed in the Result field.
   - Statistics - Produces a page similar to the one displayed here.



- Interfaces - Produces a page similar to the one displayed here.



- Route - Produces a page similar to the one displayed here.

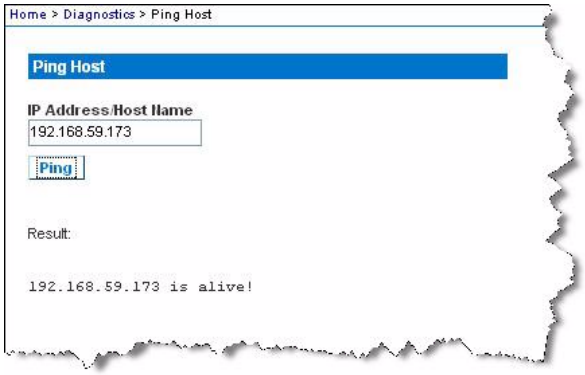


Ping Host Page

Ping is a network tool used to test whether a particular host or IP address is reachable across an IP network. Using the Ping Host page, you can determine if a target server or another KX II-101-V2 is accessible.

To ping the host:

1. Choose Diagnostics > Ping Host. The Ping Host page appears.



1. Type either the hostname or IP address into the IP Address/Host Name field.

Note: The host name cannot exceed 232 characters in length.

2. Click Ping. The results of the ping are displayed in the Result field.

Trace Route to Host Page

Trace route is a network tool used to determine the route taken to the provided hostname or IP address.

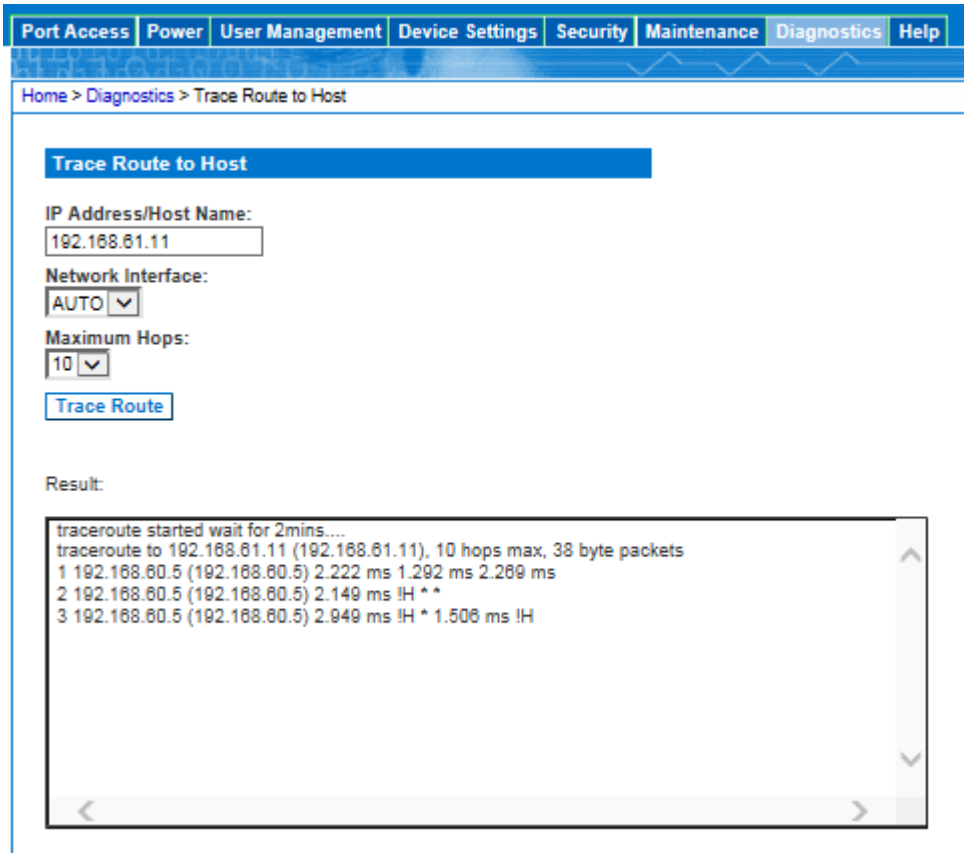
To trace the route to the host:

1. Choose Diagnostics > Trace Route to Host. The Trace Route to Host page opens.
2. Type either the IP address or host name into the IP Address/Host Name field.

Note: The host name cannot exceed 232 characters in length.

3. Choose the maximum hops from the drop-down list (5 to 50 in increments of 5).
4. Click Trace Route. The trace route command is executed for the given hostname or IP address and the maximum hops. The output of trace route is displayed in the Result field.

5. Select the interface in the Network Interface drop-down box to trace route on a specified interface. **Optional**



Device Diagnostics

Note: This page is for use by Raritan Field Engineers or when you are directed by Raritan Technical Support.

The Device Diagnostics page downloads diagnostics information from the KX II-101-V2 to the client machine. A device diagnostics log can be generated with or without running an optional diagnostic script provided by Raritan Technical Support. A diagnostics script produces more information for diagnosing problems.

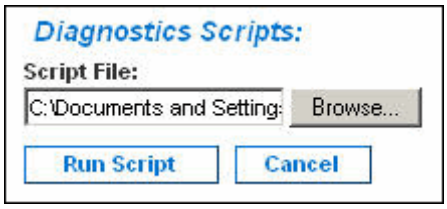
Use the following settings:

- Diagnostics Scripts - Loads a special script provided by Raritan Technical Support during a critical error debugging session. The script is uploaded to the device and executed. **Optional**
- Device Diagnostic Log - Downloads a snapshot of diagnostics messages from the KX II-101-V2 device to the client. This encrypted file is then sent to Raritan Technical Support. Only Raritan can interpret this file.

Note: This page is accessible only by users with administrative privileges.

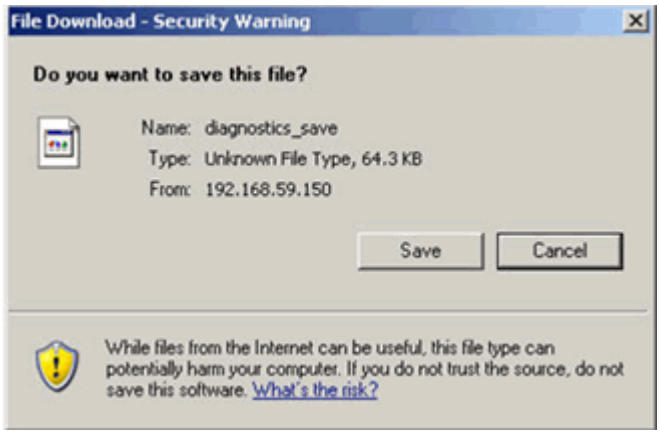
To run the KX II-101-V2 System diagnostics:

1. Choose Diagnostics > Device Diagnostics. The Device Diagnostics page opens.
2. (Optional) Perform the following steps if you have received a diagnostics script file from Raritan Technical Support. Otherwise, skip to step 3.
   a. Retrieve the diagnostics file supplied by Raritan and unzip as necessary.
   b. Click Browse. A Choose File dialog appears.
   c. Navigate to and select this diagnostics file.
   d. Click Open. The file is displayed in the Script File field:



   e. Click Run Script.
3. Create a diagnostics file to send to Raritan Technical Support:

a. Click Save to File. The File Download dialog appears.



b. Click Save. The Save As dialog appears.

c. Navigate to the desired directory and click Save.

