



# Dominion® LX CIM Guide Version 1

This document provides a guide for Computer Interface Module (CIM) usage for the Dominion LX.






## ■ Dominion LX CIM Usage

The Dominion LX is a family of economical KVM-over-IP switches with single power, single LAN and virtual media. Targeted towards small and midsize 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.

The Dominion LX can use the following CIMs :

- The economical MCUTP cable CIMs: **MCUTPxx-PS2, MCUTPxx-USB, and MCUTPxx-SUSB**. These are available in several lengths, i.e. xx equals 06, 20, 40, and 60, representing lengths of 2 feet, 6.5 feet, 13 feet and 20 feet respectively.
- The standard Dominion CIMs: **DCIM-PS2, DCIM-USBG2** and **DCIM-SUN**.
- The Dominion II virtual media CIMs: **D2CIM-VUSB** and **D2CIM-DVUSB**
- The **P2CIM-SER** serial CIM can be used to connect the Dominion LX to a serial target, i.e. networking device and/or Linux/UNIX server.

The Dominion LX does not support Raritan Paragon CIMs other than the P2CIM-SER.

	Dominion LX	Overview
<b>MCUTP CIM Cables</b> 	<ul style="list-style-type: none"> <li>• MCUTPxx-USB</li> <li>• MCUTPxx-PS2</li> <li>• MCUTPxx-SUSB</li> </ul>	<ul style="list-style-type: none"> <li>• Cable CIMs</li> <li>• Fixed Length Cables</li> </ul>
<b>Basic Dominion CIMs</b> 	<ul style="list-style-type: none"> <li>• DCIM-PS2</li> <li>• DCIM-USBG2</li> <li>• DCIM-SUN</li> </ul>	<ul style="list-style-type: none"> <li>• Standard CIMs</li> </ul>
<b>Single Virtual Media CIM</b> 	<ul style="list-style-type: none"> <li>• D2CIM-VUSB</li> </ul>	<ul style="list-style-type: none"> <li>• OS Virtual Media</li> <li>• Absolute Mouse</li> </ul>
<b>Dual Virtual Media CIM</b> 	<ul style="list-style-type: none"> <li>• D2CIM-DVUSB</li> </ul>	<ul style="list-style-type: none"> <li>• BIOS Virtual Media</li> <li>• Absolute Mouse</li> <li>• LX Tiering</li> </ul>
<b>Serial CIMs</b> 	<ul style="list-style-type: none"> <li>• P2CIM-SER</li> <li>• P2CIM-SER-EU</li> </ul>	<ul style="list-style-type: none"> <li>• Connect Dominion LX to serial devices.</li> </ul>

## ■ Dominion LX Recommended USB CIM Usage

For Dominion LX, the recommended CIM depends on the features desired and the type of server and is as follows:

- **MCUTP Integrated CIM/Cables:**
  - Basic CIM features – no stored CIM name or serial number
  - USB, PS/2 & SUN Servers
  - Fixed length cables
- **DCIM-USBG2:**
  - Use flexible, economical CAT5 cabling
  - Basic CIM features
  - USB, SUN & Unix Servers
- **D2CIM-DVUSB:**
  - Advanced features: virtual media, absolute mouse synchronization
  - USB servers. BIOS use of Virtual Media
  - Required for LX to LX tiering (cascading).
  - Can be used for generic hot-key based tiering
  - Firmware update
- **D2CIM-VUSB:**
  - Advanced features: virtual media, absolute mouse synchronization
  - USB servers. OS use of Virtual Media
  - Can be used for generic hot-key based tiering
  - Firmware update

## ■ Dominion LX MCUTP Cable CIM Usage

For Dominion LX customers who want a basic, low cost CIM and don't plan to use virtual media or absolute mouse synchronization, **MCUTP cable CIMs** provide an economical alternative to the Dominion CIMs. The cable CIM is an integrated CIM and Cat5 cable available in several different lengths. The available MCUTP cable CIMs are as follows:

MCUTP06-PS2	Integrated UTP cables for PS2 ports, 2 feet
MCUTP20-PS2	Integrated UTP cables for PS2 ports, 6.5 feet
MCUTP40-PS2	Integrated UTP cables for PS2 ports, 13 feet
MCUTP60-PS2	Integrated UTP cables for PS2 ports, 20 feet
MCUTP06-USB	Integrated UTP cables for USB ports, 2 feet
MCUTP20-USB	Integrated UTP cables for USB ports, 6.5 feet
MCUTP40-USB	Integrated UTP cables for USB ports, 13 feet
MCUTP60-USB	Integrated UTP cables for USB ports, 20 feet
MCUTP06-SUSB	Integrated UTP cables for Sun USB ports, 2 feet
MCUTP20-SUSB	Integrated UTP cables for Sun USB ports, 6.5 feet
MCUTP40-SUSB	Integrated UTP cables for Sun USB ports, 13 feet
MCUTP60-SUSB	Integrated UTP cables for Sun USB ports, 20 feet

The MCUTP CIMs do not have an 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.

