Dominion® KX II-101-V2

Quick Setup Guide

Thank you for your purchase of the KX II-101-V2, 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-101-V2. For additional information on any aspect of KX II-101-V2, see the accompanying KX II-101-V2 User Guide, which can be downloaded from the Firmware and Documentation section (http://www.raritan.com/support/firmware-and-documentation/) of Raritan's website.

Step 1: Configure the Target Server

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. The KX II-101-V2 supports the following video resolutions:

Resolutions		
640x350 @70 Hz	720x400 @85 Hz	1024x768 @90 Hz
640x350 @85 Hz	800x600 @56 Hz	1024x768 @100 Hz
640x400 @56 Hz	800x600 @60 Hz	1152x864 @60 Hz
640x400 @84 Hz	800x600 @70 Hz	1152x864 @70 Hz
640x400 @85 Hz	800x600 @72 Hz	1152x864 @75 Hz
640x480 @60 Hz	800x600 @75 Hz	1152x864 @85 Hz
640x480 @66.6 Hz	800x600 @85 Hz	1152x870 @75.1 Hz
640x480 @72 Hz	800x600 @90 Hz	1152x900 @66 Hz
640x480 @75 Hz	800x600 @100 Hz	1152x900 @76 Hz
640x480 @85 Hz	832x624 @75.1 Hz	1280x960 @60 Hz
640x480 @90 Hz	1024x768 @60 Hz	1280x960 @85 Hz
640x480 @100 Hz	1024x768 @70 Hz	1280x1024 @60 Hz
640x480 @120 Hz	1024x768 @72 Hz	1280x1024 @75 Hz
720x400 @70 Hz	1024x768 @75 Hz	1280x1024 @85 Hz
720x400 @84 Hz	1024x768 @85 Hz	1600x1200 @60 Hz

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.

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 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.

▶ **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.

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-101-V2. This will enable you to keep the target server's slow mouse pointer motion/acceleration settings exclusive to the KX II-101-V2 connection.

Windows XP, 2000, and 2008 login pages revert to preset mouse parameters that differ from those suggested for optimal KX II-101-V2 performance. As a result, mouse synchronization may not be optimal for these screens.

WARNING! Proceed only if you are comfortable adjusting the registry on Windows KVM target servers. You can obtain better KX II-101-V2 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.

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.

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

Set the mouse acceleration value to exactly 1 and the threshold to exactly 1. A target server running the Solaris operating system must output VGA video (H-and-V sync, not composite sync). Set this at the graphical user interface or with the command line *xset mouse a t* where *a* is the acceleration and *t* is the threshold.

Apple Macintosh Settings

Mac® works with the KX II-101-V2 'out of the box.' However, you must use Absolute Mouse Synchronization and enable Absolute Mouse mode and mouse scaling for Mac servers on the KX II-101-V2 Port page.

▶ **To enable this setting:**

1. Choose Device Settings > Port Configuration. The Port Configuration Page opens.
2. Click the Port Name for the port you want to edit.
3. In the USB Connection Settings section, select the Enable Absolute Mouse checkbox and the "Enable Absolute mouse scaling for MAC server" checkbox. Click OK.

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 access the KX II-101-V2 through a network firewall, your firewall must allow communication on TCP Port 5000. Alternatively, the KX II-101-V2 can be configured to use a different TCP port of your own designation.

To take advantage of the KX II-101-V2's web-access capabilities, the firewall must allow inbound communication on TCP Port 443 - the standard TCP port for HTTPS communication. To take advantage of the KX II-101-V2's redirection of HTTP requests to HTTPS (so that users may type the more common, http://xxx.xxx.xxx.xxx, instead of https://xxx.xxx.xxx.xxx), the firewall must also allow inbound communication on TCP Port 80 - the standard TCP port for HTTP communication.

