Release Notes

Dominion LX Release 2.7

January 20, 2016

Table of Contents

Proprietary and Confidential

Release Notes for Dominion® LX Software Version 2.7

Version: DLX 2.7 Release Notes, Revision 1
Effective Date: January 20, 2016

Applicability:

Dominion LX models:
- DLX-108, DLX-116, DLX-216

Release 2.7 is only applicable for the Dominion LX models listed above.

Release Status: General Availability.

Dominion LX Overview:

The Dominion LX is a family of affordable, extensible KVM-over-IP switches with single power supply, single LAN and virtual media. Targeted towards small and medium businesses with less than 75 servers under management, they provide BIOS-level, IP control of 8 or 16 servers with one or two user remote access.

Release 2.7 Overview:

Release 2.7 is a firmware release, based on Release 2.6, with enhancements, improvements and fixes.

Dominion LX Release 2.7:

- **Change Default KVM Client to AKC on Windows.** On Microsoft Windows platforms, the Java-free Active KVM Client (AKC) will be launched by default if the environment supports this .NET-based KVM Client. AKC is now available for the Microsoft Internet Explorer and Edge browsers, as well as Chrome with the appropriate plugin. If the Java-based VKC KVM client is desired, then use <IP Address>/vkc or <IP Address>/vkcs with the Chrome or Edge browsers.

- **Support for Microsoft Windows 10 and Edge browsers.**

- **Support Chrome Browser (Java Webstart).** The Chrome browser has recently stopped support for the protocol used to launch Java Applets like the Raritan Virtual KVM Client (VKC). This release will utilize Java Webstart to enable the latest Chrome releases (45+) to launch VKC (must use <IP Address>/vkcs).

- **Support AKC with Chrome.** The Raritan Active KVM Client (AKC), which does not use Java, can be launched via the Chrome browser on Windows platform. This requires the use of the Chrome ClickOnce plugin.

- **Security enhancements.** Support SHA-2 certificates, new Raritan code signing certificate, update OpenSSL library, increase key size for certificate generation to 4096 bits, the favorites applet is now only available after login, and stop support for insecure RC4 encryption.

- **Various fixes, small enhancements and documentation updates.**

- **LX User Guide and Client Guide Updates.** The User Guide is available from the "Help – Online Help" link in the left panel of the LX web based user interface and on raritan.com.

Dominion LX Documentation:

The following user documentation is available for the Dominion LX:

- **Dominion LX User Guide** – user guide to the LX's local and remote browser based user interfaces and general LX usage.
- **Dominion LX Quick Setup Guide** –for the initial setup of the LX.
- **KVM and Serial Client Access Guide** – reference for the remote clients for the Raritan KVM-over-IP products
- **Dominion LX CIM Guide** – reference for the Dominion Computer Interface Modules (CIMs). Which CIM to use, etc.

The Dominion LX documentation is available from the LX web based user interface and on the Raritan.com website: www.raritan.com. Please go to the **Support** section and then select **Dominion LX**. The documentation is shown by release, so click on the appropriate release.

Dominion LX Online Help:

An **Online Help System** is available. Click on **Help – Online Help** in the left hand information panel and the Online Help system will launch. You can browse to the appropriate topic via the Contents, Index and Search tabs. The entire Dominion LX User guide is available, including text and images, with an extensive set of links.

Online help for the Raritan products is now available on raritan.com:

http://www.raritan.com/support/online-help/

Computer Interface Module (CIM) Overview:

A CIM is required to connect each server or device to the Dominion LX. Different types of CIMs are available for various purposes and devices.