4. Email this file as directed by Raritan Technical Support.

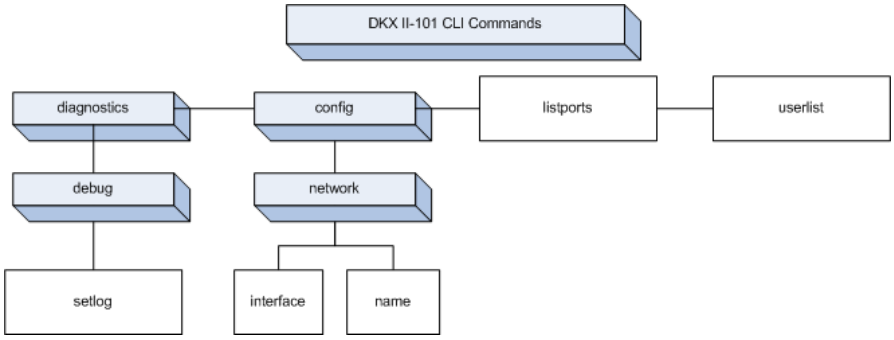
Chapter 11 Command Line Interface (CLI)

In This Chapter

Overview

This chapter provides an overview of the CLI commands that can be used with the KX II-101-V2. See ***CLI Commands*** (on page 189) for a list of commands and definitions and links to the sections in this chapter that give examples of these commands.

The following diagram provides an overview of the CLI commands:



Note: The following common commands can be used from all levels of the CLI to the preceding figure: top, history, logout, quit, and help.

Accessing the KX II-101-V2 Using the CLI

Access the KX II-101-V2 using one of the following methods:

- TELNET via IP connection
- SSH (Secure Shell) via IP connection
- Multi-function admin serial port via RS-232 serial interface with provided cable and a terminal emulation program like HyperTerminal

Several SSH/TELNET clients are available and can be obtained from the following locations:

- PuTTy - ***http://www.chiark.greenend.org.uk/~sgtatham/putty/ http://www.chiark.greenend.org.uk/~sgtatham/putty/***
- SSH Client from ssh.com - ***www.ssh.com http://www.ssh.com***
- Applet SSH Client - ***www.netspace.org/ssh http://www.netspace.org/ssh***
- OpenSSH Client - ***www.openssh.org http://www.openssh.org***

Note: Accessing the CLI by SSH or TELNET requires you to set up access in the Device Services page of the KX II-101-V2 Remote Client. See **Device Services** *(on page 124).*

SSH Connection to the KX II-101-V2

Use any SSH client that supports SSHv2 to connect to the device. You must enable SSH access from the Devices Services page. See ***Device Services*** (on page 124).

Note: For security reasons, SSH V1 connections are not supported by the KX II-101-V2.

SSH Access from a Windows PC

To open an SSH session from a Windows® PC:

1. Launch the SSH client software.
2. Enter the IP address of the KX II-101-V2 server. For example, 192.168.0.192.
3. Choose SSH, which uses the default configuration port 22.
4. Click Open.
5. The `login as:` prompt appears.

SSH Access from a UNIX/Linux Workstation

To open an SSH session from a UNIX®/Linux® workstation:

1. Log in as the user `admin`, enter the following command:

   ```
   ssh -l admin 192.168.30.222
   ```

2. Enter your password when the `Password` prompt appears.

Logging in

To log in:

1. `Login: admin`
2. The password prompt appears. Enter the default password: *raritan*.

   The welcome message appears. You are now logged in as an Administrator.

After reviewing the following ***Navigation of the CLI*** (see "***Navigating the CLI***" on page 187) section, you can perform the initial configuration tasks described in ***Configure the KX II-101-V2 Using a Terminal Emulation Program (Optional)*** (on page 23).

Navigating the CLI

Before using the CLI, it is important to understand CLI navigation and syntax.

There are also some keystroke combinations that simplify CLI use.

CLI Prompts

The Command Line Interface prompt indicates the current command level.

The root portion of the prompt is the login name.

`admin` is the root portion of a command when you establish a direct admin serial port connection via a terminal emulation application.

```
admin >
```

For Telnet/SSH, `admin` is the root portion of the command:

```
admin > config > network >
```

Completion of Commands

The CLI supports the completion of partially-entered commands.

After entering the first few characters of an entry, press the Tab key.

- If the characters form a unique match, the CLI will complete the entry.
- If no match is found, the CLI displays the valid entries for that level.
- If multiple matches are found, the CLI displays all valid entries.

Enter additional text to make the entry unique and press the Tab key to complete the entry.

CLI Syntax -Tips and Shortcuts

Tips

- Commands are listed in alphabetical order.
- Commands are not case sensitive.
- Parameter names are a single word without an underscore.
- Commands without arguments default to show current settings for the command.
- Typing a question mark (`?`) after a command produces help for that command.
- A pipe symbol (`|`) indicates a choice within an optional or required set of keywords or arguments.

Shortcuts

- Press the Up arrow key to display the last entry.
- Press Backspace to delete the last character typed.
- Press Ctrl + C to terminate a command or cancel a command if you typed the wrong parameters.
- Press Enter to execute the command.
- Press Tab to complete a command. For example, `Admin Port > Conf.` The system then displays the `Admin Port > Config >` prompt.

Common Commands for All Command Line Interface Levels

CLI Commands lists the commands that are available at all CLI levels. These commands also help navigate through the CLI.

Command	Description
top	Return to the top level of the CLI hierarchy, or the “username” prompt.

Command	Description
history	Display the last 200 commands the user entered into the KX II-101-V2 CLI.
help	Display an overview of the CLI syntax.
quit	Places the user back one level.
logout	Logs out the user session.

CLI Commands

The table below lists and describes all available CLI commands.

Command	Description
config	Switch to the Configuration menu.
diagnostics	Switch to the diagnostics menu. See ***Diagnostics*** (on page 190).
debug	Switch to debug menu. See ***Debug*** (on page 190).
help	Display an overview of the CLI syntax.
history	Display the current session's command line history.
interface	Configure the KX II-101-V2 network interface.
ipv6_interface	Set/get IPv6 network parameters.
listports	Lists the port, port name, port type, port status, and port availability. See ***Listports Command*** (on page 193).
logout	Logout of the current CLI session.
name	Sets the device name. See ***Name Command*** (on page 192).
network	Displays network configuration and enables you to configure network settings. See ***Network*** (on page 191).
quit	Return to previous command.
setlog	Sets device logging options. See ***Setlog Command*** (on page 190).
top	Return to the root menu.
userlist	Lists the number of active users, user names, port, and status. See ***Userlist Command*** (on page 193).

Diagnostics

The Diagnostics menu enables you to set the logging options for different modules of the KX II-101-V2. You should set logging options only when instructed by a Raritan Technical Support engineer. These logging options enable a support engineer to get the right kind of information for debugging and troubleshooting purposes. When instructed by a support engineer, you will be told how to set logging options and how to generate a log file to send to Raritan technical support.

Important: Set logging options only under the supervision of a Raritan Technical Support engineer.

Debug

The Diagnostics > Debug menu enables you to choose the Setlog command to set logging options for the KX II-101-V2.

Setlog Command

The Setlog command enables you set the logging level for different modules of the KX II-101-V2 and to view the current logging levels for each module. The syntax for the setlog command is:

```
setlog [module <module>] [level <level>] [vflag <vflag>] [verbose
<on|off>]

 Set/Get diag log level
```

The Setlog command options are described in the following table. Raritan Technical Support will tell you how to configure these settings.

Command Option	Description
module	The module name.
level	The diagnostics level: ▪ err ▪ warn ▪ info ▪ debug ▪ trace
vflag	The type of verbose flag: ▪ timestamp ▪ module ▪ thread ▪ fileline

Command Option	Description
verbose [on|off]	Turns verbose logging on and off.

Setlog Command Example

The following Setlog command sets the logging level to debug with verbose logging on for the libpp_serial module.

```
Setlog module libpp_serial level debug verbose on
```

Configuration

The Configuration menu enables you to access the network commands used to configure the network interface and set the device name.

Network

The Configuration > Network commands are used to configure the KX II-101-V2 network connection and device name.

Command	Description
interface	Configure the KX II-101-V2 device network interface.
name	Set the device name.
ipv6_interface	Set/get IPv6 network parameters.

Interface Command

The interface command is used to configure the KX II-101-V2 network interface. When the command is accepted, the device will drop the HTTP/HTTPS connection and initialize a new network connection. All HTTP/HTTPS users must reconnect to the device using the new IP address and the correct username and password. See ***Installation and Configuration*** (on page 7).

