

Release Notes for Dominion® SX II Software Version 2.1 (Java-Free Solution)

Date: July 19, 2016

Applicable SX II models:

No Telephone Modem:	DSX2-4, DSX2-8, DSX2-16, DSX2-32, DSX2-48
Internal Telephone Modem:	DSX2-4M, DSX2-8M, DSX2-16M, DSX2-32M, DSX2-48M
DC Powered Models:	DSX2-8M-DC, DSX2-32M-DC, DSX2-48M-DC

Release Status: General Availability.

Dominion SX II Overview:

The Dominion SX II is Raritan's next-generation Serial Console Server that provides IT and network administrators secure 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.

Release 2.1 Overview

Release 2.1 is a major release based on Release 2.0 with a new Java-free Serial Client, several major enhancements, and support for the latest browsers and security updates. With this release, the SX II is now a Java-Free solution, when using the default HTML Serial Client (HSC).

Release 2.1 Features:

- **Java-Free Serial Client.** A new Java-free Serial Client, called the **HTML Serial Client (HSC)** is now available. This is equivalent to the old Java-based Raritan Serial Client (RSC), but does not utilize Java. HSC will be launched by default when the user connects to a serial device. RSC will still be available in this release for customers wanting to use it for compatibility reasons via the <SX II IP Address>/rsc URL.
- **Automatic Port Naming.** Customers now have the option to automatically name a serial port according to the shell or login prompt from the serial device. This simplifies and streamlines the time to configure and re-configure the SX II.
- **RSA SecurID Authentication.** Support RSA SecurID Hardware Tokens used with a Radius server for two factor authentication to the Dominion SX II.
- **SX II Configuration Report.** Customers can export the SX II configuration database to a human readable format for auditing or record keeping purposes.
- **Network Failover to Cellular Modem.** Customers have the option to use a USB cellular modem as emergency access only when wired network access is not available. That is, the cellular modem is only active when LAN access is not available.
- **TLS Security Options.** Customers have the option to disable TLS versions they consider insecure.
- **Java Free Administration.** Customers can use the <SX II IP Address>/admin URL for Java-Free administration. This mode is only for administration; no serial device access is available.
- **Miscellaneous fixes and updates.** Support select customer issues, new IT versions, security and documentation updates.

Dominion SX II Documentation:

The following user documentation is available for the Dominion SX II:

Dominion SX II User and Admin Guides – guide to the SX II's local and remote browser based user interfaces, administrator functions and general usage.

Dominion SX II Quick Setup Guide –for the initial setup of the SX II.

The Dominion SX II documentation is available from the Raritan.com website: www.raritan.com. Please go to the **Support** section and then select **Dominion SX II**.

Dominion SX II Online Help:

An **Online Help System** is available. Click on **Help – Online Help** in the left hand information panel on the SX II web based user interface and the Online Help system will launch. You can browse to the appropriate topic via the Contents, Index and Search tabs. The entire Dominion SX II 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/landing/product-online-help>

Dominion SX II Serial Adapters:

Dominion SX II can use the following serial adapters to connect to serial devices with DB9/DB25 ports and Raritan PDU's.

ASCSD9F	RJ-45(F) TO DB9(F) serial adapter
ASCSD9M	RJ-45(F) TO DB9(M) serial adapter
ASCSD25F	RJ-45(F) TO DB25(F) serial adapter
ASCSD25M	RJ-45(F) TO DB25(M) serial adapter
CSCSPCS-1	1' Cat5e RJ-45(M) to RJ-45(F) adapter to connect to Raritan PX or RPC rack PDUs
CSCSPCS-10	10' Cat5e RJ-45(M) to RJ-45(M) cable to connect to Raritan PX or RPC rack PDUs

Release 2.1 Compatibility Information:

1. **CommandCenter Release 6.1 or above is required for the Dominion SX II. The future CommandCenter Release 6.2 is required to launch the new Java-free HTML Serial Client from CommandCenter.**
2. **CommandCenter Releases 5.x and 6.0.x do not support the Dominion SX II.**
3. **SUN Java™ Runtime Environment (JRE) versions 7 and 8 are supported for use with the old Raritan Serial Client.** Java version 6 is not supported by the SX II.
4. The following table shows the latest Java versions system tested with this release. The SX II should work with future Java versions. The SX II firmware may need to be updated if the Java developers make incompatible changes to new Java versions.