Dominion LX can use the following CIMs:

- **D2CIM-*D*VUSB**: *dual* USB virtual media CIM, required for virtual media and absolute mouse synchronization. This CIM is recommended for customers planning to access virtual media drives at the OS and BIOS levels, and for LX-to LX tiering.
- **D2CIM-VUSB**: *single* USB virtual media CIM, required for the virtual media and absolute mouse synchronization features. This CIM is recommended for customers planning to access virtual media drives only at the OS level.
- **Digital CIMs (D2CIM-DVUSB-DVI, D2CIM-DVUSB-HDMI, D2CIM-DVUSB-DP)**: Customers with servers, PC's or MAC's using the DVI-D, HDMI, or DisplayPort digital video formats should use one of the new digital CIMs. These CIMs will support the LX standard video resolutions of up to 1920x1080, including widescreen formats.

- **Basic Dominion CIMs**: DCIM-PS2, DCIM-USBG2, and DCIM-SUN for customers who don't plan to use virtual media or absolute mouse synchronization, but would like the flexibility to use CAT5 cabling. There is a small switch on the DCIM-USBG2, which should be set to the "S" position for use with SUN servers with USB ports.

- **Economical MCUTP cable-CIMs.** For customers who don't plan to use virtual media or absolute mouse synchronization, MCUTP cable-CIMs provide an economical alternative to the Dominion CIMs. The MCUTP cable CIM is an integrated CIM and Cat5 cable available in several different lengths.

- **P2CIM-SER,** which can be connected to serial devices.

Consult the Dominion LX CIM Guide for more information.

Release 2.7 Compatibility Information:

1. LX devices can be remotely accessed by three KVM remote clients:

REMOTE CLIENT	DESCRIPTION
Virtual KVM Client (VKC)	Java-based client invoked from the browser-based remote user interface. Can force launch by <IP Address>/vkc Use <IP Address>/vkcs on Chrome & Edge
Multi-Platform Client (MPC)	Java-based client with traditional Raritan user interface. Installable client, which can work without a browser.
Active KVM Client (AKC)	Windows-based client invoked from the browser-based remote user interface. Can force launch by <IP Address>/akc

2. SUN Java™ Runtime Environment (JRE) version 8 is supported up to 1.8.0_66. SUN Java™ Runtime Environment (JRE) version 7 is supported up to 1.7.0_80. These were the current Java versions at release time. Future Java versions should work correctly assuming no incompatible changes are made. For any issues, please contact Tech Support who can provide workaround solutions or patch releases, if available

- Java version 6 is not supported by the Dominion LX

- For best results, we recommend that Java Plug-in Caching is not enabled.

- For greater security and fewer Java and browser warning messages, Raritan recommends customers upload a SSL certificate to each LX switch.

- Customers need to affirmatively click through all security warnings for the Raritan Java applets to load.

3. Internet Explorer versions 10 /11 and the Edge browser are supported. Firefox versions include 33, 38, 40, and 41. Chrome versions 40, 44 and 45. Safari 7.0.5 & 8.0.7.

4. The Active KVM Client (AKC), the native Windows Client, requires Internet Explorer 10 or above and Microsoft .NET Framework versions: 4.0 or 4.5.

5. Windows Vista and Windows 7/8/10 desktops are supported.

6. The following, legacy operating systems are no longer officially supported as target servers: Solaris 9, Fedora all versions before 13, SUSE all versions before 10.x. Consult the User Guide for more information.

7. Use the pre-defined macros created for the Japanese Kana Key and the R-ALT-KANA key, as these keys are not consistently received from the JRE.

8. There is a SNMP v2 MIB. This should be loaded into your SNMP management system if you are enabling SNMP traps from your LX switch.

Release 2.7 Important Notes and Information

1. Java Recommendations. Raritan recommends customers upload a SSL certificate to each LX switch. This will eliminate certain Java messages.

2. Windows customers can use the .NET based Active KVM Client (AKC) which does not use Java – use this with URL:

    - <LX IP Address>/akc.

3. VKC Direct Port Access with Chrome. Direct Port Access with the VKC KVM Client does not work with Chrome in this release. Please use another browser or AKC if on a Microsoft Windows platform

Release 2.5.5 Important Notes and Information for Digital Video CIMs:

1. The Digital Video CIMs support E-EDID and DDC to communicate the "Preferred Timing Mode," i.e. the user's preferred video resolution, as well as the other supported video resolutions, to the target server. This preferred video resolution, known as the "Display Native Resolution" on the Port Configuration page on the LX user interface, defaults to 1280x1024@60hz, but can be changed by the user.

