

UNCLASSIFIED

**IDENTIFICATION OF VOLATILE
AND NON-VOLATILE STORAGE
AND
SANITIZATION OF SYSTEM
COMPONENTS**

**JUNIPER NETWORKS
SRX-SERIES
SRX220B/H(-POE)**

**REVISION 1.0
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1 INTRODUCTION

1.1 Purpose

The purpose of this document is to provide direction to identify volatile and non-volatile storages and remove non-volatile (NV) storage from the Juniper Networks' Secure Services Gateway SRX220 security platform.

1.2 Scope

This document only addresses the SRX220 security platform. While other platforms offered by Juniper Networks may contain similar hardware components, this document only applies to the SRX220. Furthermore, this document only provides direction for the identification and removal of NV storage components. It does not address destruction procedures for those components. As all of the NV storage components used in the SRX Series product family are commercial off-the-shelf (COTS) components, directions for destruction of those components are left to the governing Department, Agency, or Office.

2 EQUIPMENT OVERVIEW

2.1 Identification of Chassis

The SRX220 is a 1U chassis with 8 fixed 10/100/1000 Mbps Ethernet ports, two front-facing mini Physical Interface Module (mPIM) slot for additional port capacity, One rear facing Express card slot and one rear facing DC Jack for +12V power. The chassis is fixed with system motherboard, with two front-facing Universal Serial Bus (USB) interfaces, internal CF, internal Dynamic Random Access Memory (DRAM), Boot flash chip, IDEEPROM and Renesas chips, which are soldered on the system motherboard. The volatile and non-volatile memories can not be accessed without removing the top cover of the chassis and these are soldered to the motherboard except the USB storage devices. Users are not advised to remove these storage devices unless they want to scrap the system. If the user wants to remove them, the user has to de-solder these chips.

The following pictures show the different views of the SRX220 model:



Figure 2-1: SRX220 Chassis different views

2.2 Description of Components

The following major components are installed in the SRX220 chassis.

2.2.1 System Motherboard

The System Motherboard is the large printed circuit board located inside the chassis. The NOR Flash, IDEEPROM, Renesas and DRAM Chips are soldered to the motherboard (refer to the figure below). The CF card is plugged in the socket on the Motherboard and can be accessed from front side. The System Motherboard also has a mPIM interface slots.

The SRX220 has the following non-volatile memory devices:

- Anti-counterfeit security chip's internal EEPROM – stores the signature of the security chip. No user data is stored here.
- EEPROM– only used to store FRU identification data. No user data is stored here.
- Boot flash for Processor– stores the boot loader image for the Processor, no user data.
- CF stores the JUNOS image and user data
- CPLD internal flash - stores CPLD image, no user data is stored.

In addition, the SRX220 has two USB ports, into which the user can install an external USB disk device to store core dumps, system configuration, software images, etc. The system does not store any user data onto storage devices attached to these ports.

All other components of the SRX220 are volatile, so they do not store any information after power is lost, following are the volatile memory present on SRX220:

- DDR2 memory– stores User data here
- Processor Internal Cache memory and registers– stores operational data here

No other sub-components on the motherboard contain any storage elements, either volatile or non-volatile

2.2.2 Physical Interface Module Slot

The mPIM provides expanded input/output (I/O) capability for the SRX220. There are large varieties of mPIM's available for the SRX Series family. Some of the mPIM's have volatile or/and non-volatile memories, but none of them contain any user data.

2.2.3 External Power Supply Adapter

The SRX220 uses the external power supply Adapter and Adapter contains no storage elements, either volatile or non-volatile.

2.2.4 Cooling Subsystem

The Cooling Subsystem consists of 2 fans. The Cooling Subsystem contains no storage elements, either volatile or non-volatile.

3 POWER DOWN AND REMOVAL OF NON-VOLATILE STORAGE

In order to ensure that no data remains resident on an SRX220 platform in volatile memory, power must be removed from the system to clear all volatile storage.