If you have any Java issues, please check the SX II and main Support Pages on raritan.com and/or call Raritan Technical Support.

JRE	Latest Tested Update
Java 7	Update 79
Java 8	Update 91

Java usage recommendations:

- 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 their own SSL certificate to each SX II switch.
 - Customers need to affirmatively click through all security warnings for the Raritan Java applets to load.
 - The above JRE version information applies to the Dominion SX II when used standalone. When used with CC-SG, please consult the CC-SG Release Notes and Compatibility Matrix
5. Serial devices connected to the SX II can be accessed via web User Interface via:

Remote Serial Client	Description
Raritan HTML Serial Client (HSC)	New non-Java-client that runs inside the web browser. This is now the default serial client.
Raritan Serial Client (RSC)	Older java-based client invoked from the browser-based remote user interface. Can be invoked by the <SX II IP Address>/rsc URL

6. The following table shows the latest browser versions system tested with this release. The SX II should work with future browser versions, although the SX II firmware may need to be updated if incompatible changes are made to the browsers. If you have any issues, please check the SX II and main Support Pages on raritan.com and/or call Raritan Technical Support.

Browser	Latest Tested Version
Internet Explorer	11
Firefox	47
Chrome	51
Microsoft EDGE	25

7. **Security Information.** Openssl version v1.0.1m is used in this release. The SX II does not support SSLv2 or SSLv3. For highest security it only supports TLS. Supported versions include TLS v1.0, v1.1 and v1.2.

Release 2.1 Important Notes and Information:

- HTML Serial Client (HSC).** There are several differences between the new Java-free HSC and the existing Raritan Serial Client (RSC). A few infrequently used RSC features including Chat, Send Keystroke and Log Client Session are not available in HSC. The Manage Favorites features, which rely on Java, are only available when using the Raritan Serial Client.
- Automatic DTE/DCE Detection.** When connecting to serial devices that perform Automatic DTE/DCE Detection, it may be necessary to force a SX II serial port to DTE or DCE. This can be done via the Serial Port Settings.
- Dual LAN Ports.** The default behavior for the two SX II LAN ports is for two independent LAN ports, not automatic failover. If you would like automatic failover instead, then change the settings on the Network Settings page or use the admin > Config > Network command. The SX II's default IP Address for LAN1 is set for 192.168.0.192 to support initial configuration via crossover cable.
- Factory Reset Button.** For best results when using the Reset Button on the back panel, remove the USB plug from the lower USB slot if present. A buzzer will sound when the Reset Button is pressed while the device is booting.
- Extending the SX II Local Port.** Use Raritan's Cat5 Reach DVI product to extend the SX II local port outside the data center. At-the-rack access is also available using the Raritan T1700-LED and T1900-LED rackmount keyboard drawers using the SX II's DVI-D and USB ports.
- 3G/4G Wireless Modem.** The Sierra Wireless GX440, GX450, and ES450 Broadband Modems are the currently supported modems for emergency wireless access. Additional modems may be supported in the future. The modem is connected to the SX II via USB connection. A SIM Card is required from your wireless carrier, as well as a static IP Address for the modem. Check the User Guide or Online Help for modem configuration instructions.