2. Some servers, especially at the BIOS level, may not automatically change to the preferred (native) resolution provided by the CIM to the server. Users can manually change the "Display Native Resolution," change the resolution manually on the server, re-boot the server or consult the server or LX documentation for additional suggestions.

3. Sometimes video may not display for certain preferred video resolutions on some servers. Try using a different resolution, re-boot the server or consult the server or LX documentation.

4. Do not change the port's "Display Native Resolution" during virtual media transfers – it may interrupt the transfer.

5. On Linux, you may need to restart the X window system or reboot the system when changing the "Display Native Resolution."

6. DVI-D and DVI-I are supported by the D2CIM-DVUSB-DVI, but not DVI-A (less common).

7. The D2CIM-DVUSB-HDMI CIM does not support HDCP or embedded audio. For some servers, the "DVI Compatibility Mode," which provides a DVI compatible video signal, will provide improved video quality. This can be set on the Port Configuration page.

8. The D2CIM-DVUSB-DP does not support DPCP or embedded audio.

Release 2.4.5 Important Notes and Information:

1. Certain features such as virtual media and absolute mouse synchronization require the use of the D2CIM-VUSB or D2CIM-DVUSB virtual media CIMs.

2. The Dominion LX has a USB-based local port with 3 USB ports. For PS/2 mice/keyboards, an adapter is required.

3. The MCUTP CIMs do not have internal memory, therefore, there is no storage of the CIM serial number or the CIM name. If you move the MCUTP CIM to another Dominion LX, then you must re-name it.

4. Paragon CIMs, other than the P2CIM-SER, are not supported by Dominion LX.

5. Remote power control via the Dominion PX or PX2 is not available in the Dominion LX.

6. CC-SG management is not available for the Dominion LX.

Firmware Upgrades:

Raritan provides new firmware upgrade releases that contain software enhancements, new features, and improvements. These upgrades are available on the Raritan Website: www.raritan.com. Please go to the Support section and select Dominion LX in the left navigation panel, or go directly to:

http://www.raritan.com/support/product/dominion-lx

Locate the entry for the new firmware release. Release Notes are available with: (a) brief descriptions of new features/enhancements, (b) important operating instructions, and (c) firmware upgrade instructions. Follow the Release Notes instructions to upgrade the device.

LX Features - Important Notes and Information

The following sections describe important operating information for the Dominion LX features.

User Interface, Browsers, KVM

1. Microsoft's Internet Explorer (IE7 and above) must be used to launch AKC. Windows XP, Vista and Windows 7 user desktops are supported. Microsoft's .NET Framework 3.5 is required.

2. For Mac OS, the Safari™ browser is certified for use. Absolute Mouse Synchronization is required for Mac servers. The "Mac OS-X (10.4.9 and later)" USB profile should be enabled for the specific port on the Port Configurations page.

3. Be careful of the web browser refresh or reload function/button, which has the side-effect of closing VKC sessions.

4. Absolute Mouse Synchronization requires support from the OS. Windows and Mac OS' generally support it. Linux and UNIX based OS' (AIX, HP-UX, Solaris) generally do not.

5. For certain servers, particular widescreen formats may not be available when the LX CIM is attached. If so, disconnect the CIM, set the resolution and re-connect the CIM. Alternatively, the following Raritan adapters can be used: DDC-1440 and DDC-1680

6. For the best possible video quality, adhere to these distance guidelines from the CIM to the LX:

Server Video Resolution	Distance
1024x768 (and below)	150 feet
1280x1024	100 feet
1600x1200 (or above)	50 feet

7. SUN Backgrounds: Some of the SUN background screens may not center precisely on certain SUN servers, i.e. those backgrounds with dark borders (e.g. NoBackDrop). Use another background or place a light colored icon in the upper left hand corner.