The syntax of the interface command is:

```
interface [ipauto <none|dhcp>] [ip <ipaddress>] [mask
<subnetmask>] [gw <ipaddress>] [mode
<auto/10hdx/10fdx/100hdx/100fdx]
```

The network command options are described in the following table.

Command Option	Description
ipauto	Static or dynamic IP address
ip ipaddress	IP address of the KX II-101-V2 assigned for access from the IP network
mask subnetmask	Subnet mask obtained from the IP administrator
gw ipaddress	Gateway IP address obtained from the IP administrator
mode <auto | 100fdx>	Set Ethernet Mode to auto detect or force 100MB/s full duplex (100fdx)

Interface Command Example

The following command sets the IP address, mask, and gateway addresses, and sets the mode to auto detect.

```
Admin Port > Config > Network > interface ipauto none
ip 192.168.50.12 mask 255.255.255.0 gw 192.168.51.12 mode
auto
```

Name Command

The name command is used to configure the appliance and host name.

Syntax

```
name [appliancename name] [domain name] [force
<true|false>]
```

name Command Example

The following command sets the appliance name:

```
Admin Port > Config > Network > name appliancename
<appliance name> domain <host name> force trues
```

IPv6 Command

Use the IPv6_interface command to set IPv6 network parameters and retrieve existing IPv6 parameters.

```
Ipv6_interface mode enable ipauto none ip
2001:db8:290c:1291::17 prefixlen 128 gw
2001:db8:290c:1291::1
```

Listports Command

The Listports command lists the number of active users, user names, port, and status.

Listports Command Example

```
Admin Port > listports

Port Port                Port Port   Port

No.  Name                 Type Status Availability

1  - Dominion_KXII-101_V2_Port KVM  up     idle
```

Userlist Command

The Userlist command lists the port, port name, port type, port status, and port availability.

Userlist Command Example

```
Admin Port > Userlist

Active user number: 1

User Name | From      | Status

-------------------------------------------------
-

admin     | Admin Port | active
```

Chapter 12 CC-SG Management

In This Chapter

Overview

CC-SG can managed KX II-101-V2. Once under CC-SG management, mobile access to the KX II-101-V2 is supported from an iPad® or iPhone®. For information on adding KX II-101-V2 to CC-SG so CC-SG can manage the device and for information on setting up mobile access to the device, see the CC-SG documentation.

When a KX II-101-V2 device is under CommandCenter Secure Gateway control and you attempt to access the device directly using the KX II-101-V2 Remote Console, the following message appears (after entry of a valid user name and password).

Removing a KX II-101-V2 from CC-SG Management

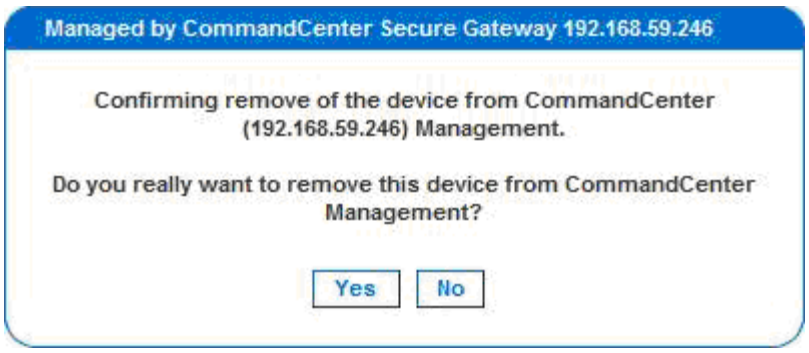
Unless the KX II-101-V2 is released from CC-SG control, you cannot access the device directly. However, if the KX II-101-V2 does not receive heartbeat messages from CommandCenter (for example, CommandCenter is not on the network), you can release the KX II-101-V2 from CC-SG control in order to access the device. This is accomplished by using the CC Unmanage feature.

Note: Maintenance permission is required to use this feature.

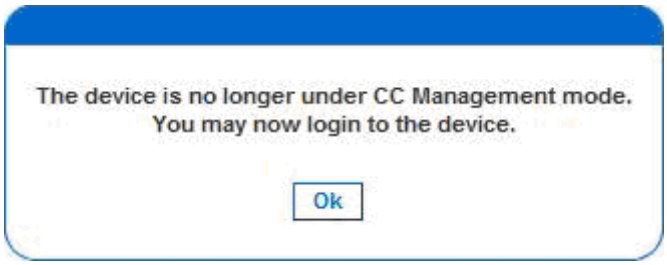
When no heartbeat messages are received, the following message appears when attempting to access the device directly.

To remove the device from CC-SG management (to use CC Unmanage):

1. Click Yes. You are prompted to confirm the action.



2. Click Yes. A message appears, confirming that the device is no longer under CC management.



3. Click OK. The KX II-101-V2 login page opens.

Using CC-SG in Proxy Mode

Virtual KVM Client Version not Known from CC-SG Proxy Mode

When the Virtual KVM Client is launched from CommandCenter Secure Gateway (CC-SG) in proxy mode, the Virtual KVM Client version is unknown. In the About Raritan Virtual KVM Client dialog, the version is displayed as “Version Unknown”.

Proxy Mode and MPC

If you are using the KX II-101-V2 in a CC-SG configuration, do not use the CC-SG proxy mode if you are planning to use the Multi-Platform Client (MPC).

Appendix A Specifications

In This Chapter

Physical Specifications

KX II-101-V2...	Description
Form Factor	Zero-U form factor; rack mountable vertically or horizontally (bracket kit included)
Dimensions (DxWxH)	4.055" x 2.913" x 1.063"; 103 x 74 x 27mm
Weight	0.6498 lbs; 0.295 kg
Power	AC/DC (100-240V~/ 6VDC) power adapter or Power over Ethernet (PoE); compatible with IEEE 802.3af Mid-Span Power Insertion Signal-Pair Power Insertion Class 2 PoE powered device (under 7Wts)
Operating temperature	0° - 40°C (32° - 104°F)
Humidity	20% - 85% RH
Indicators: Blue RARITAN back-lit logo Yellow and Green LED	Boot-up and power indicator Network activity and connection speed indicator
Local Connection:	1 - Mini USB port for USB keyboard / mouse and virtual media connectivity to the target 1 - MiniDIN9 port for multifunction serial port of full RS-232 features, modem connection, and

KX II-101-V2...	Description
	Dominion PX connectivity
Remote Connection: Network Protocols	1 Ethernet (RJ45) port with activity status indicator TCP/IP, TELNET, SSH, HTTP, HTTPS, secure LDAP, RADIUS, LDAP, SNMP v2 and v3, DHCP and SNTP, dual-stack: IPv4 and IPv6
Warranty	Two years with advanced replacement*

Supported Operating Systems, Browsers and Java Versions

Operating Systems	Browsers	Java
Windows 7® Home Premium SP1 64-bit	Internet Explorer® 8, 9, 10, 11 Firefox® 21, 24 and 25 Chrome® 31 Safari® 6.1	Jave™ 1.7 up to update 51
Windows 7 Ultimate SP1 64-bit		
Windows 7 Ultimate 32-bit		
Windows 8® 64-bit		
Windows XP® Home Edition with SP 3		
Windows Server 2012® Standard 64-bit		
Windows Server 2008 ®		
Windows Server 2003®		
Linux®		
openSUSE® 10, 11	Firefox 16.0.2	
Fedora® 13, 14	Firefox 24	
Mac® OS X Mountain Lion® 10.7.5	Firefox 25 Safari 6.0.5	
Mac OS X Mountain Lion 10.8.5 *	Firefox 25 Safari 6.1.1	
Solaris®	Firefox 3.6.23	

**Note: Upon upgrading from OS X 10.8.2 to OS X 10.8.3, Safari® may block Java™.*

Virtual KVM Client, VKCS, Multi-Platform Client (MPC) and Active KVM Client (AKC) Requirements

Microsoft .NET® 4.0 (or later) is required to use KX II-101-V2 with the Microsoft Windows®-based Active KVM Client (AKC).