The other Dominion products cannot use the MCUTP cable CIMs; only the Dominion LX.

## ■ DCIM-USBG2 Standard USB CIM

The **DCIM-USBG2** is a low cost CIM, but lacks the virtual media, absolute mouse, and tiering features of the virtual media CIMs.

The DCIM-USBG2 supports both USB and SUN USB. A small switch on the unit determines USB or SUN USB. For Windows targets, the "P" setting should be used. For Sun targets, the "S" setting should be used. For other OS', start with the "P" position. If the keyboard and/or mouse do not operate correctly, switch to the "S" position.

**Important Note:** You must power cycle the CIM if you change the switch setting while the CIM is connected to the target server.

Steps to power cycle the CIM:

1. Remove the USB connector from the target server. The video connector can remain in place.
2. Wait 5 seconds.
3. Reconnect the USB connector.

You can configure the CIM using a setup menu for various operating modes, such as keyboard and mouse types and keyboard language. **See the appendix at the end of this document for more information.**

## ■ Virtual Media and Absolute Mouse Synchronization

A Dominion virtual media CIM is required for the virtual media and Absolute Mouse Synchronization features.

There are two virtual media CIMs:

- The **D2CIM-DVUSB** has dual USB connectors and should be purchased by customers who wish to utilize virtual media **at the OS and BIOS levels.**
- The **D2CIM-VUSB** has a single USB connector and is for customers who will use virtual media **at the OS level.**

Both support virtual media sessions to target servers supporting the USB 2.0 interface. These CIMs also support Absolute Mouse Synchronization as well as remote firmware update.

### Dual Virtual Media USB CIM (D2CIM-DVUSB)

The **D2CIM-DVUSB** has dual USB connectors and should be purchased by customers who wish to utilize virtual media **at the BIOS level**, plan to use Smart Cards, audio, or want to set up tiered configurations.

Advanced KVM features such as virtual media rely on the power of the USB protocol. But some BIOS do not support the USB specification well enough for these advanced features

**The D2CIM-DVUSB has two USB plugs, one for keyboard/mouse and one for virtual media. This enables many additional server BIOS to access virtual media drives.**

- The **black connector** on the DVUSB CIM is used for keyboard and mouse.
- The **gray connector** is used for virtual media. Keep both plugs of the CIM connected to the device at all times.

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

### Virtual Media CIM Bulk Pricing

- Packages of 32 and 64 D2CIM-DVUSB CIMs provide a discount for buying in volume. Consult your authorized reseller for more information.
- Packages of 32 and 64 D2CIM-VUSB CIMs provide a discount for buying in volume. Consult your authorized reseller for more information.

### Not all servers support Absolute Mouse Synchronization

A USB server port is required, and the OS must support this technology. Microsoft Windows and Mac servers support this, but not UNIX, SUN and Linux.

## ■ Digital Visual Interface (DVI)

Servers with DVI ports that support DVI-A (analog) and DVI-I (integrated analog and digital) can use a simple adapter to convert the DVI port to a standard VGA plug that can be connected to a LX CIM's VGA plug.

Raritan's **ADVI-VGA** adapter can be used with any Raritan CIM which has a VGA plug.

Servers with DVI ports that only support DVI-D (digital) will need a more expensive adapter to convert the DVI-D video to VGA.

## ■ Connect to Serial Devices with P2CIM-SER

The **P2CIM-SER** (and P2CIM-SER-EU for European market) can be used to connect a serial device (networking device, headless server) to a Dominion LX.

The **P2CIM-SER** converts serial device input to a standard KVM signal for use with Dominion LX. The CIM is powered via USB from the serial device or the PWR-SER-4 four port power adapter.

digital signal to an analog signal.

