Dominion KX II

Quick Setup Guide

Thank you for your purchase of the KX II™, the industry's most full-featured, enterprise-class, secure, digital KVM (Keyboard, Video, Mouse) switch.

This Quick Setup Guide explains how to install and configure the KX II. For additional information on any aspect of the KX II, see the accompanying online help accessed from the KX II or the KX II help in PDF format, which can be downloaded from the Firmware and Documentation section of Raritan's website (http://www.raritan.com/support/firmware-and-documentation/).

To ensure you have the most current documentation for the KX II, Raritan recommends using online help or the PDF versions of the guides as your primary resource. All help is available on our website.

Step 1: Configure the KVM Target Servers

For optimal bandwidth efficiency and video performance, KVM target servers running graphical user interfaces such as Windows®, Linux®, X-Windows, Solaris™, and KDE may require configuration. The desktop background does not need to be completely solid, but desktop backgrounds featuring photos or complex gradients might degrade performance.

Ensure that the server video resolution and refresh rate are supported by KX II and that the signal is non-interlaced. The KX II 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

Resolutions	
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
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

Mouse Modes

The KX II operates in Absolute Mouse Mode™, Intelligent Mouse Mode and Standard Mouse Mode.

Mouse parameters do not have to be altered for Absolute Mouse Synchronization but a D2CIM-VUSB or D2CIM-DVUSB is required. For both the Standard and Intelligent Mouse Modes, mouse parameters must be set to specific values. Mouse configurations vary on different target operating systems. Consult your operating system documentation for additional details.

Intelligent Mouse Mode works well on most Windows platforms but may produce unpredictable results when Active Desktop is set on the target. Do not use an animated mouse for Intelligent Mouse Mode.

Windows 2000 Settings

▶ **To configure KVM target servers running Microsoft Windows 2000® operating system:**

1. Configure the mouse settings:
   a. Choose Start > Control Panel > Mouse.
   b. Click the Motion tab.
      ▪ Set the acceleration to None.
      ▪ Set the mouse motion speed setting to exactly the middle speed.
      ▪ Click OK.
2. Disable transition effects:
   a. Select the Display option from the Control Panel.
   b. Click the Effects tab.
      ▪ Deselect the "Use the following transition effect for menus and tooltips" option.
3. Click OK and close the Control Panel.

Windows XP, Windows 2003 and Windows 2008 Settings

▶ **To configure KVM target servers running Windows XP®, Windows 2003® and Windows 2008®:**

1. Configure the mouse settings:
   a. Choose Start > Control Panel > Mouse.
   b. Click the Pointer Options tab.
   c. In the Motion group:
      ▪ Set the mouse motion speed setting to exactly the middle speed.
      ▪ Disable the "Enhance pointer precision" option.
      ▪ Disable the Snap To option.
      ▪ Click OK.
2. Disable transition effects:
   a. Select the Display option from the Control Panel.
   b. Click the Appearance tab.
      ▪ Click the Effects button.
      ▪ Deselect the "Use the following transition effect for menus and tooltips" option.
3. Click OK and close the Control Panel.

Note: For KVM target servers running Windows XP, Windows 2000 or Windows 2008, you may wish to create a user name that will be used only for remote connections through the KX II. This will enable you to keep the target server's slow mouse pointer motion/acceleration settings exclusive to the KX II connection.

Windows XP, 2000, and 2008 login pages revert to preset mouse parameters that differ from those suggested for optimal KX II performance. As a result, mouse synchronization may not be optimal for these screens.

Note: Proceed only if you are comfortable adjusting the registry on Windows KVM target servers. You can obtain better KX II mouse synchronization at the login pages by using the Windows registry editor to change the following settings: HKey_USERS\.DEFAULT\Control Panel\Mouse: > MouseSpeed = 0;MouseThreshold   1=0;MouseThreshold 2=0.

Microsoft Windows 7 and Windows Vista Settings

▶ **To configure KVM target servers running Windows Vista® operating system:**

1. Configure the mouse settings:
   a. Choose Start > Settings > Control Panel > Mouse.
   b. Select "Advanced system settings" from the left navigation panel. The System Properties dialog opens.
   c. Click the Pointer Options tab.
   d. In the Motion group:
      ▪ Set the mouse motion speed setting to exactly the middle speed.
      ▪ Disable the "Enhanced pointer precision" option.
      ▪ Click OK.
2. Disable animation and fade effects:
   a. Select the System option from the Control Panel.
   b. Select Performance Information then Tools > Advanced Tools > Adjust to adjust the appearance and performance of Windows.
   c. Click the Advanced tab.
   d. Click Settings in the Performance group to open the Performance Options dialog.
   e. Under Custom options, deselect the following checkboxes:
      ▪ Animation options:
         ▪ Animate controls and elements inside windows
         ▪ Animate windows when minimizing and maximizing
      ▪ Fade options:
         ▪ Fade or slide menus into view
         ▪ Fade or slide ToolTips into view
         ▪ Fade out menu items after clicking
3. Click OK and Close the Control Panel.