Jave™ 1.7 is required to use the Java-based KX II-101-V2 Virtual KVM Client.. Java 1.8.0_40 is required to use the VKCS.

KX II-101-V2 checks your current Java version and prompts you to update it if it is not compatible.

VKC and the Multi-Platform Client (MPC) can only be launched from a 32-bit browser, or 64-bit browser.

Following are the Java 32-bit and 64-bit Windows operating system requirements.

Mode	Operating system	Browser
Windows x64 32-bit mode	Windows XP®	• Internet Explorer® 6.0 SP1+ or 7.0, 9.0, 10.0 or 11.0 • Firefox® 1.06 - 4 or later
	Windows Server 2003®	• Internet Explorer 6.0 SP1++, 9.0, 10.0 or 11.0 • Firefox 1.06 - 3
	Windows Vista®	• Internet Explorer 9.0, 10.0 or 11.0
	Windows 7®	• Internet Explorer 9.0, 10.0 or 11.0 • Firefox 1.06 - 4 or later
Windows x64 64-bit mode	Windows XP	64bit OS, 32bit browsers: • Internet Explorer 6.0 SP1+, 7.0 or 8.0 • Firefox 1.06 - 4 or later 64bit mode, 64bit browsers: ▪ Internet Explorer 7.0, 8.0, 9.0, 10.0 or 11.0
	Windows XP Professional®	
	Windows XP Tablet®	
	Windows Vista	
	Windows Server 2003	
	Windows Server 2008	

Mode	Operating system	Browser
	Windows 7	

Note that a JRE™ plug-in is available for the Windows® 32-bit and 64-bit operating systems.

See Java Runtime Environment (JRE) Notes for additional information.

JRE Requirements and Browser Considerations for Mac

Java Runtime Environment Requirements for Mac

Install Java Runtime Environment 8 (JRE)® on PCs and Macs® when using the Virtual KVM Client (VKC) to access target devices via KX II-101-V2.

This ensures in order to provide high performance, KVM-over-IP video processing when remotely accessing target devices/PCs/Macs.

The latest version of JRE for Mac can be downloaded from the Oracle Support website.

Browser Considerations for Mac

Java may be disabled by default in certain browsers. Enable Java and accept all security warnings in order to use KX II-101-V2.

Certain versions of Safari® block Java for security reasons. Since Java is required to use KX II-101-V2, Raritan recommends you use Firefox® instead.

Additionally, you may be required to navigate through a number of messages. Select 'Do Not Block' if these messages are displayed.

Connectors

Interface type	Length		Description
	Inches	Centimeters	
KVM cable with PS/2 and USB	15”	38 cm	Integrated cable
MiniDin9(M) to DB9(F)	72”	182 cm	Cable for serial
DKX2-101-V2-PDU (optional)	70.86"	180 cm	Cable for connecting to a Dominion PX

Certified Modems

- USRobotics® 56K 5686E
- ZOOM® v90
- ZOOM v92
- USRobotics Sportster® 56K
- USRobotics Courier™ 56K

Supported Video Resolutions

Ensure each target server's video resolution and refresh rate are supported by the KX II-101-V2, and that the signal is noninterlaced.

Video resolution and cable length are important factors in the ability to obtain mouse synchronization.

The KX II-101-V2 supports these resolutions:

Resolutions	
640x350 @70Hz	1024x768@85
640x350 @85Hz	1024x768 @75Hz
640x400 @56Hz	1024x768 @90Hz
640x400 @84Hz	1024x768 @100Hz
640x400 @85Hz	1152x864 @60Hz
640x480 @60Hz	1152x864 @70Hz
640x480 @66.6Hz	1152x864 @75Hz
640x480 @72Hz	1152x864 @85Hz
640x480 @75Hz	1152x870 @75.1Hz
640x480 @85Hz	1152x900 @66Hz
720x400 @70Hz	1152x900 @76Hz
720x400 @84Hz	1280x720@60Hz
720x400 @85Hz	1280x960 @60Hz
800x600 @56Hz	1280x960 @85Hz
800x600 @60Hz	1280x1024 @60Hz
800x600 @70Hz	1280x1024 @75Hz
800x600 @72Hz	1280x1024 @85Hz
800x600 @75Hz	1360x768@60Hz

Resolutions	
800x600 @85Hz	1366x768@60Hz
800x600 @90Hz	1368x768@60Hz
800x600 @100Hz	1400x1050@60Hz
832x624 @75.1Hz	1440x900@60Hz
1024x768 @60Hz	1600x1200 @60Hz
1024x768@70	1680x1050@60Hz
1024x768@72	1920x1080@60Hz

Note: Composite Sync and Sync-on-Green video require an additional adapter.

Note: Some resolutions may not be available by default. If you do not see a resolution, plug in the monitor first, remove the monitor and then plug in the CIM.

Note: If the 1440x900 and 1680x1050 resolutions are not displayed but are supported by the target server's graphics adapter card, a DDC-1440 or DDC-1680 adapter may be required.

Supported Keyboard Languages

The KX II-101-V2 provides keyboard support for the languages listed in the following table.

Language	Regions	Keyboard layout
US English	United States of America and most of English-speaking countries: for example, Canada, Australia, and New Zealand.	US Keyboard layout
US English International	United States of America and most of English-speaking countries: for example, Netherlands	US Keyboard layout
UK English	United Kingdom	UK layout keyboard
Chinese Traditional	Hong Kong S. A. R., Republic of China (Taiwan)	Chinese Traditional
Chinese Simplified	Mainland of the People's Republic of China	Chinese Simplified
Korean	South Korea	Dubeolsik Hangul

Language	Regions	Keyboard layout
Japanese	Japan	JIS Keyboard
French	France	French (AZERTY) layout keyboard.
German	Germany and Austria	German keyboard (QWERTZ layout)
French	Belgium	Belgian
Norwegian	Norway	Norwegian
Danish	Denmark	Danish
Swedish	Sweden	Swedish
Hungarian	Hungary	Hungarian
Slovenian	Slovenia	Slovenian
Italian	Italy	Italian
Spanish	Spain and most Spanish speaking countries	Spanish
Portuguese	Portugal	Portuguese

TCP and UDP Ports Used

Port	Description
HTTP, Port 80	This port can be configured as needed. See ***HTTP and HTTPS Port Settings*** (on page 125). By default, all requests received by the KX II-101-V2 via HTTP (port 80) are automatically forwarded to HTTPS for complete security. The KX II-101-V2 responds to Port 80 for user convenience, relieving users from having to explicitly type in the URL field to access the KX II-101-V2, while still preserving complete security.
HTTPS, Port 443	This port can be configured as needed. See ***HTTP and HTTPS Port Settings*** (on page 125). By default, this port is used for multiple purposes, including the web server for the HTML client, the download of client software (Multi-Platform Client (MPC) and Virtual KVM Client (VKC)) onto the client's host, and the transfer of KVM and virtual media data streams to the client.
KX II-101-V2 (Raritan KVM-over-IP) Protocol,	This port is used to discover other Dominion devices and for communication between Raritan devices and systems, including CC-SG for devices that CC-SG management is available.