## ■ Tiering (Cascading) Feature for Dominion LX

For Dominion LX to LX, tiering (also known as cascading) is supported. A "Tiered" switch can be connected via the **D2CIM-DVUSB** to the "Base" switch. The D2CIM-DVUSB is the only CIM certified for this purpose

For the generic hot-key based tiering, the D2CIM-DVUSB or D2CIM-VUSB CIMs can be used.

## ■ Frequently Asked Questions:

### 1. What is the most inexpensive CIM I can use with the Dominion LX?

The economical MCUTP cable-CIMs, available for USB, PS/2 and Sun are. These are fixed length CIM cables.

### 2. I would like to use virtual media. What CIM do I need?

You need a virtual media CIM, either the D2CIM-DVUSB or D2CIM-VUSB.

### 3. Which virtual media CIM should I purchase?

If you plan to use virtual media at the **BIOS level** or if you plan to use **LX tiering**, then you should purchase the Dual USB CIM – **D2CIM-DVUSB**. This CIM will support virtual media in a wider set of BIOS as well. If you only plan to use virtual media at the **OS level**, then you can use the **D2CIM-VUSB**.

### 4. The customer wants absolute mouse synchronization, but not virtual media. How to handle this?

You can purchase the D2CIM-VUSB, but disable the virtual media permissions via the LX's management user interface.

### 5. The D2CIM-VUSB is too expensive. Is there an alternative?

You can purchase the D2CIM-VUSB (or D2CIM-DVUSB) in the 32 or 64 piece packages for a reduced price. Or you can purchase the DCIM-USBG2 or the MCUTP CIMs, which doesn't have virtual media and absolute mouse synchronization for a lower price.

### 6. Does the DCIM-USBG2 or MCUTP CIM Cables support virtual media and absolute mouse synch?

→ **No**, the D2CIM-DVUSB or D2CIM-VUSB is required for these features.

### 7. What about Mac target servers? What CIM should be used?

For a Mac target server, we recommend the D2CIM-VUSB or D2CIM-DVUSB and absolute mouse synchronization. The "MAC OS X (10.4.9 and later)" USB profile should be used when in the OS and the "BIOS Mac" USB profile when in the Mac BIOS.

### 8. I have a few serial devices that I want to connect to a LX. Can I?

Yes, the P2CIM-SER can be used to connect serial devices to a KX II or an LX.

### 9. What CIM should I use if a server has a DVI port?

You can use any CIM, but you will need a DVI to VGA adapter such as Raritan's ADVI-VGA.

### 10. Which CIMs can be used for tiering?

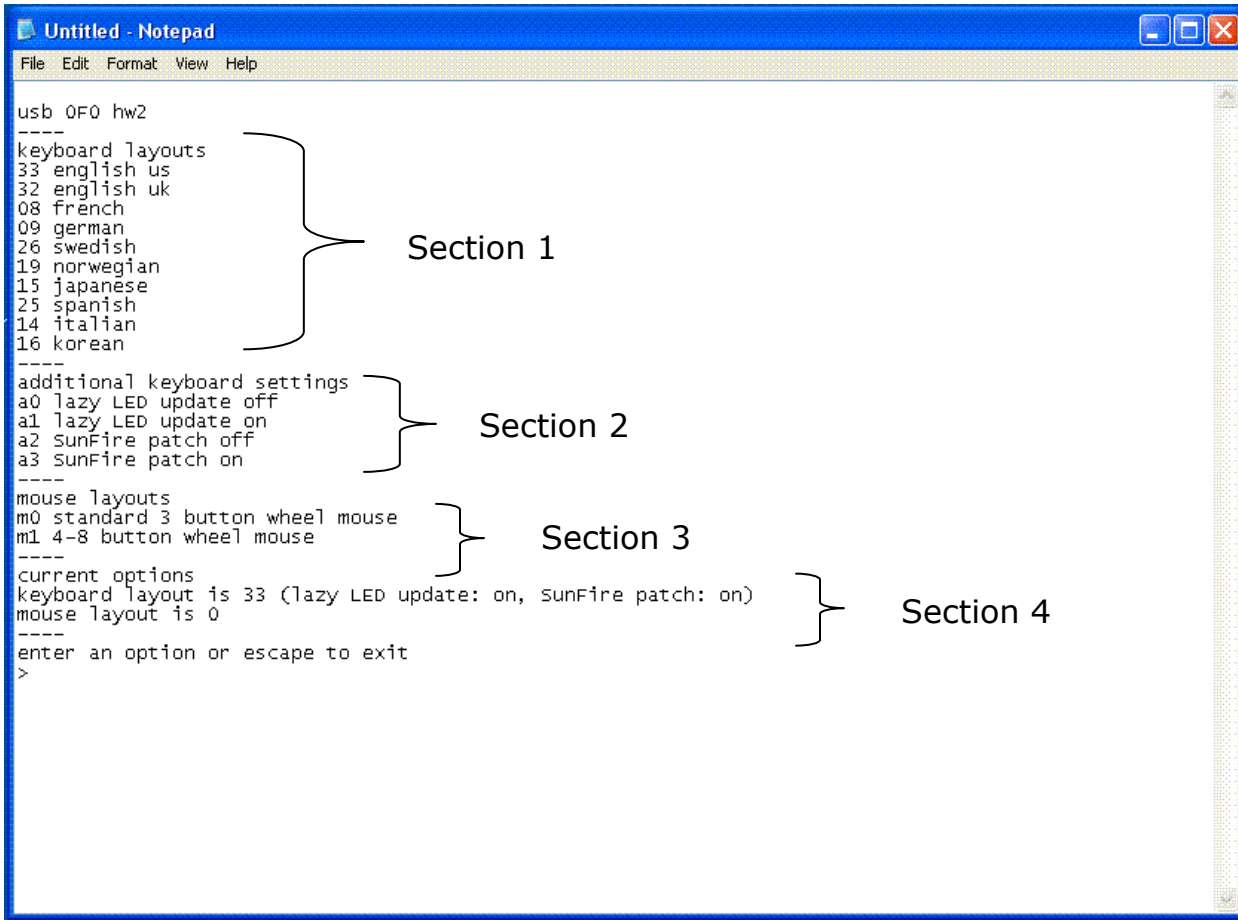
The D2CIM-DVUSB (Dual Virtual Media CIM) should be used to connect a "tiered" LX switch to the "Base" tier.

