

DOMINION® SX II

Frequently Asked Questions

Question	Answer
Dominion SX II Overview	
What is the Dominion SX II?	The Dominion SX II is Raritan's next-generation Serial Console Server that provides IP access and control of serial devices, anytime, anywhere. The new SX II is the most powerful, secure, reliable, easy-to-use and manageable serial-over-IP console server on the market. SX II provides productive, Java-free access to networking devices, servers, PDUs, telecommunications and other serial devices.
How is SX II different from the current SX?	The SX II is the next-generation version of the current SX. SX II has an entirely new hardware and software design that is substantially more powerful and capable than the current SX. The SX II provides virtually all of the features of the SX, plus exciting new capabilities. Unlike the current SX, all SX models come with dual power supplies, dual LAN connections and multiple local connection options. The SX II comes in 4, 8, 16, 32 and 48 models, available with and without an internal telephone modem. The SX II has a Java-free user interface and many of the management features are the same as those on the Dominion KX III.
What are the SX II's new features?	New features include: Java-free User Interface, Gigabit Ethernet, IPv6 networking, direct connection to Cisco devices with no rollover cables, FIPS 140-2 encryption, automatic configuration via USB stick or TFTP, 3G/4G cellular modem support, up to 8 gigabytes of flash space, multiple at the rack access options and Dominion compatible user interfaces and management.
Does the SX II have all of the current SX's features?	Virtually all of the current SX's features are included in the SX II. Several features (firmware update, fixed user groups) have been replaced by more powerful Dominion style features and a few infrequently used features have been removed.
What is the pricing for SX II?	While you might expect a significant price increase for the SX II, it is priced similarly to the current SX. The exact price difference varies model by model. Some SX II models are even less expensive than the current SX models!
What are the end-of-life plans (lifecycle) for the current SX?	The Dominion SX is end-of-sales as of April 1, 2016. Raritan will have limited software support for the first generation SX for two years from the end-of-sales announcement date; after that there will be no more firmware releases for the current SX. CommandCenter support will likely continue past the end-of-support date. Existing hardware warranties will be honored.
Is there a trade-in program for the SX II?	Yes, you have the opportunity to trade in the current SX and/or competitor serial console servers.
Dominion SX II Hardware Platform	
What are some of the hardware improvements?	There are many: more powerful CPU, memory and flash space, dual power supplies (AC & DC), dual gigabit LAN ports, port status LED's, 4 USB ports, autosensing DTE/DCE ports, USB laptop access, DVI/USB access, and modem option for all models.

How does the SX II's performance compared to the current SX?

The SX II hardware platform is substantially more powerful with a 1GHz CPU, an 8-fold increase RAM, and up to 8 Gb of flash space. SX II supports up to 10 sessions per port and up to 200 total serial sessions. Port configuration is 15 to 23 times faster, with order of magnitude improvements in simultaneous connections, connection speed and serial processing.

What type of network connections does the SX II have?

The SX II has two Gigabit Ethernet LAN ports that are auto-sensing to support 10/100/1000 Megabit connections. These LAN ports can be configured for (1) single LAN connection, or (2) dual LAN connections; the latter with (a) failover or (b) simultaneous operation. Both IPv4 and IPv6 are supported.

Are all SX II models 1U? Even the 48 port model?

Yes, all models are 1U and include a rackmount kit. Like, the current SX, the 48 port model has 48 ports on the back panel; to make room for this, the dual power outlets are on the front panel.

How much flash space is available for logs?

More than you could ever possibly use!! Four and eight port SX II's have 2 Gigabits of flash space. The other models have 8 Gigabits of flash space.

Does the SX II support remote power control?

Yes, the SX II supports remote power control for serial devices via connection to Raritan PX intelligent rack PDU's.

What is the pin definition for the SX II's local admin port?

