

# DOMINION<sup>®</sup> KX IV – 101

## Frequently Asked Questions

### QUESTION

#### **What is the Dominion KX IV-101?**

### ANSWER

The Dominion KX IV-101 is Raritan's ultra-high performance, single-port KVM-over-IP Switch. It provides high-performance, flexible, KVM-over-IP remote access, control, and management, supporting 4K video resolution and 1080p at 60 frames-per-second. It is Raritan's 4th generation Dominion KX switch and our most powerful KVM-over-IP switch to date.

The KX IV-101 connects to a single computer, providing "un-blocked" access and control to multiple users via laptop, PC or Dominion User Station over LAN, WAN or even the internet for emergency access. The KX IV-101 also has a local port connection to view the connected server at the rack. With optional Dominion Serial Access Modules (DSAM) 2 to 8 serial devices can be managed.

#### **What's so special about the KX IV-101?**

Performance, flexibility and unique new features. The KX IV-101 is Raritan's fastest KVM-over-IP switch, with support for 4K video (3840x2160) at 30 frames-per-second and 1080p video (1920x1080) at 60 frames per second with high quality 4:4:4 color. Virtual media speed is three times faster than our 3rd generation KX III.

What sets it apart from other high-performance solutions is the IP-based flexibility it offers, supporting LAN, WAN and even internet access, as well as connections from laptop, PC or user station.

The KX IV-101 also supports exciting new features such as the Virtual Power Button to turn on/off remote equipment, a mobile app to configure and install the device, optional DSAM modules for serial access, and a new KX IV User Station, which supports 4K resolution, up to 3 monitors and has up to three times the performance of the current KX III User Station.

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#### **Who is the KX IV-101 for?**

### ANSWER

The KX IV-101 is perfect for customers that require: (1) high performance access to computers, servers, PCs and workstations, or (2) those that require a single-port KVM-over-IP switch.

High performance customers may be in the following industries: broadcast, media, control room, government, military, aerospace, scientific, engineering, security, or medical. These users need any (or all) of the following:

- Use of high-resolution content, 1080p, 1440p, 1600p up to 4K
- Dynamic or video applications requiring 30 to 60 frames per second
- Work with high quality video, images, maps, etc.

Other users may require one or more single-port KVM-over-IP switches for traditional remote management applications such as remote offices, colo, remote facilities, cubes/closets, edge applications, small labs or wherever there is a small number of computers to be remotely managed. In addition, serial devices can be accessed and controlled via Raritan DSAM modules.

#### **What do you mean by 4K video?**

4K video refers to the size of the video screen on the remote server, specifically a horizontal display resolution of approximately 4,000 pixels. A pixel is a small block or color on the screen. For computer screens, 4K video resolution is a matrix of 3840x2160 pixels. 4K, known as Ultra HD, is 4 times the pixels of standard HD (1920x1080) resolution. 4K is used in certain applications where high-resolution (i.e. very detailed) video or images are required. The KX IV-101 supports a wide variety of resolutions, both standard computer resolutions, HD resolutions and higher resolutions including 1440p, 1600p and 4K.

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**What do you mean by frames-per-second (FPS)? Why is that important?**

**What is 4:4:4 color?**

**I have more than one server to manage. What do I do?**

**What is “unblocked access”?**

### ANSWER

Frames-per-second is the number of video frames shown in a second. It is a measure of how good the KVM performance is. Traditional KVM-over-IP switches support 5 to 15 frames per second. The KX III supports up to 30 for 1080p resolution. The KX IV-101 supports up to 60 FPS for 1080p and 30 FPS for 4K video.

It's a measure of the quality of the video color encoding and compression. Three high-quality color modes are provided: 4:2:0, 4:2:2 and 4:4:4, with the latter being the highest quality. The lower modes provide excellent color, but with significant bandwidth savings.

Additional color modes, with reduced color and gray, are available to support lower bandwidth connections.

You can connect one KX IV-101 to each server and then access them via web-browser, User Station or CommandCenter.

Or you can connect 8, 16, 32 or 64 servers to the Dominion KX III. Or use a combination of the KX III and KX IV-101 switches according to your needs.

Up to 8 serial devices can be managed via the DSAM modules.