8. Asian language support. For the KVM Clients (VKC, MPC and AKC), set the "Locale Setting of the Client PC" to the appropriate language. For the Remote HTML interface, set the language via the Language item on the Device Settings Menu.

9. When the Auto Scan feature is used to scan tiered target servers, a port change event will be created in the audit log when the server is scanned, and if SNMP notifications are enabled, an SNMP trap will also be generated.

Virtual Media

1. There are several prerequisites for Virtual Media: (1) a D2CIM-VUSB, D2CIM-DVUSB or D2CIM-DVUSB-xxx must be connected to the server's USB port, (2) the operating system (OS) or BIOS must support USB connected devices, and (3) the user must have the required administrator permissions on the client, target and the LX.

2. Not all servers and operating systems support all virtual media options. In general, modern Windows® OS' do, including Windows Vista™, 2003 Server, XP and Windows 2000 with the latest patches. Target Servers running Linux and Mac OS', when accessed from a Windows client, will generally mount CD/DVD drives, USB drives and ISO images. Mac® and Linux clients can now mount these types of media also, subject to the notes above. Other UNIX based OS' generally do not support virtual media.

3. In general, due to varying BIOS implementations of the USB 2.0 standard regarding virtual media, it is not always possible to boot from a virtual media drive at the BIOS level. **The D2CIM-DVUSB or D2CIM-DVUSB-xxx CIMs are recommended for customers who plan to use virtual media at the OS and BIOS levels.** Use D2CIM-VUSB for virtual media at the OS level. Please note that some BIOS do not support USB devices as boot devices and hence virtual media is not possible.

4. For Windows OS', do <u>not</u> use the "Safely Remove Hardware" function in the system tray on the target server to disconnect a mounted virtual media drive. Disconnect using the "Disconnect" command on the virtual media menu.

5. Virtual media operations are available from Linux and Mac Clients. Please note:

   - When using the KVM clients on Linux, Linux formatted partitions cannot be mounted on Apple Mac and Windows target servers. Linux ext3/4 drive partitions should be un-mounted on the client PC prior to a virtual media connection.

   - When using the KVM clients on Apple Mac, Mac formatted partitions cannot be mounted on Linux and Windows target servers.

   - Windows formatted partitions may be mounted on other operating systems.

   - Active system partitions on Apple Mac and Linux clients should be un-mounted before a virtual media connection.

   - Mapped drives from Mac and Linux clients are not locked and are read-only when mounted on the target server during a virtual media session.

   - Non-root users on Linux will see the virtual media connection disconnected if a CD ROM is removed from the drive. This is due to the permissions granted to non-root users, and is not the case for root users.

6. To use the enhanced Apple MAC BIOS entry, the D2CIM-VUSB, D2CIM-DVUSB or D2CIM-DVUSB-xxx CIM firmware must be used. Also a MAC specific USB profile should be used: BIOS Mac USB profile or Mac OS-X (10.4.9 and later) USB profile.

7. On Windows 7 target servers, mounted virtual media drives may not be visible in the "My Computer" folder, due to a new Windows 7 feature. To disable it, go to "Folder options"->"View" and uncheck "Hide empty drives in the Computer folder".

8. On Windows 7, with User Account Control (UAC) on, if not "Running as Administrator' in IE, the user will not have access to all Virtual Media Resources, in particular fixed drives and fixed drive partitions.

Dominion LX to LX Tiering:

- Two levels of tiering are supported; up to 256 target servers can be connected. Multiple, tiered LX switches can be connected to a base LX switch and accessed either locally or remotely from the base LX switch.

- To physically connect the local ports of the tiered switches to the base switch, use the D2CIM-DVUSB. Since the local port of the tiered switch has been connected to the base switch, local access is not directly available on the tiered switches.

- Both local and remote access through the base LX switch is available. Consolidated local access is a convenient way to access up to 256 servers from a single console in the data center.