▶ To configure KVM target servers running Windows 7® operating system:

1. Configure the mouse settings:
   a. Choose Start > Control Panel > Hardware and Sound > Mouse.
   b. Click the Pointer Options tab.
   c. In the Motion group:
      - Set the mouse motion speed setting to exactly the middle speed.
      - Disable the "Enhanced pointer precision" option.
      - Click OK.
2. Disable animation and fade effects:
   a. Select Control Panel > System and Security.
   b. Select System and then select "Advanced system settings" from the left navigation panel. The System Properties dialog appears.
   c. Click the Advanced tab.
   d. Click the Settings button in the Performance group to open the Performance Options dialog.
   e. Under Custom options, deselect the following checkboxes:
      - Animation options:
         - Animate controls and elements inside windows
         - Animate windows when minimizing and maximizing
      - Fade options:
         - Fade or slide menus into view
         - Fade or slide ToolTips into view
         - Fade out menu items after clicking
3. Click OK and Close the Control Panel.

Linux Settings

▶ To configure KVM target servers running Linux®:

- (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 Settings

▶ To configure KVM target servers running Sun® Solaris™:

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

Apple Macintosh Settings

▶ To configure KVM target servers running Apple Mac:

For KVM target servers running an Apple Macintosh® operating system, the preferred method is to use the D2CIM-VUSB and Absolute Mouse Synchronization.

Note: 'USB Profile 'Mac OS-X, version 10.4.9 and later' must be selected from the USB Profile menu or the Port Configuration page.

IBM AIX Settings

### ▶ To configure KVM target servers running IBM AIX®:

- 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

To enable remote access to the KX II, your network and firewall must allow communication on TCP Port 5000. Alternatively, configure the KX II to use a different TCP port, then allow communication on that port. To access the KX II via a web browser, your firewall must allow access to TCP Port 443 (Standard HTTPS). Access to TCP Port 80 (Standard HTTP) enables automatic redirection of HTTP requests to HTTPS.

Step 3: Connect the Equipment
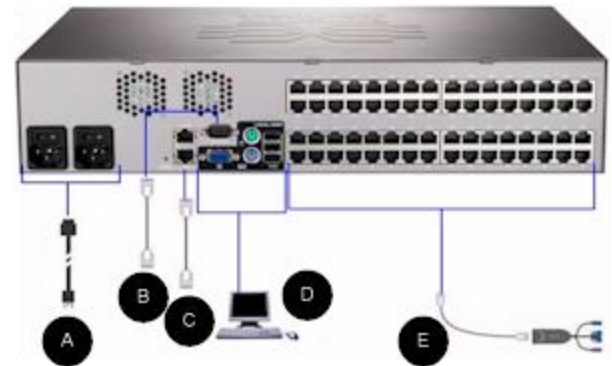
A. AC Power

▶ To connect the power supply:

1. Attach the included AC power cord to the KX II and plug into an AC power outlet.
2. For dual power failover protection, attach the second included AC power cord and plug it into a different power source than the first power cord.

B. Modem Port (Optional)

Please see the KX II help for information on connecting modems.

C. Network Port

The KX II provides two Ethernet ports for failover purposes (not for load-balancing). By default, only LAN1 is active and the automatic failover is disabled. When enabled, if the KX II internal network interface or the network switch to which it is

connected becomes unavailable, LAN2 will be enabled using the same IP address.

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

▶ **To connect the network:**

1. Connect a standard Ethernet cable (included) from the network port labeled LAN1 to an Ethernet switch, hub, or router.
2. To make use of the optional KX II Ethernet failover capabilities:
   ▪ Connect a standard Ethernet cable from the network port labeled LAN2 to an Ethernet switch, hub, or router.
   ▪ Enable Automatic Failover on the Network Configuration page.

Note: Use both network ports only if you want to use one as a failover port.

D. Local Access Port (Local PC)

For convenient access to target servers while at the rack, use the KX II Local Access port. While the Local Access port is required for installation and setup, it is optional for subsequent use. The Local Access port also provides a graphical user interface from the KX II Local Console for administration and target server access.