Step 3: Connect the Equipment

The KX II-101-V2 has the physical connections described in the diagram. Each letter in the diagram corresponds to a step in the equipment connection process described here.
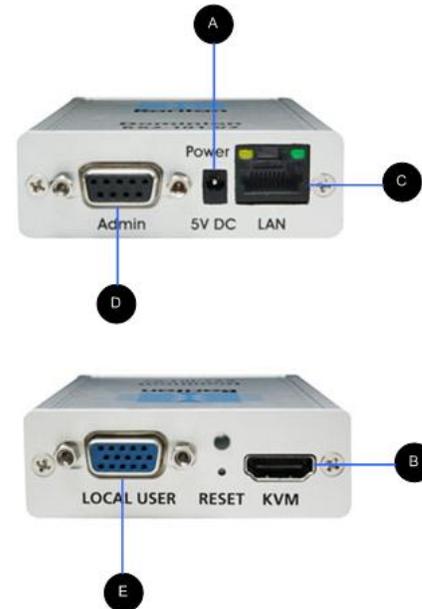

Diagram key

|		
A	Power connector	Single power adapter.
B	KVM cable with monitor, PS/2 and USB connectors (included)	Attach the KVM cable to connect the device to a monitor and to a target server.
C	Ethernet LAN	Provides LAN connectivity.
D	Admin port	Use to do one of the following: • Configure and manage the device with a terminal emulation program on your PC. • Configure and manage a power strip (requires an adapter, not included). • Connect an external modem to dial into the device.
E	Local port	The local port connects to a monitor.

A: 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.

B: 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.

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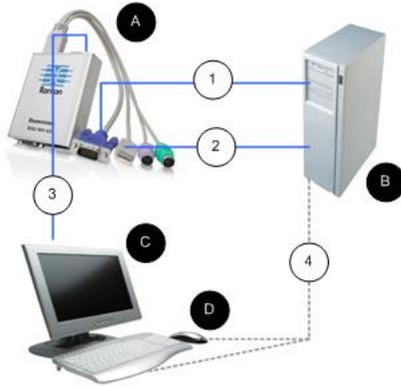
▶ **To configure the KX II-101-V2 for use with a USB target server:**

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 Port if you need to use the local video. **Optional**
4. Connect the USB keyboard and mouse directly to the target. **Optional**

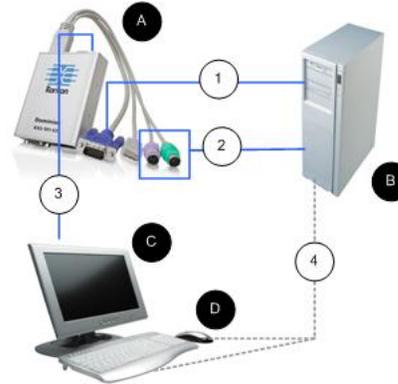   Note: If you are using virtual media, you must use the USB connection.

Diagram key for USB Connection

A	KX II-101-V2
B	Target server
C	Local monitor (optional)

Diagram key for USB Connection

D	Local mouse and keyboard (optional)
1	Video connection from the KX II-101-V2 to the target
2	USB connection from the KX II-101-V2 to the target
3	Optional monitor connection from KX II-101-V2 Local Port to the monitor
4	Optional USB connection from the target server to the mouse and keyboard (cable not included)

PS/2 Configuration

▶ **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 Port if you need to use the local video. **Optional**
4. 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**

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

Diagram key for PS/2 connections

A	KX II-101-V2
B	Target server

Raritan.

Diagram key for PS/2 connections	
C	Local monitor
D	Local mouse and keyboard (optional)
1	Video connection from the KX II-101-V2 to the target
2	KVM cable connection from the KX II-101-V2 to the target server
3	Optional KX II-101-V2 to monitor connection
4	Optional PS/2 to USB adapter connection (cable not included) from target to keyboard and mouse

C: 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.

D: Admin Port

The Admin port enables you to perform configuration and setup for the KX II-101-V2 using a terminal emulation program like HyperTerminal. Use 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

E: 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.