The SX II local admin port is an RJ-45 port with the following DTE pinout (Pin/Signal): 1/RTS, 3/TXD, 4/GND, 5/GND, 6/RXD, 8/CTS. You can connect to a DB9 port on a laptop using the Raritan ASCSDB9F RJ-45(female) to DB9 (female) adapter with a Cat5 cable.

Does Dominion SX include a 19" rack mount kit?

Yes. Dominion SX II comes standard with a complete ready-to-install 19" rack mount kit.

Serial-over-IP Sessions and Access

What types of serial access are available?

The SX II has the widest variety of serial access. This includes: SSH, Telnet and Java-free web browser serial connections. Web browser access is available via the Java-free HTML Serial Client and through Raritan CommandCenter. Convenient Direct Port Access (DPA) methods are available. At-the-rack access is available via serial cable, USB and via a KVM console. Emergency modem access is available via optional internal modem or external 3G/4G cellular modem.

What is Direct Port Access ?

Direct Port Access provides direct and convenient access to a specific serial device connected to the SX II. Multiple Direct Port Access (DPA) methods are available via SSH, Telnet and HTTP/URL.

Does the SX II support TELNET?

TELNET is supported, but is disabled by default for security reasons as TELNET does not support encrypted sessions. We recommend that SSH is used instead of TELNET.

What about emergency access via modem?

There are two types of modem access supported. First, an internal telephone modem is optional for each SX II model (DSX2-...M models). Second, for 3G/4G cellular modem access, you can connect the Sierra Wireless Airlink, GS440, GX440, GX450 wireless modems to the SX II's USB port and access the SX II via the modem's IP address.

How can I secure the Sierra Wireless modem?

You can use the SX II's Firewall feature to create Linux-style "iptables" rules to secure the connection to the wireless modem. In addition the modem itself has a firewall capability. For added security, there is an option to enable the Sierra modem only when LAN access is not available.

How can I access the SX II when I am in the data center?

The Dominion SX II provides multiple types of at-the-rack access. To connect to a laptop or PC you can connect to its RJ45 serial port or USB mini-B port. You can connect a crash cart or rackmount keyboard tray to the SX II's DVI and USB KVM ports. To access the SX II's web-based user interface, connect a crossover Ethernet cable to the SX II's LAN port.

How can I get consolidated access to the local ports of multiple SX II's?

There are two ways to do this. First you can connect the serial admin ports of multiple SX II's to another SX II with straight Cat5 cables. Second you can connect the DVI/USB local ports of the SX II's to a KVM switch like the Dominion KX III. This can give you access to multiple SX II's in and around the data center.

What baud rates are supported?

Multiple baud rates are supported: 1200, 1800, 2400, 4800, 9600 (default), 19200, 28800, 38400, 57600, 115200, and 230400 bits per second. Can set this on a per port basis from the Port Configuration page or CLI.

What code-sets does the terminal emulator in Dominion SX II support?

Dominion SX release 3.0 or higher supports VT100/VT220/VT320 and ANSI with the following code-sets: default, US-ASCII, ISO-8859-1, ISO-8859-15, UTF-8, Shift-JIS, EUC-JP, EUC-CN, and EUC-KR.

How many serial devices can be simultaneously accessed through a given SX II?

A group of users can simultaneously access all the serial devices connected to a SX II. For example, with a 48 port SX II, users can simultaneously connect to and access all 48 serial devices connected to it!

How many users can simultaneously access a single serial device connected to a SX II?

Up to ten users can access a single serial device at the same time, up to a limit of two hundred simultaneous accesses per SX II. For example, on a 32 port SX II, six users could each simultaneously access each of the 32 serial devices connected to it for a total of 192 user sessions. This would not be a typical user scenario, but illustrates the powerful serial processing capacity of the SX II.

Is the Dominion SX unit SUN® "break-safe"?

All Dominion SX units are SUN "break-safe" for use with SUN Solaris.

Connecting to Serial Devices

What type of devices can the SX II connect to?