The KX2-808, KX2-832 and KX2-864 also provide you with an Extended Local port, labeled EXT LOCAL on the back of the device, for access to target servers while at the rack. The Extended Local port is not required for the initial installation and setup. It is not enabled by default and is configured from the Local Console and the Remote Console.

▶ **To connect the local port:**

- Attach a multi-sync VGA monitor, mouse, and keyboard to the respective Local User ports using either a PS/2 or USB keyboard and mouse (KX2-808, DKX2-832 and DKX2-864 provide USB only). The physical connections for the Local User and Extended Local ports can be found on the back panel of the KX II.

Connection	Description
Monitor	Attach a standard multi-sync VGA monitor to the HD15 (female) video port.
Keyboard	Attach either a standard PS/2 keyboard to the Mini-DIN6 (female) keyboard port, or a standard USB keyboard to one of the USB Type A (female) ports.
Mouse	Attach either a standard PS/2 mouse to the Mini-DIN6 (female) mouse port or a standard USB mouse to one of the USB

Connection	Description
	Type A (female) ports.

Note: Future KX II models will provide USB ports and not PS/2 local ports.

E. Target Server Ports

The KX II uses standard UTP cabling (Cat5/5e/6) to connect to each target server.

▶ **To connect a target server to the KX II:**

1. Use the appropriate Computer Interface Module (CIM).
2. Attach the HD15 video connector of your CIM to the video port of your target server. Ensure that your target server's video has already been configured to a supported resolution and refresh rate. For Sun servers, ensure that your target server's video card is set to output standard VGA (H-and-V sync) and not composite sync.
3. Attach the keyboard/mouse connector of your CIM to the corresponding ports on your target server. Using a standard straight-through UTP (Cat5/5e/6) cable, connect the CIM to an available server port on the back of your KX II device.

Note: The DCIM-USB G2 provides a small slide switch on the back of the CIM. Move the switch to P for PC-based USB target servers. Move the switch to S for Sun USB target servers.

A new switch position takes effect only after the CIM is power-cycled. To power-cycle the CIM, remove the USB connector from the target server and plug it back in a few seconds later.

Step 4: Configure the KX II

The KX II can be configured remotely via web browser. This requires the workstation have an appropriate Java Runtime Environment (JRE) version installed. Besides the initial setup of the IP address, all other settings can be configured via a web browser over the network using a crossover Ethernet cable and the KX II's default IP address.

Changing the Default Password

The KX II ships with a default password. The first time you start the KX II you are required to change that password.

▶ **To change the default password:**

1. Once the unit has booted, enter the default username (admin) and password (raritan). Click Login.
2. Enter the old password (raritan), enter a new password and then enter the new password again. Passwords can be up to 64 characters in length and can consist of English, alphanumeric and special characters. Click Apply. Click OK on the Confirmation page.

Note: The default password can also be changed from the Raritan Multi-Platform Client (MPC).

Assigning an IP Address

These procedures describe how to assign an IP address on the Network Settings page.

1. Choose Device Settings > Network. The Network Settings page opens.

2. Specify a meaningful Device Name for your KX II device. Up to 32 alphanumeric characters that are valid special characters. No spaces.

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

    a. Enter the IP Address if needed. The default IP address is 192.168.0.192.

    b. Enter the Subnet Mask. The default subnet mask is 255.255.255.0.

    c. Enter the Default Gateway if None is selected from the IP Auto Configuration drop-down.

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

    e. Select the IP Auto Configuration. The following options are available:

    ▪ None (Static IP) - This option requires that you manually specify the network parameters. This is the recommended option because the KX II is an infrastructure device and its IP address should not change.

    ▪ DHCP - Dynamic Host Configuration Protocol is used by networked computers (clients) to obtain unique IP addresses and other parameters from a DHCP server.

    With this option, network parameters are assigned by the DHCP server. If DHCP is used, enter the Preferred host name (DHCP only). Up to 63 characters.

4. If IPv6 is to be used, enter or select the appropriate IPv6-specific network settings in the IPv6 section:

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

    b. Enter a Global/Unique IP Address. This is the IP address assigned to the KX II.

    c. Enter the Prefix Length. This is the number of bits used in the IPv6 address.

    d. Enter the Gateway IP Address.

    e. Link-Local IP Address. This address is automatically assigned to the device. It is used for neighbor discovery or when no routers are present. **Read-Only**

    f. Zone ID. This identifies the device with which the address is associated. **Read-Only**

    g. Select the IP Auto Configuration. The following options are available:

    ▪ None - Use this option if you do not want an auto IP configuration and prefer to set the IP address yourself

(static IP). This is the default and recommended option.