Port	Description
Configurable Port 5000	By default, this is set to Port 5000, but you may configure it to use any TCP port not currently in use. For details on how to configure this setting, see ***Network Settings*** (on page 113).
SNTP (Time Server) on Configurable UDP Port 123	The KX II-101-V2 offers the optional capability to synchronize its internal clock to a central time server. This function requires the use of UDP Port 123 (the standard for SNTP), but can also be configured to use any port of your designation. **Optional**
LDAP/LDAPS on Configurable Ports 389 or 636	If the KX II-101-V2 is configured to remotely authenticate user logins via the LDAP/LDAPS protocol, ports 389 or 636 will be used, but the system can also be configured to use any port of your designation. **Optional**
RADIUS on Configurable Port 1812	If the KX II-101-V2 is configured to remotely authenticate user logins via the RADIUS protocol, either port 1812 will be used, but the system can also be configured to use any port of your designation. **Optional**
RADIUS Accounting on Configurable Port 1813	If the KX II-101-V2 is configured to remotely authenticate user logins via the RADIUS protocol, and also employs RADIUS accounting for event logging, port 1813 or an additional port of your designation will be used to transfer log notifications.
SYSLOG on Configurable UDP Port 514	If the KX II-101-V2 is configured to send messages to a Syslog server, then the indicated port(s) will be used for communication - uses UDP Port 514.
SNMP Default UDP Ports	Port 161 is used for inbound/outbound read/write SNMP access and port 162 is used for outbound traffic for SNMP traps. **Optional**
TCP Port 22	Port 22 is used for the KX II-101-V2 command line interface (when you are working with Raritan Technical Support).
SSH	(Secure Shell) SSH port can be configured. The default is port 22.
Telnet	Telnet port can be configured but is not recommended. The default port is 23.

Network Speed Settings

KX II-101-V2 network speed setting						
Network switch port setting	**Auto**	**Auto**	**100/Full**	**100/Half**	**10/Full**	**10/Half**
		Highest Available Speed	KX II-101-V2: 100/Full Switch:	100/Half	KX II-101-V2: 10/Full Switch:	10/Half

KX II-101-V2 network speed setting					
		100/Half		10/Half	
100/Full	KX II-101-V2: 100/Half Switch: 100/Full	100/Full	KX II-101-V2: 100/Half Switch: 100/Full	No Communication	No Communication
100/Half	100/Half	KX II-101-V2: 100/Full Switch: 100/Half	100/Half	No Communication	No Communication
10/Full	KX II-101-V2: 10/Half Switch: 10/Full	No Communication	No Communication	10/Full	KX II-101-V2: 10/Half Switch: 10/Full
10/Half	10/Half	No Communication	No Communication	KX II-101-V2: 10/Full Switch: 10/Half	10/Half

Legend:

Does not function as expected

Supported

Functions; not recommended

NOT supported by Ethernet specification; product will communicate, but collisions will occur

Per Ethernet specification, these should be “no communication,” however, note that the KX II-101-V2 behavior deviates from expected behavior

Note: For reliable network communication, configure the KX II-101-V2 and the LAN switch to the same LAN Interface Speed and Duplex. For example, configure both the KX II-101-V2 and LAN Switch to Autodetect (recommended) or set both to a fixed speed/duplex such as 100MB/s/Full.

9 Pin Pinout

Pin definition	
1	DTR (out)
2	TXD (out)
3	RXD (in)
4	DCD/DSR (in) *
5	GND
6	DTR (out)
7	CTS (in)
8	RTS (out)
9	RI (in)

Appendix B Updating the LDAP Schema

Note: The procedures in this chapter should be attempted only by experienced users.

In This Chapter

Returning User Group Information

Use the information in this section to return User Group information (and assist with authorization) once authentication is successful.

From LDAP

When an LDAP/LDAPS authentication is successful, the KX II-101-V2 determines the permissions for a given user based on the permissions of the user's group. Your remote LDAP server can provide these user group names by returning an attribute named as follows:

rciusergroup attribute type: string

This may require a schema extension on your LDAP/LDAPS server. Consult your authentication server administrator to enable this attribute.

From Microsoft Active Directory

Note: This should be attempted only by an experienced Active Directory® administrator.

Returning user group information from Microsoft's® Active Directory for Windows 2000® operating system server requires updating the LDAP/LDAPS schema. See your Microsoft documentation for details.

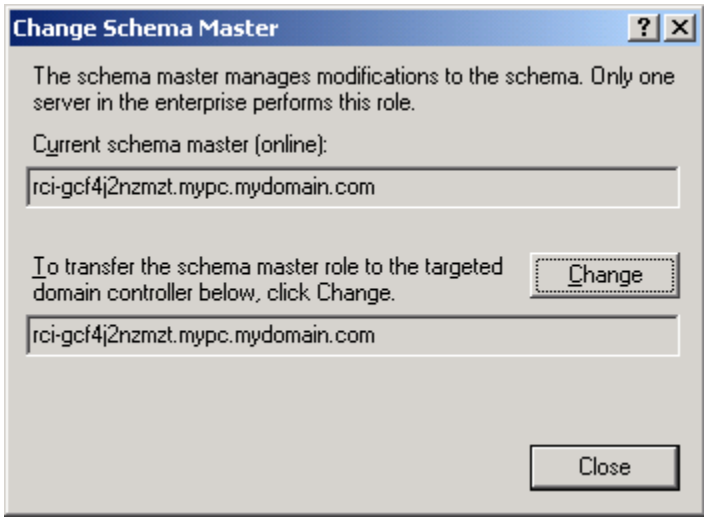
1. Install the schema plug-in for Active Directory. See Microsoft Active Directory documentation for instructions.
2. Run Active Directory Console and select Active Directory Schema.

Setting the Registry to Permit Write Operations to the Schema

To allow a domain controller to write to the schema, you must set a registry entry that permits schema updates.

To permit write operations to the schema:

1. Right-click the Active Directory® Schema root node in the left pane of the window and then click Operations Master. The Change Schema Master dialog appears.



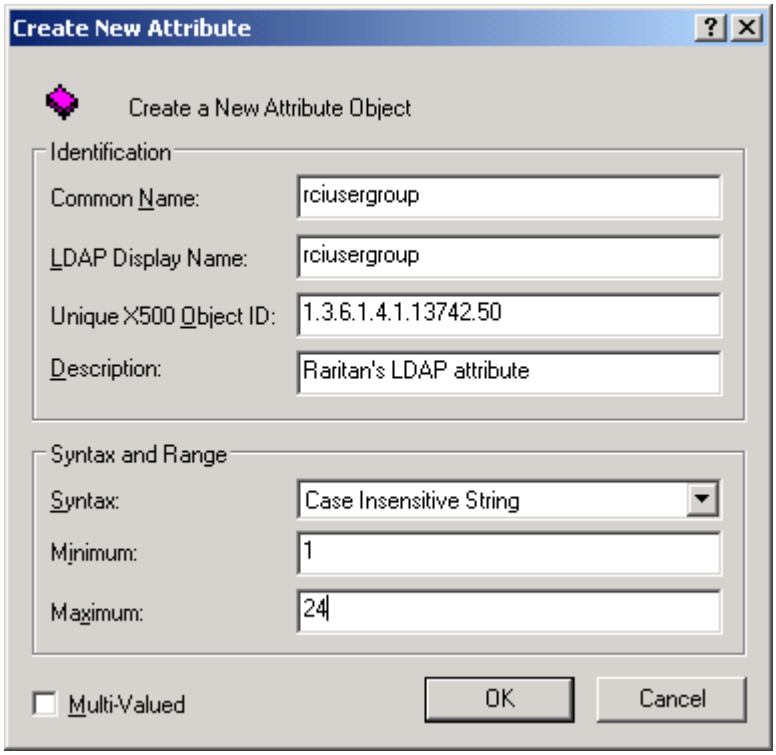
2. Select the "Schema can be modified on this Domain Controller" checkbox. **Optional**
3. Click OK.

Creating a New Attribute

To create new attributes for the rciusergroup class:

1. Click the + symbol before Active Directory® Schema in the left pane of the window.
2. Right-click Attributes in the left pane.

3. Click New and then choose Attribute. When the warning message appears, click Continue and the Create New Attribute dialog appears.