Configure the KX II-101-V2 Using the Remote Console

The KX II-101-V2 Remote Console is a web-based application that enables you to configure the device prior to use and manage it after it has been configured. Before configuring the KX II-101-V2 using the Remote Console, you must have both your workstation and the device connected to a network.

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)** .

Setting a New Password

When you first log into the Remote Console, you are prompted to set a new password to replace the default. Then you can configure the KX II-101-V2.

1. Log into a workstation with network connectivity to your KX II-101-V2 device.
2. Launch a supported web browser such as Internet Explorer® (IE) or Firefox®.
3. In the address field of the browser, enter the default IP address of the device: 192.168.0.192.
4. Press Enter. The login page opens.
5. Enter the user name `admin` and the password `raritan`.
6. Click Login. The Change Password page is displayed.
7. Type `raritan` in the Old Password field.
8. Type a new password in the New Password field and the Confirm New Password field. Passwords can be up to 64 characters long and can consist of English alphanumeric and printable special characters.
9. Click Apply. You will receive confirmation that the password was successfully changed.
10. Click OK. The Port Access page opens.

Assigning an IP Address

▶ **To assign an IP address:**

1. In the KX II-101-V2 Remote Console, choose Device Settings > Network. The Network Settings page opens.
2. In the Device Name field, specify a meaningful name for your KX II-101-V2 device. You can enter up to 32 alphanumeric and special characters with 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-101-V2 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. Select the IP configuration from the IP auto configuration drop-down list:

- None (Static IP) - This is the default and recommended option because the KX II-101-V2 is an infrastructure device and its IP address should not change. This option requires that you manually specify the network parameters.

- DHCP - With this option, network parameters are assigned by the DHCP server each time the KX II-101-V2 is booted.

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-101-V2 device is now network accessible. Remove the crossover cable and connect the KX II-101-V2 to the switch using a Cat5 cable.

Naming a Target Server

1. Attach the KX II-101-V2 to the target server.

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

3. Click the Port Name for the target server. The Port page opens.

4. Type a name, up to 32 alphanumeric and special characters.

5. Click OK.

Creating User Groups and Users

As part of the initial configuration, you must define user groups and users in order for users to access the KX II-101-V2.

The KX II-101-V2 uses system-supplied default user groups and allows you to create groups and specify the appropriate permissions to suit your needs.

User names and passwords are required to gain access to the KX II-101-V2. This information is used to authenticate users attempting to access your KX II-101-V2.

▶ **To add a new user group:**

1. Open the Group page by selecting User Management > Add New User Group or clicking the Add button from the User Group List page.

   The Group page is organized into the following categories: Group, Permissions, Port Permissions, and IP ACL.

2. Type a descriptive name for the new user group into the Group Name field.

3. 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.

4. Set the port permissions. Specify the server ports that can be accessed by users belonging to this group (and the type of access).

5. Set the IP ACL. This feature limits access to the KX II-101-V2 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). **Optional**

6. Click OK.

▶ **To add a new user:**

1. Open the User page by choosing User Management > Add New User or clicking the Add button 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. The list contains all groups you have created in addition to the system-supplied default groups. <Unknown>, which is the default setting, Admin, Individual Group.

   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.

6. To activate the new user, select the Active checkbox. The default is activated (enabled).
7. 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 the KX II-101-V2 to a local PC.
2. Connect to the Admin port on the KX II-101-V2 and the COM1 port on the PC.
3. Launch the terminal emulation program you want to use to configure the KX II-101-V2.
4. 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
5. Connect to the KX II-101-V2. The login page opens.
6. Type the administrator username and press Enter. You are prompted to enter your password.
7. Type the default administrator name *admin* and press Enter. You are promoted to enter your password.
8. At the Admin Port > prompt, type *config* and press Enter.
9. At the Config > prompt, type *network* and press Enter.
10. To view the current interface settings, at the Interface > prompt, type *interface* and press Enter. The current interface settings appear.
11. 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 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.

Additional Information

For more information about the KX II-101-V2 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.

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(http://www.raritan.com/about/legal-statements/open-source-software-statement/)
on Raritan's website.