If None is selected for the IP auto configuration, the following Network Basic Settings fields are enabled: Global/Unique IP Address, Prefix Length, and Gateway IP Address allowing you to manually set the IP configuration.

▪ Router Discovery - Use this option to automatically assign IPv6 addresses that have Global or Unique Local significance beyond that of the Link Local, which only applies to a directly connected subnet.

5. Select Obtain DNS Server Address Automatically if DHCP is selected and Obtain DNS Server Address is enabled. When Obtain DNS Server Address Automatically, the DNS information provided by the DHCP server will be used.

6. If Use the Following DNS Server Addresses is selected, regardless of whether DHCP is selected or not, the addresses entered in this section will be used to connect to the DNS server.

Enter the following information if the Following DNS Server Addresses option is selected. These addresses are the primary and secondary DNS addresses that will be used if the primary DNS server connection is lost due to an outage.

    a. Primary DNS Server IP Address

    b. Secondary DNS Server IP Address

7. When finished, click OK. Your KX II device is now network accessible.

Configure Date/Time Settings (Optional)

Optionally, configure the date and time settings. Note that date and time settings impact SSL certificate validation if LDAPS is enabled.

▶ **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. To adjust for daylight savings time, check the "Adjust for daylight savings time" checkbox.

4. Choose the method you would like to use to set the date and time:

    ▪ User Specified Time - Choose 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 - Choose 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**

6. Click OK.

Naming Target Servers

▶ **To name the target servers:**

1. Connect all of the target servers if you have not already done so. See **Step 3: Connect the Equipment** (on page 3) for a description of connecting the equipment.

2. Using the KX II Local Console, choose Device Settings > Port Configuration and then click the Port Name of the target server you want to name.

3. Enter a name for the server, which can be up to 32 alphanumeric and special characters. Click OK.

Specifying Power Supply Auto Detection

The KX II provides dual power supplies and can automatically detect and provide notification regarding the status of these power supplies. Proper configuration ensures that the KX II sends the appropriate notifications should a power supply fail.

The Power Supply Setup page is configured to automatically detect both power supplies when two power supplies are used. If only one power supply is used in your configuration, you can disable automatic detection from the Power Supply Setup page.

▶ **To enable automatic detection for the power supplies in use:**

1. Choose Device Settings > Power Supply Setup. The Power Supply Setup page opens.

2. If you are plugging power input into power supply number one (left-most power supply at the back of the device), select the PowerIn1 Auto Detect option.

3. If you are plugging power input into power supply number two (right-most power supply at the back of the device), select the PowerIn2 Auto Detect option.

4. Click OK.

Note: If either of these checkboxes is selected and power input is not actually connected, the power LED at the front of the device turns red.

Creating User Groups and Users (Optional)

▶ **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.

4. Specify the server ports and the type of access for each user belonging to this group. See Setting Port Permissions.

5. Set the IP ACL. This feature limits access to the KX II device by specifying IP addresses. It applies only to users belonging to a specific group, unlike the IP Access Control list feature that applies to all access attempts to the device (and takes priority). See Group-Based IP ACL (Access Control List). **Optional**

6. Click OK.

▶ **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.

6. To activate the new user, leave the Active checkbox selected. Click OK.

Step 5: Launch the KX II Remote Console

▶ **To launch the KX II Remote Console:**

1. Log in to any workstation with network connectivity to your KX II, and that has Microsoft .NET® and/or Java Runtime Environment® installed (JRE® is available on the *Java website http://java.sun.com/*).

2. Launch a supported web browser such as Internet Explorer® or Firefox®.

3. Enter the URL: *http://IP-ADDRESS* or *http://IP-ADDRESS/akc* for .NET, where IP-ADDRESS is the IP address assigned to your KX II. You can also use https, the DNS name of the KX II assigned by the administrator (provided that a DNS server has been configured), or type the IP address in the browser (KX II always redirects the IP address from HTTP to HTTPS.)

4. Enter your username and password. Click Login.

Access and Control Target Servers Remotely

The KX II Port Access page provides a list of all KX II ports, as well as the connected target servers, their status, and availability.

Accessing a Target Server

▶ **To access a target server:**

1. Click the Port Name of the target you want to access. The Port Action Menu is displayed.

2. Choose Connect from the Port Action menu. A KVM window opens with a connection to the target.

Switching between Target Servers

▶ **To switch between KVM target servers:**

1. While already using a target server, access the KX II Port Access page.
2. Click the port name of the target you want to access. The Port Action menu appears.
3. Choose Switch From in the Port Action menu. The new target server you selected is displayed.