### 11. Which CIMs can be used for the generic hot-key based tiering?

The D2CIM-DVUSB or D2CIM-VUSB should be used to connect a generic KVM switch to the LX "Base" tier.

# The DCIM-USBG2 Setup Menu

This setup menu allows you to configure the CIM for various settings, such as keyboard and mouse types and keyboard language. To access the menu, press the Left-CTL and Num Lock keys simultaneously when a text editor window (in text input mode) has the focus on the target server. All settings are saved in non-volatile memory so the CIM will “remember” these settings. The setup menu as shown in Microsoft Windows Notepad is as follows:



```
usb 0F0 hw2
-----
keyboard layouts
33 english us
32 english uk
08 french
09 german
26 swedish
19 norwegian
15 japanese
25 spanish
14 italian
16 korean
-----
additional keyboard settings
a0 lazy LED update off
a1 lazy LED update on
a2 SunFire patch off
a3 SunFire patch on
-----
mouse layouts
m0 standard 3 button wheel mouse
m1 4-8 button wheel mouse
-----
current options
keyboard layout is 33 (lazy LED update: on, sunFire patch: on)
mouse layout is 0
-----
enter an option or escape to exit
>
```

The first line identifies the CIM FW and HW versions. The FW version is in hexadecimal.

**Section 1** defines the user keyboard language setting. If you are using a German keyboard, for example, you will enter 09 at the menu prompt (>).

**Section 2** defines additional keyboard settings:

- **Lazy LED Update.** When off, the CIM sends all LED status messages from the target server to the switch. When on, the CIM sends only status messages that are different from the message sent previously. Some target servers send the same status continually, possibly overloading the switch. This option prevents the overload.
- **Sun Fire Patch.** A new option introduced in firmware 0EF handles the non-standard USB operation of some Sun Fire target servers. If these servers do not receive a keyboard packet periodically, they assume the keyboard and mouse are disconnected and do not respond to further input. When the switch is in the 'S' position, and the feature is enabled (default), the CIM sends an empty keyboard packet every 500 milliseconds. The feature can be disabled via the CIM setup menu. It is safe to leave this feature on, even when not required as the only side effect will be unnecessary data sent to the target server.

**Section 3** defines the mouse type. Standard 3-button wheel mice (m0) and up to 8-button mice and trackballs (m1) are supported currently. The proper driver for the mouse must be installed on the target server.

**Section 4** displays the current settings.

This setup menu information also applies to the Paragon II P2CIM-AUSB.