With certain KVM switches, a user can get blocked, which means they cannot connect to a given server because other users have used up all the switch's internal connections. As a one-port switch, the KX IV-101 offers unblocked access. Moreover, the KX IV-101 has the PC Share feature, so that multiple users can connect at the same time, sharing access and control.

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**What types of server video formats are supported?**

### ANSWER

The KX IV-101 is a native HDMI<sup>®</sup> device with available cable adapters for VGA, DVI, DisplayPort, Mini-DisplayPort & USB-C.

**How is KX IV-101 different from KX III?**

KX IV-101 is different from the KX III in a few important ways:

- KX IV-101 is a single-port switch connecting to a single server, while the KX III is a family of multi-port switches connecting to 8 to 64 servers
- KX III supports a maximum video resolution of 1080p (1920x1080), while KX IV-101 supports up to 4K resolution, which is the equivalent of four 1080p screens
- KX III uses CIMs (server dongles), while the KX IV-101 has direct HDMI<sup>®</sup>/USB input, with cables/adapters for other video formats
- KX IV-101 is an all-digital device, while the KX III has a mixed analog/digital architecture using CIMs.
- KX IV-101 has a next generation hardware, software and video architecture based on the Dominion KX III and the Raritan PX's Xerus Controller.

Despite the differences, you can utilize both KX III and KX IV-101 switches, tied together by the KX User Stations and CommandCenter.

**Does the KX IV-101 have all the features of the KX III?**

KX IV-101 has many of the popular features of the KX III, but as this is its first release, it doesn't contain them all. Consult the KX IV-101 Features and Benefits document and the online help for a list of features. We will be adding in additional features in future releases. Support for DSAM modules added in the latest release.

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**How is the KX IV-101 different from the KX II-101-V2?**

### ANSWER

Both are Raritan Dominion single-port KVM-over-IP switches connecting to a single computer. The KX II-101-V2 is Raritan's older, second generation, single-port switch supporting connections to VGA video up to 1080p. The KX IV-101 has substantially higher performance; it will replace the KX II-101-V2, which will be going end-of-life. KX II-101-V2 customers should consider upgrading to the KX IV-101 for higher performance, new features and support for Java-free remote access.

**How is the KX IV-101 different from its competition?**

Versus other one-port KVM-over-IP switches, the KX IV-101 has substantially higher performance, supporting higher resolutions up to 4K, faster frames-per-second up to 60 and higher quality images to 4:4:4. In terms of performance, there is simply no comparison between the KX IV-101 and traditional KVM switches.

Versus other high performance KVM systems used in broadcast and control rooms, the KX IV-101 provides similar high performance, but is much more flexible than these systems including:

- Works over LAN, WAN or even the internet. Runs over the corporate network. Does not require fiber, 10G Ethernet or an independent network.
- Can be accessed over IP via user station, PC, or laptop. Many high-performance systems only work via an expensive hardware receiver or decoder; they don't support PC or laptop access by IT, engineering or management.
- The KX User Stations support a desktop user interface where users can simultaneously access multiple KVM sessions, including RDP, VNC and SSH access to servers. The new KX IV User Station supports 4K and up to 3 monitors.
- As an IP-solution, a KX IV-101 solution is easier to deploy/expand and is often less expensive.

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**Can the Dominion KX IV-101 be rack mounted?**

### ANSWER

Yes. The Dominion KX IV-101 ships with an included L-shaped bracket, which can be used for zero-U mounting. There is also a (RACK-KIT-DKX4-101-3) bracket to mount 3 switches in a 1U rack.

**Does the KX IV-101 have a local port for at-the-rack access?**

The Dominion KX IV-101 has a pass-through, digital local port providing fast, at-the-rack access via HDMI<sup>®</sup> and USB. As a pass-through local port, KX IV-101 administration is not available.

**How do you locally administer the KX IV-101?**

There is an Apple Smartphone Application (App) for local access to the KX IV-101. You can connect your smartphone to the KX IV-101 via USB cable to install and configure the switch. There is also a serial port to configure the KX IV-101.

**How large is the Dominion KX IV-101?**

The Dominion KX IV-101 is roughly 5.5 x 5.7 x 1.2 inches. It weighs approximately 1.5 pounds.