- Tiered remote access is also available, but has some restrictions. Customers can connect to the base switch and remotely access all servers connected to the base and tiered switches. Please realize that: (1) there is only one simultaneous tiered connection supported per tiered switch and (2) certain advanced features are not available over a tiered connection. In general, direct access to the tiered switch will provide maximum functionality, although tiered remote access is very convenient for customers needing basic IP access from a single IP address.

- Virtual media and absolute mouse are not available over a tiered connection. These advanced features are available when remotely accessing servers directly from the tiered switches.

- The Multi-Platform Client (MPC) provides direct IP access to the base and tiered switches with full support of the advanced features.

- The base and tiered switches must run the same Dominion LX Release. Any LX model can be used as the base and tiered switches.

- Users must share the same login and password on the base and tiered switches.

- For best operation of the tiering feature, we recommend minimizing the number of User Groups, with a maximum of 50 User Groups.

- Internet Explorer (IE) 7 is not recommended for tiered remote access. Use IE 8 instead.

Generic Tiering

Generic, hot-key based tiering is available. In this case a Dominion LX is the base tier and the tiered switches can be Raritan or 3rd party KVM switches that are hot-key switchable. In this case, the LX port connected to the KVM switch should be configured to be of type "KVM Switch" on the Port Configuration page. For this form of tiering the following applies:

- The D2CIM-VUSB or D2CIM-DVUSB CIM should be used to connect to the local port of the KVM switch to the base switch.

- We are not certifying specific KVM switches in Release 2.4.5.

- The tiered KVM switch must support hot-key switching on its local port.

- The KVM switch must be configured to accept one of the allowable hot-key sequences and then switch to the selected target server.

- Advanced KVM features such as virtual media are not supported over the tiered connection.

- Consult the LX documentation for more information.

Windows KVM Client (AKC)

1. AKC can be launched from IE using HTTPS or HTTP with the following syntax: http[s]://<LX IP Address>/akc/

2. The "Enable AKC Download Server Certificate Validation" check box on the "Device Settings" page controls how AKC is launched by IE.

3. If disabled (default), users must ensure that (1) cookies from the IP address of the LX device being accessed are not currently being blocked, and (2) Vista, Win 7, Win 2008 Server users should ensure that the IP address of the device being accessed is included in their browser's Trusted Sites Zone, and that Protected Mode is not on when accessing the device.

4. If enabled, then the administrator must upload a SSL certificate with a valid host designation for the LX. In addition the user must add the certificate to the browser's Trusted Root CA store.

5. When using Direct Port Access with the new AKC Windows client, after connecting to the first target server port, a new browser window or tab should be used for subsequent connections.

6. IPv6 is not supported for AKC Client. Use one of the Java Clients (VKC, MPC) instead.

Networking

1. For reliable network communication, configure the LX and LAN Switch to the same LAN Interface Speed and Duplex. For example, configure both the LX and LAN Switch to Autodetect (recommended) or set both to a fixed speed/duplex such as 100Mbps/Full.

2. To further minimize network bandwidth for lower bandwidth situations, set the "Noise Filter" on the "Video Settings" panel in the remote clients above the default value of 2 - values of 3 or 4 are recommended.

3. IPv6 usage notes. IPv4 networking is the factory default. Enable IPv6 on the Network Settings panel for IPv6/IPv4 "dual stack" operation. IPv6 is available in standalone configuration. Access of remote ISO images in a virtual media connection via IPv6 is not supported due to third party software limitations. IPv6 with Apple MAC OS Leopard is not supported.

Other

1. In general, most administrative functions are available on the remote and local consoles. But some functions, by their nature, are only available on one console. For example, "Factory Reset" and the "Local Port Settings" are available on the local port. Firmware Update, Backup and Restore, and certain LX Device Diagnostics features are available from the remote client.

DLX 2.7 Release Notes, Revision 1   January 20, 2016

Proprietary and Confidential