The SX II can connect to a wide variety of serial devices including network routers, Ethernet switches, firewalls, UNIX/LINUX servers, Windows Servers, virtual hosts, rack PDU's, UPS systems and telecom/wireless gear. The SX II connects via Cat5 cable to these device's RJ-45, DB9 or DB25 serial console ports.

Are rollover cables required?

No. SX II serial connections are auto-sensing, so that they can connect to both DTE (data terminal equipment) and DCE (data communications equipment) console ports without rollover cables. The SX II can connect to Cisco and other compatible devices with RJ-45 console ports without rollover cables.

What is DTE/DCE and why is it important?

An RS-232 serial port is either DTE or DCE. DTE ports are typically used on a computer or terminal, i.e. male DB9 COM port. And DCE is used on a modem, CSU/DSU, multiplexer or peripheral. A DTE port is typically cabled to a DCE port. Connections between like ports must be connected by a specific rollover cable. Since SX II is auto-sensing, it can connect to either DTE or DCE ports.

Are adapters required?

To connect to RJ45 console ports, a regular Cat5 cable can be used with no adapter. Raritan also sells male and female DB9 and DB25 adapters for devices with these types of serial ports. Adapters are also available to connect to Raritan PX intelligent Rack PDU's. See the SX II User Guide or online help for more information on adapters and pinouts.

What are some sample connections to serial devices?

The below table shows how to connect the SX II to standard networking and computer equipment. This is based on the type of serial port (RJ45, DB9 & DB25) and its gender (male or female). The required Raritan adapter is shown.

Vendor	Models	Serial Port	How to Connect
Cisco	Catalyst	RJ45	Cat5 Cable
Cisco	Catalyst	DB25F	ASCSD25M adapter and Cat5 cable
Cisco	Router	RJ45	Cat5 cable
Cisco	Router	DB25F	ASCSD25M adapter and Cat5 cable
Cisco	UCS	RJ45	Cat5 Cable
Cisco	PIX Firewall	DB9M	ASCSD9F adapter and Cat5 cable
HP	Servers	DB9M	ASCSD9F adapter and Cat5 cable
Dell	Servers	DB9M	ASCSD9F adapter and Cat5 cable
IBM	Servers	RJ45	Cat5 cable
Checkpoint	Firewall	DB9M	ASCSD9F adapter and Cat5 cable
Silicon Graphics	Origin	DB9M	ASCSD9F adapter and Cat5 cable
Sun	SPARCStation	DB25F	ASCSD25M adapter and Cat5 cable
Sun	Netra T1	RJ45	Cat5 cable
Sun	Cobalt	DB9M	ASCSD9F adapter and Cat5 cable
Various	Windows	DB9M	ASCSD9F adapter and Cat5 cable
Raritan	PX	RJ45	CSCSPCS-1 or CSCSPCS-10 cable

What is the maximum distance from the SX II to a serial device?

The distance varies according to the baud rate that is used. This can range from 4 feet for 230K baud to over 300 feet for 2.4K baud.