Disconnecting a Target Server

▶ **To disconnect a target server:**

• Click the port name of the target you want to disconnect. When Port Action menu appears, click Disconnect.

Step 6: Configure the Keyboard Language (Optional)

Note: This step is not required if you are using the US/International language keyboard.

If you are using a non-US language, the keyboard has to be configured for the appropriate language. In addition, the keyboard language for the client machine and the KVM target servers has to match.

Consult the documentation for your operating system for additional information about changing the keyboard layout.

Changing the Keyboard Layout Code (Sun Targets)

Use this procedure if you are using a DCIM-SUSB and would like the keyboard layout changed to another language.

▶ **To change the keyboard layout code (DCIM-SUSB only):**

1. Open a Text Editor window on the Sun™ workstation.
2. Check that the Num Lock key is active and press the left Ctrl key and the Del key on your keyboard. The Caps Lock light starts to blink, indicating that the CIM is in Layout Code Change mode. The text window displays: `Raritan Computer, Inc. Current keyboard layout code = 22h (US5 UNIX)`.
3. Type the layout code desired (for example, *31* for the Japanese keyboard).
4. Press Enter.
5. Shut down the device and power on once again. The DCIM-SUSB performs a reset (power cycle).
6. Verify that the characters are correct.

Step 7: Configure Tiering (Optional)

The optional tiering feature allows you to connect tiered KX II devices to a base KX II. You can then access the servers and PX PDUs through the base both locally and remotely. See the **Device Management** section of the **KX II Help** for more information on this feature.

Connect from a target server port on the base device to the tier KX II Local Access port video/keyboard/mouse ports using a D2CIM-DVUSB.

If the tier device is a KX2-808, KX2-832 or KX2-864, connect from a target server port on the base device directly to the tier KX2-808/KX2-832/KX2-864 Extended Local port.

▶ **To enable tiering:**

1. From the tier base, choose Device Settings > Device Services. The Device Service Settings page appears.
2. Select Enable Tiering as Base.
3. In the Base Secret field, enter the secret shared between the base and the tiered devices. This secret is required for the tiered devices to authenticate the base device. You will enter the same secret word for the tiered device.
4. Click OK.
5. Enable the tiered devices. From the tiered device, choose Device Settings > Local Port Settings.
6. In the Enable Local Ports section of the page, select Enable Local Port Device Tiering.
7. In the Tier Secret field, enter the same secret word you entered for the base device on the Device Settings page.
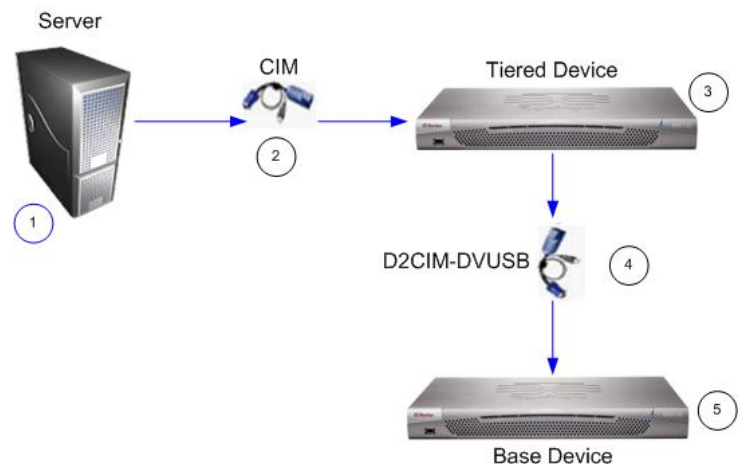8. Click OK.

Diagram key	
(1)	Target server
(2)	CIM from target server to the KX II tiered device
(3)	KX II tiered device
(4)	D2CIM-DVUSB CIM from the KX II tiered device to the KX II base device
(5)	KX II base device

Resetting the Device (If Needed)

Use the reset feature only if you want to reset the device to its original factory settings.

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 on the audit log.

► **To reset the device:**

1. Power off the KX II.
2. Use a pointed object to press and hold the Reset button.
3. While continuing to hold the Reset button, power the KX II device back on.
4. Continue holding the Reset button for 10 seconds.

Additional Information

For more information about the KX II™ and the entire Raritan product line, see Raritan's website (www.raritan.com). For technical issues, contact Raritan Technical Support. See the Contact Support page in the Support section on Raritan's website for technical support contact information worldwide.

Raritan's products use code licensed under the GPL and LGPL. You can request a copy of the open source code. For details, see the Open Source Software Statement at (http://www.raritan.com/about/legal-statements/open-source-software-statement/) on Raritan's website.