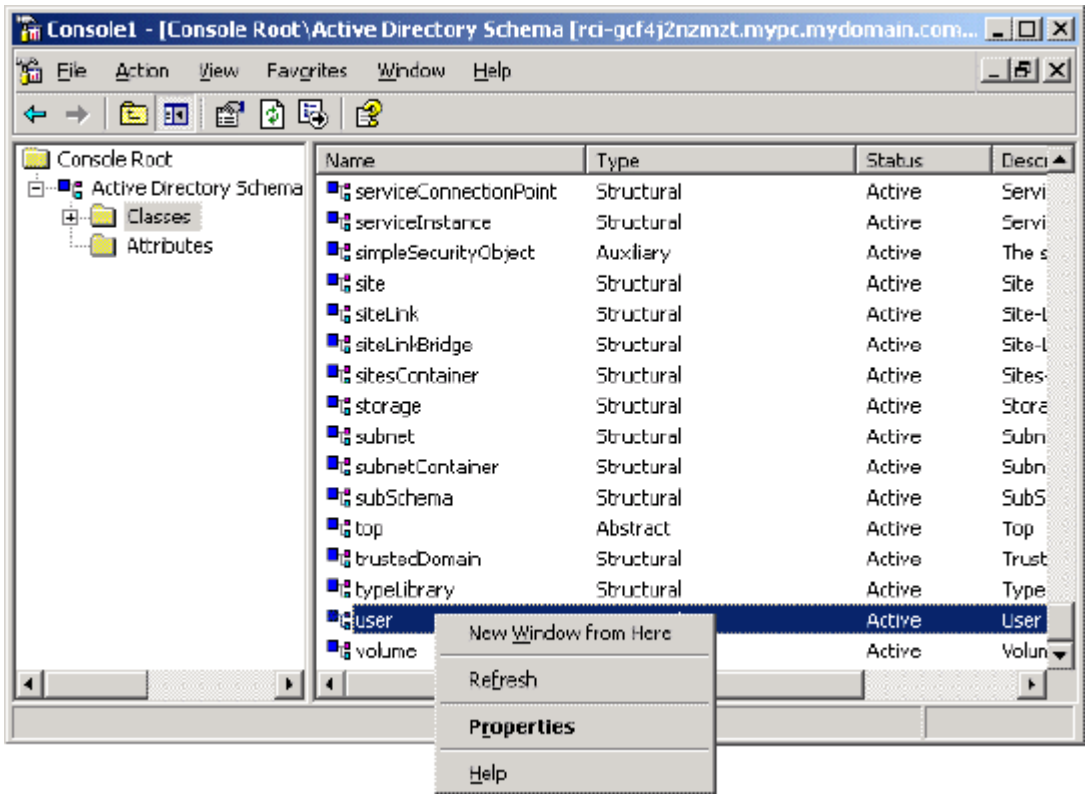
4. Type *rciusergroup* in the Common Name field.
5. Type *rciusergroup* in the LDAP Display Name field.
6. Type *1.3.6.1.4.1.13742.50* in the Unique x5000 Object ID field.
7. Type a meaningful description in the Description field.
8. Click the Syntax drop-down arrow and choose Case Insensitive String from the list.
9. Type *1* in the Minimum field.
10. Type *24* in the Maximum field.
11. Click OK to create the new attribute.

Adding Attributes to the Class

To add attributes to the class:

1. Click Classes in the left pane of the window.

2. Scroll to the user class in the right pane and right-click it.



3. Choose Properties from the menu. The user Properties dialog appears.
4. Click the Attributes tab to open it.
5. Click Add.

6. Choose rciusergroup from the Select Schema Object list.

7. Click OK in the Select Schema Object dialog.
8. Click OK in the User Properties dialog.

Updating the Schema Cache

To update the schema cache:

1. Right-click Active Directory® Schema in the left pane of the window and select Reload the Schema.
2. Minimize the Active Directory Schema MMC (Microsoft® Management Console) console.

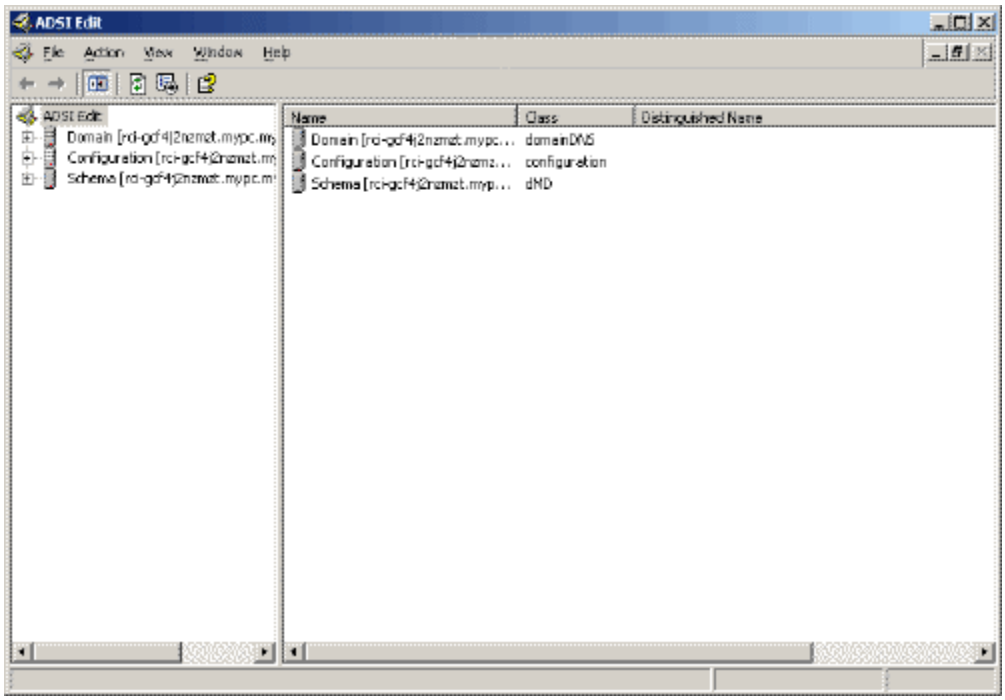
Editing rciusergroup Attributes for User Members

To run the Active Directory® script on a Windows 2003® server, use the script provided by Microsoft® (available on the Windows 2003 server installation CD). These scripts are loaded onto your system with a Microsoft® Windows 2003 installation. ADSI (Active Directory Service Interface) acts as a low-level editor for Active Directory, allowing you to perform common administrative tasks such as adding, deleting, and moving objects with a directory service.

To edit the individual user attributes within the group rciusergroup:

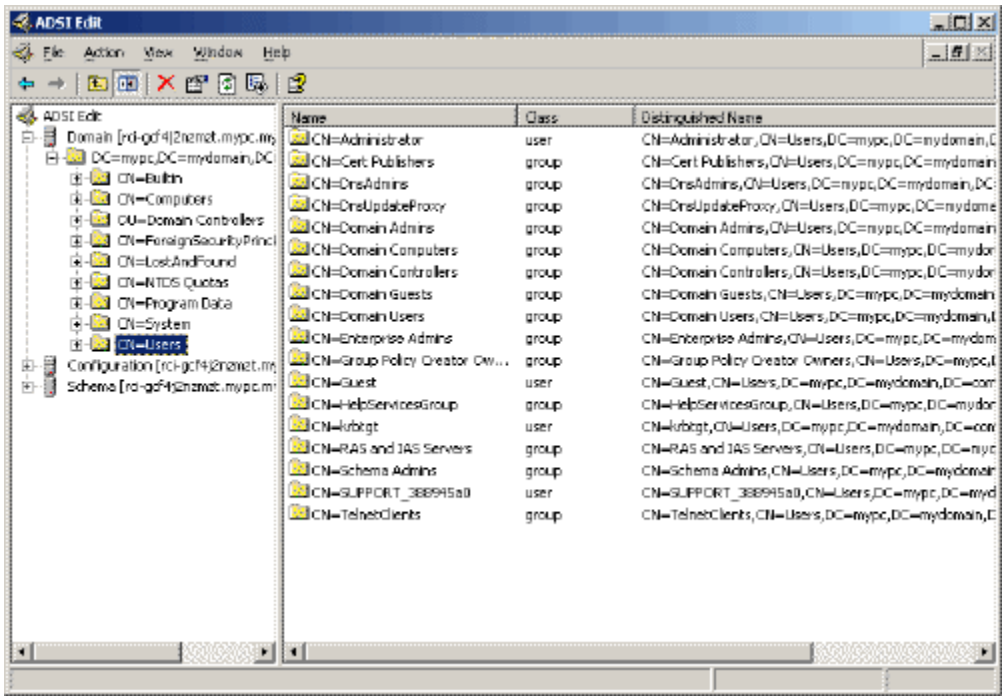
1. From the installation CD, choose Support > Tools.
2. Double-click SUPTOOLS.MSI to install the support tools.