Installation, Management & Configuration

How do I initially configure the SX II?	Initial configuration can be done manually from the SX II local console or automatically via USB stick or TFTP server. Manual configuration can be done via CLI by connecting your laptop via (1) USB, (2) serial cable, or (3) by connecting a KVM console. You can also (4) use the web GUI connecting a laptop via a crossover cable. A Quick Setup Guide (QSG) is included.
Can the SX II be completely managed by CLI? Where is the CLI defined?	Yes, the SX II can be completely managed via CLI commands. The CLI is defined in the on-line help, user guide and available from the CLI itself.
Tell me more about the automatic configuration options.	There are two ways to automatically configure the SX II. First, it can be configured by a script of CLI commands, plugged into a USB port on the SX II. Second, a script of CLI commands can be stored on a TFTP server available via DHCP Server or configured into the SX. For security, both of these automatic configuration methods must be enabled by the administrator. There is the option to automatically name ports based on the login prompt returned by the serial device. Users can also copy the configuration to another SX II of the same model using the backup/restore function. Users can export the SX II configuration database to a file.
Does the SX II require a FTP Server for firmware upgrades like the current SX?	No, the SX II firmware upgrade process is like that of the KX III. No FTP server is required. The user browses to an encrypted firmware file downloaded from the Raritan website. Many of the management functions are the same as with the KX III. Note that the FTP option still exists via CLI to upgrade the device in this manner.
Can I copy my current SX configuration to the new SX II?	With the extensive software and hardware changes, the configuration backups of the current SX are unfortunately not compatible with the new SX II.
Where can I get a copy of the SNMP MIB for Dominion SX?	The SX II SNMP MIB is available from the Dominion SX II Support Page on raritan.com. It is also available from the Event Management - Settings page on the web GUI.
Does the SX II work with Raritan's Command Center?	Yes. The Dominion SX II requires CommandCenter Secure Gateway Release 6.1 and above, available in September 2015. Using CommandCenter, users can connect to thousands of serial [and KVM] devices, connected to the Dominion SX, SX II, KX III and other Raritan devices.

Security

Is the Dominion SX II secure?	Yes, the Dominion SX II has rock-solid security with military grade security features such as 256 bit AES encryption with a FIPS 140-2 mode and encryption module. The SX II has a long list of security features and each release is tested with a vulnerability scanner. Security patches will be made available from the Raritan website.
Is the Dominion SX II FIPS 140-2 certified?	The Dominion SX II uses an embedded FIPS 140-2 validated cryptographic module running on a Linux platform per FIPS 140-2 implementation guidelines. This cryptographic module is used for encryption of serial sessions when using the Raritan Serial Client (RSC).

Is ActiveDirectory authentication supported?	Yes, ActiveDirectory, LDAP, Radius and TACACS authentication are supported. In addition the SX II administrator can create local users with their passwords.
Is two factor authentication (2FA) supported?	Yes, by using a RADIUS server together with RSA SecurID tokens, two factor authentication can be supported. The user would append the token number to the password when logging in to the SX II.
Which ports need to be open for SX II connections?	Port 443 (for https); optionally port 80 (http) for user sessions. When using SSH, port 22 needs to be open. The TCP ports for HTTP, HTTPS, Telnet, SSH are all user configurable. These user configured ports will need to be open for access. Also, TCP port 5000.
What type of logging is available?	The SX II supports many types of events generated for user access, security events as well as administrative actions. Multiple logging methods are available including SNMP, Syslog, Email, NFS and internal log file.
Is the serial port data logged?	Yes, data from the serial devices can be logged to a local file on the SX II, Syslog or NFS server.
What is the default login and default password?	The default login is "admin" and the default password is "raritan". You are forced to change the password when you first log in to the SX II. We recommend that you also change the default "admin" name for security reasons. Also recommended is strong passwords for your local accounts, which can be enabled on the Security Settings panel.
I have lost the Admin password to the Dominion SX. What can I do?	You can restore the unit to its factory default settings. A factory reset function to restore the unit to factory default settings is provided. This reset function has several configurable options.

User Interface & Documentation

What type of web-based user interface does the Dominion SX II have?	The Dominion SX II Graphical User Interface is similar to the other Dominion products, providing a common look-and-feel across the Dominion SX II, KX, KSX and KX2-101-V2. In addition, similar management features are available including firmware update, backup and restore, security options and diagnostics.
Does the SX II require Java?	No, as of Release 2.1, the SX II has a Java-free user interface with the new HTML Serial Client. Java is also not required for CLI access to the SX II via SSH, Telnet or an at-the-rack connection.
Where can I get documentation (user guide, etc.) for the Dominion SX II?	The Data Sheet, available on the SX II Product Page, provides a good overview of the SX showing the available models, adapters and features. The Features and Benefits document, also available on the SX II Product Page, provides a list of the SX II features. The SX II Support Page provides detailed technical information including the Release Notes, User Manual, On-line Help, SX II MIB and firmware releases.