**Is the KX IV-101 Java-Free? Is there an HTML5 Client?**

Yes and yes. The KX IV-101 has two Java-free KVM Clients: (1) the Windows-based Active KVM Client (AKC) for Windows, and (2) an HTML5 KVM Client (HKC) for Java-free KVM-over-IP access on Linux, iOS, and Mac.

**How can the KX IV-101 be used over LAN, WAN & Internet?**

The KX IV-101 has user-configurable video performance (quality vs bandwidth) to operate over LAN, WAN and even the Internet for emergency, out-of-hours IT support. Performance will of course vary according to network bandwidth and latency.

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<b>What type of controls are available for bandwidth and quality?</b>	Using the Connection Properties panel during a KVM Session, a user can change the video encoding to optimize for 8 different settings for best quality or least bandwidth. There are two overall modes for (a) video versus (b) general computer applications. There is a Connection Info panel that shows the amount of bandwidth used.
<b>Does the KX IV-101 support a hardware receiver/encoder/user station?</b>	<p>Yes, KX IV-101 works with the existing KX III User Station, a self-contained user appliance that provides users with high-performance IP access to remote servers.</p> <p>For customers needing the ultimate in performance, a new KX IV User Station is available. It has a more powerful CPU, memory, supports up to 3 monitors, and has roughly 3 times the performance of the KX III User Station.</p>
<b>Is virtual media supported?</b>	Yes, virtual media is supported. Due to the new, all-digital platform, it is three times faster than with the current Dominion products. Virtual media can be encrypted for security reasons.
<b>Is audio supported?</b>	Yes. The KX IV-101 supports digital stereo audio via HDMI <sup>®</sup> , supporting playback from the target server. USB audio is not currently supported.
<b>Are DSAM Modules supported for serial management?</b>	Yes, as of Release 4.1, one or two DSAM modules can be attached to the DKX4-101 and be used to access and control serial devices such as LAN switches, router and UNIX/Linux servers.

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#### **Does the KX IV-101 support USB profiles?**

No, but a similar capability is provided with USB connection settings. These provide basic and advanced USB settings to support a broad range of virtual media, servers and BIOS versions on a wide variety of PCs, servers and workstations.

#### **Can the Dominion KX IV-101 use DHCP?**

Yes, DHCP is the default mode with the KX IV-101. You can also set a static IP address.

#### **What type of remote power control capabilities does Dominion KX IV-101 offer?**

With the “Virtual Power Button” feature, users can remotely power on or off a computer device — without the use of an outlet-switched PDU! This requires a connection between the KX IV-101’s terminal block and the computer motherboard.

The KX IV-101 does not yet support remote power control via an iPDU.

#### **What other uses are there for the terminal block and external device control?**

There are two types of device control: input and output. Input control can control local and remote access of the KX IV-101. For example, for privacy or safety reasons, an external switch can be used to disable remote access if a local user is working on the connected computer. Output control can be used to power on or off an external device such as a light, buzzer or computer.

#### **What type of security features does the KX IV-101 have?**

The Dominion KX IV-101 has many of the standard security features as the other Dominion devices. This includes: AES encryption, LDAP, Active Directory and RADIUS directory server integration, user/group privileges, IP access controls, login limitations, KVM session encryption, SSL Certificates, configurable security banner, audit log, SNMP/Syslog event logging and notifications, TSL 1.2 and 1.3 security and strong passwords. FIPS 140-2 mode and CAC/SmartCard are not



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#### **Does it work with CommandCenter?**

supported in the first release.

Yes, the KX IV-101 can be fully managed by CommandCenter itself or integrated with the Dominion User Stations.

#### **Does the KX IV-101 have an API or SDK?**

Yes, the KX IV-101 can work with the Dominion KX III KVM Client Software Development Kit (SDK) and Application Programming Interface (API). The KX III SDK/API, running on Windows using Microsoft's .NET framework, is available for purchase under separate agreement to approved customers.

The KX IV-101 can also work with the CommandCenter Web Services API.

#### **Where do I find documentation on the Dominion KX IV-101?**

The documentation is available at raritan.com on the KX IV-101 support page in the Support section of raritan.com. A Quick Setup Guide, User Guide and online help, as well as Release Notes, new firmware releases, MIB and other information are available.

#### **How long is the hardware warranty for the KX IV-101?**

The Dominion KX IV-101 comes with a standard two-year warranty, which can be extended to 5 years of warranty coverage.

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