3. Go to the directory where the support tools were installed. Run adsiedit.msc. The ADSI Edit window opens.



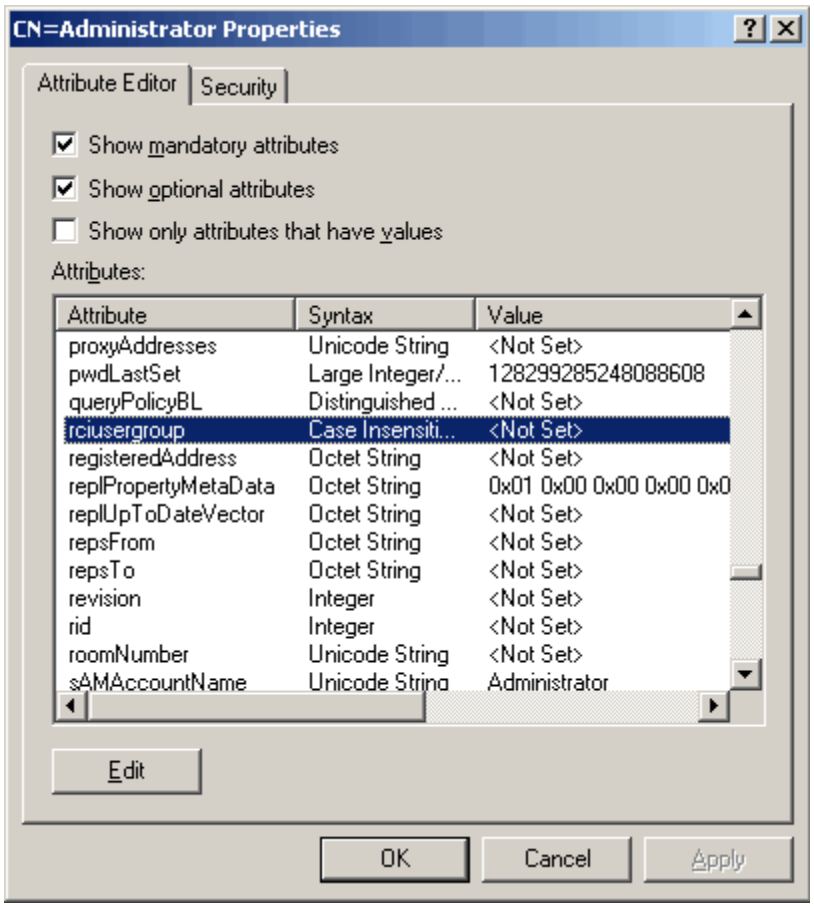
4. Open the Domain.

5. In the left pane of the window, select the CN=Users folder.

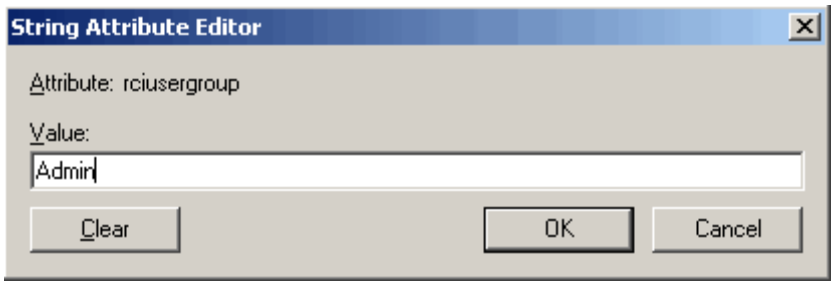


6. Locate the user name whose properties you want to adjust in the right pane. Right-click the user name and select Properties.

7. Click the Attribute Editor tab if it is not already open. Choose rciusergroup from the Attributes list.



8. Click Edit. The String Attribute Editor dialog appears.
9. Type the user group (created in the KX II-101-V2) in the Edit Attribute field. Click OK.



Appendix C Rack Mount

The KX II-101-V2 device can be mounted vertically or horizontally, facing the front or the rear, on either side of a server rack. Use the brackets and screws included with the KX II-101-V2 kit.

In This Chapter

Attach the L Bracket to the KX II-101-V2 for a Horizontal Mount

1. Attach the L bracket to the KX II-101-V2 using the included screws. Adjust bracket placement before tightening screws.
2. Mount the L bracket assembly to the rack with the rack-mount screws (provided by the rack manufacturer).

This image illustrates mounting the KX II-101-V2 on the left. To mount the KX II-101-V2 on the right, follow these directions but attach brackets to the right side of the KX II-101-V2.

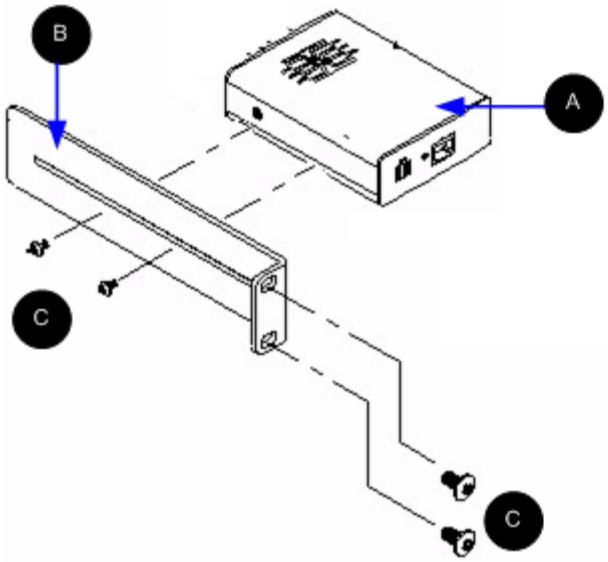


Diagram key	
A	KX II-101-V2
B	L bracket

Diagram key	
C	Screws

Appendix D Informational Notes

In This Chapter

Java Runtime Environment (JRE)

Important: It is recommended that you disable Java™ caching and clear the Java cache. Please refer to your Java documentation or the KVM and Serial Access Clients Guide for more information.

The LX, KX II, KX II-101 and KX II-101-V2 Remote Console and MPC require the Java Runtime Environment™ (JRE™) to function since the Remote Console checks the Java version. If the version is incorrect or outdated, you will be prompted to download a compatible version.

Raritan recommends using JRE version 1.7 for optimum performance, but the Remote Console and MPC function with JRE version 1.6.x and later with the exception of 1.6.2.

Note: In order for multi-language keyboards to work in the LX, KX II, KX II-101 and KX II-101-V2 Remote Consoles and Virtual KVM Client, install the multi-language version of JRE.

IPv6 Support Notes

Operating System IPv6 Support Notes

Java

Java™ 1.6 (and later) supports IPv6 for the following:

- Solaris™ 10 (and later)
- Linux® kernel 2.1.2 (and later)/RedHat 6.1 (and later)

The following IPv6 configurations *are not* supported by Java:

- J2SE does not support IPv6 on Microsoft® Windows®.

Linux

- It is recommended that Linux kernel 2.4.0 or higher is used when using IPv6.
- An IPv6-enabled kernel will need to be installed or the kernel will need to be rebuilt with IPv6 options enabled.
- Several network utilities will also need to be installed for Linux when using IPv6. For detailed information, refer to http://www.bieringer.de/linux/IPv6/IPv6-HOWTO/IPv6-HOWTO.html

Windows

- Windows XP and Windows 2003 users will need to install the Microsoft IPv6 service pack to enable IPv6.

Keyboard, Video and Mouse Notes

The following equipment have certain keyboard, video, or mouse limitations. Where applicable, a workaround is supplied.