Use the SX II Firewall "iptables" feature to secure access or use the modem's own firewall features. For increased security we recommend changing the name of the default "admin" account.
- FIPS 140-2 Encryption Module.** FIPS 140-2 Mode is supported when using the Raritan Serial Client (RSC) or Raritan HTML Serial Client (HSC). It is not supported for non-Raritan Serial Clients, e.g. Putty.
- Security Recommendations.** Utilize an SSH Client, instead of Telnet which does not encrypt sessions. When not using FIPS mode, set the Encryption mode to AES. Install a custom certificate on the SX II from a trusted Certificate Authority. Disable TLS v1.0 on the connecting clients and use TLS v1.2 for tighter security. Utilize the new HTML Serial Client (HSC), which does not use Java.
- RC4 Encryption.** The weak RC4 encryption is no longer supported by the SX II. Use the AES or Auto encryption modes.
- Automatic Configuration.** For security reasons (avoid un-authorized configuration), Automatic Configuration via USB stick or TFTP must be first enabled by the SX II administrator.
- Firmware Upgrade.** SX II firmware upgrade is done the same way as the other Dominion products, i.e. from the web-based GUI. The old SX FTP-based method is still available via the CLI.
- Distance Guidelines.** For reliable serial connections, adhere to these distance guidelines from the serial device to the SX II (Cat5/6 cable):

Baud Rate	Distance(feet)
2,400	300
4,800	200
9,600	100
19,200	50
38,400	25
57,600	16
115,200	8
230,400	4

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 page and click on Dominion SX II in the "Choose a Product" button.

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. Note that a FTP Server is no longer required to do the Firmware Update, although this method is still available from the CLI.

Firmware Upgrade Prerequisites:

If you have any questions, or do not meet the pre-requisites listed below, please STOP and contact Raritan Technical Support for further instructions. Please read the entire instructions (this document) before proceeding.

General Upgrade Instructions (web-based user interface):

1. **Note: for best results, the SX II device should be re-booted before the firmware upgrade is applied.** This will ensure no users are logged in or sessions active.
2. The user upgrading the SX II device must be a member of the default Admin Group to have sufficient privileges to do the upgrade.
3. Up to twenty minutes is required for the complete update procedure.
4. We recommend backing up the SX II using the "Backup / Restore" function on the Maintenance menu before starting the upgrade..
5. Close any remote or local SX II sessions to all devices connected to the Dominion SX II unit – servers, power strips, and serial devices.
6. If doing the firmware upgrade over a VPN, ensure that the connection is stable and that no inactivity timeouts have been set.
7. The detailed, step-by-step instructions to perform the upgrade are given below.
8. The software upgrades are written to flash memory, and this takes time to complete. Please do not power-off the unit, or disconnect the Ethernet connection while the upgrade is going on.
9. The SX II firmware can be upgraded by CC-SG; consult the CC-SG documentation for more information.
10. Should you experience any difficulties with the upgrade, call Raritan Technical Support for assistance.

Step-by-Step Upgrade Instructions:

1. **Note: for best results, the SX II device should be re-booted before the firmware upgrade is applied.** This will ensure no users are logged in or sessions active.
2. In Internet Explorer (or other supported web browser), type in the IP Address of your Dominion SX II unit, and wait as the web based interface loads.
3. Logon as an administrative user "admin" (or other member of the Admin Group).
4. Click on the "Firmware Upgrade" command on the "Maintenance" menu.
5. Browse to locate the .rfp file containing the update. Click the "Upload" button. The current and future versions will be displayed. Click the "Upgrade" button to start the upgrade.
6. The firmware upgrade will then proceed:
 - a. You cannot operate the SX II during the upgrade.
 - b. The upgrade panel will inform you of the progress of the upgrade. This upgrade step will take up to 15 minutes.
DO NOT REBOOT OR POWER CYCLE THE SX II DURING THE UPGRADE OR THE REBOOT!
 - c. You will see a completion message when the upgrade completes.

7. The device will now reboot and reset, which may take up to 5 minutes.
8. Close your web browser session and log back in after the reboot completes.
9. The SX II will beep when the upgrade is complete and the login screen will appear on the local console port.
10. Log back in via web browser, CLI or the local port. Use the "Upgrade History" report" on the "Maintenance" menu to check the upgrade status.
11. If you have any questions or issues during the update, call Raritan Technical Support for assistance.

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