Sun Blade Video, Keyboard, and Mouse Support Limitation

Video

If you are accessing a Sun™ Blade 100 with the KX II-101-V2, video on the local port or a remote connection may not function properly when the Sun Blade is booting up. To avoid this issue, be sure you are using Sun Open Boot firmware 4.17.1 or later.

Keyboard and Mouse

Since Sun Blades do not support multiple keyboards, and no local keyboard or mouse port is provided, the KX II-101-V2 and a local keyboard cannot be used at the same time. However, a remote keyboard and mouse can be used for Sun Blades.

BIOS Access Limitation from a Local Keyboard

A USB connection is required when using Absolute Mouse Synchronization. However, the keyboards in this section do not support a USB connection to the local keyboard. To access the local keyboard via BIOS or virtual media through the local port, follow these configurations:

Keyboard	Configuration to use
Dell® OptiPlex™ GX280 - BIOS A03	BIOS and virtual media can be accessed for local and remote keyboards using a Newlink USB to PS/2 adapter. Set the Host Interface to PS/2 on the Keyboard/Mouse Setup page. See ***Keyboard/Mouse Setup*** (on page 129).
Dell Dimension 2400– BIOS A05	Set the Host Interface to PS/2 on the Keyboard/Mouse Setup page. See ***Keyboard/Mouse Setup*** (on page 129).
Dell Optiplex 170L - BIOS A07	PS/2 plus a PS/2-to-USB-adapter. Set the Host Interface to PS/2 on the Keyboard/Mouse Setup page. See ***Keyboard/Mouse Setup*** (on page 129).
Dell Server 1850	In order for BIOS version A06 to recognize a virtual media mounted removable USB flash drive, use the PS/2 and USB connections between the Dell server and the KX II-101-V2. Set the Host Interface to PS/2 on the Keyboard/Mouse Setup page. See ***Keyboard/Mouse Setup*** (on page 129).

HP UX RX 1600 Keyboard and Mouse Configuration

If you are using an HP® UX RX 1600 running UNIX®, do the following to connect the device to the target:

- Verify you are using KX II-101-V2 firmware 2.0.20.5.6964 or higher.
- Use the USB cable that is supplied with the KX II-101-V2 .
- Set the Host Interface field on the Keyboard/Mouse Setup page to USB. See ***Keyboard/Mouse Setup*** (on page 129).
- Verify that the Enable Absolute Mouse and Use Full Speed checkboxes on the Port page are not selected.
- Use either Intelligent or Standard Mouse mode. Do not use Absolute Mouse mode.

Compaq Alpha and IBM P Server Mouse Mode Limitation

When connecting to either Compaq® Alpha servers or IBM® P servers through the KX II-101-V2, you must use Single Mouse mode. See ***Working with Target Servers*** (on page 34).

Windows 2000 and Windows 2003 Server Keyboard Limitations

Due to an operating system limitation, the following keyboard combinations do not work with a US-International keyboard layout when using the Windows 2000® operating system and Windows 2003® servers.

- Right Alt+D
- Right Alt+I
- Right Alt+L

Note: Right Alt may be labeled as AltGr on keyboards that specifically have US/International markings on the keys.

CC-SG Notes

Proxy Mode and MPC

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

Appendix E FAQs

In This Chapter

General FAQs

Question	Answer
What is the difference between the Dominion KX II-101-V2 and the previous generation Dominion KX II-101? ?	The Dominion KX II-101-V2 is the latest generation, economically priced model The V2 supports virtually all the features of the previous generation KX II-101, plus many exciting additional features. The V2 version does not have support for Power-over-Ethernet (PoE) or a PS2 local port.
How does the Dominion KX II-101-V2 work?	Dominion KX II-101-V2 connects to the keyboard, video and mouse ports of a server. It captures, digitizes and compresses the video signal before transmitting to a remote client PC using Raritan's powerful frame-grabber and compression technology. Dominion KX II-101-V2 provides a rich set of features through an intuitive user interface. It can also be centrally managed with other management devices via CommandCenter® Secure Gateway.
What types of computers can be controlled remotely by Dominion KX II-101-V2?	Dominion KX II-101-V2 works independently of a target server's hardware, operating system or application software, accessing a target server's main input/output devices – keyboard, video and mouse. Consequently, any hardware that supports standard PC keyboard and mouse interfaces, and standard PC video (VGA) can be used with Dominion KX II-101-V2.
Are there security features to protect my target servers from an unauthorized remote connection?	Yes. The KX II-101-V2 provides many layers of security – connection authentication and data transfer security during a remote session. User names, passwords and private keys are used to authenticate users. Dominion KX II-101-V2 can authenticate users against the database locally resided on Dominion KX II-101-V2, or against external AAA servers (LDAP, Active Directory® or RADIUS). All keyboard, video and mouse data are encrypted with up to 256-bit AES.
What types of virtual media does the Dominion KX II-101-V2 support?	The KX II-101-V2 supports the following types of media: internal and USB-connected CD/DVD drives, USB mass storage devices, PC hard drives and remote drive images.
Is virtual media secure?	Yes. Virtual media sessions are secured using 256-bit AES encryption.
Does the KX2-101-V2 have a local port?	Yes, it has a VGA/USB local port, but no local port cable is required. To get local access to the connected server, connect your LCD monitor to the "Local VGA" port on the KX2-101-V2. Connect your USB keyboard and mouse directly to the target server.

Question	Answer
What new features are available in the latest release?	With Release 3.5 (and above), the following features are now available: • 1920x1080 Video Resolution • iPad/iPhone Access (requires CC-SG) • Dual Stack IPv6 • FIPS 140-2 Encryption Module • Logoff User and disconnect port • SNMPv3 • Additional Virtual Media support from Linux and Mac clients • Japanese, Traditional Chinese and Simplified Chinese user interface support • Help Menu • Login Banner • Customer SSL Certificate Upload • Configurable Port Numbers

IPv6 Networking

Question	Answer
What is IPv6?	IPv6 is the acronym for Internet Protocol Version 6. IPv6 is the "next generation" IP protocol which will replace the current IP Version 4 (IPv4) protocol. IPv6 addresses a number of problems in IPv4, such as the limited number of IPv4 addresses. It also improves IPv4 in areas such as routing and network auto-configuration. IPv6 is expected to gradually replace IPv4, with the two coexisting for a number of years. IPv6 treats one of the largest headaches of an IP network from the administrator's point of view – configuring and maintaining an IP network.

Question	Answer
Why does KX II-101-V2 support IPv6 networking?	U.S. government agencies and the Department of Defense are now mandated to purchase IPv6-compatible products. In addition, many enterprises and foreign countries, such as China, will be transitioning to IPv6 over the next several years.
What is "dual stack" and why is it required?	Dual stack is the ability to simultaneously support both IPv4 and IPv6 protocols. Given the gradual transition from IPv4 to IPv6, dual stack is a fundamental requirement for IPv6 support.
How do I enable IPv6 on the KX II-101-V2?	Use the "Network Settings" page, available from the "Device Settings" tab. Enable IPv6 addressing and choose manual or auto-configuration. Consult the user guide for more information.
What if I have an external server with an IPv6 address that I want to use with my KX II-101-V2?	The KX II-101-V2 can access external servers via their IPv6 addresses, for example, an SNMP manager, syslog server or LDAP server. Using the KX II-101-V2's dual-stack architecture, these external servers can be accessed via: (1) an IPv4 address, (2) IPv6 address or (3) hostname. So, the KX II-101-V2 supports the mixed IPv4/IPv6 environment many customers will have.
What if my network doesn't support IPv6?	The KX II-101-V2's default networking is set at the factory for IPv4 only. When you are ready to use IPv6, then follow the above instructions to enable IPv4/IPv6 dual-stack operation.
Where can I get more information on IPv6?	See www.ipv6.org for general information on IPv6. The KX II-101-V2 user guide describes the KX II-101-V2's support for IPv6.

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U.S./Canada/Latin America

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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
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Email for all other products: tech@raritan.com

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