Normally, the user will not be able to destroy user data stored in non-volatile memory as some non-volatile memory chips are soldered on system motherboard. However, if the user wants to destroy such data, the user needs to follow the steps below, but it is not advised unless the user wants to scrap the system.

1. The internal CF must be removed from the motherboard by ejecting the CF from the CF housing.
2. All external USB storage devices must be removed from the chassis

A detailed process is included in the following sections.

3.1 System Power Down

The SRX220 should be powered down gracefully if time exists to do so. A graceful power down takes less than a minute to complete. To perform a graceful power down of an SRX platform, complete the following steps:

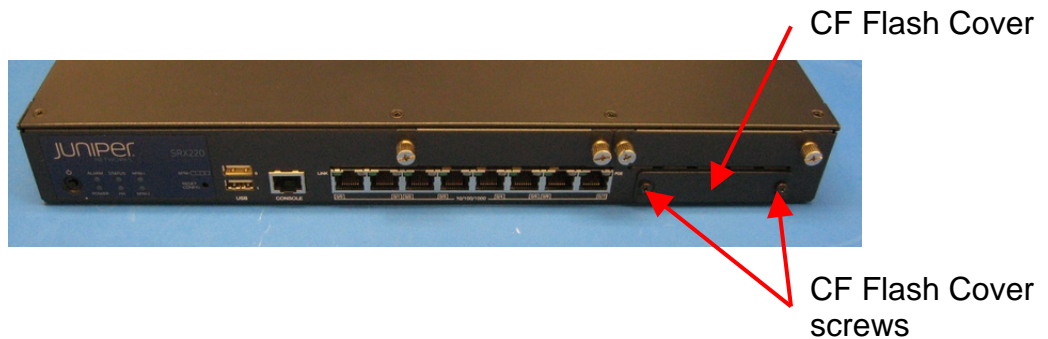
1. Execute the "request system power-off" command from the command line. Wait for positive feedback that the shutdown is complete. If connected via the console, you will see the message "The operating system has halted. Please press any key to reboot." If connected via Telnet or SSH, your session will be disconnected before the SRX completes the power down process. You can verify via the console or observe the LED's on the front of the chassis. If monitoring the LED's, ensure the Power LED is off (not solid on or flashing).
2. The user can power off the system via pressing and releasing the power button on front panel. This is shuts down the system gracefully.
3. The user can power off the system by pressing the power button in front panel for 10sec, system will shut downs immediately. You can verify via observing the Power LED. Please ensure the power LED is off.
4. Unplug the External power adapter cable from the SRX220 system.

5. The user can also shut down the system by removing AC supply to the External Power supply Adapter.

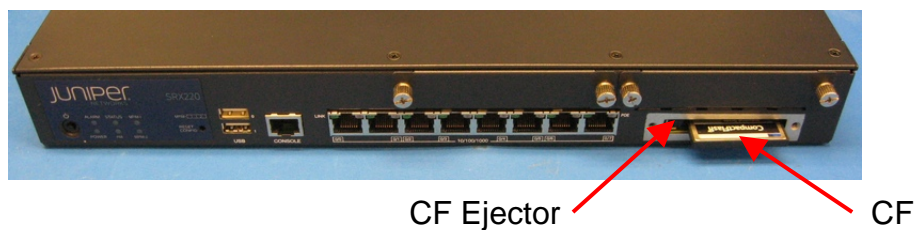
An emergency power down of a JUNOS system can be performed by omitting step 1 and 2, simply performing step 3, 4, and 5 in the process above. Note that an emergency power down could possibly corrupt the operating system and configurations stored on the CF card Flash. Once the system has been powered down, all volatile storage is clear.

3.2 Removal of the CF storage devices from the System Motherboard

1. Use #2 phillips screw driver to remove the two screws that secure the CF cover with chassis base.



2. Push CF ejector to pop it out and push ejector again to eject the CF from the system.



3. Remove CF and securely dispose of it.

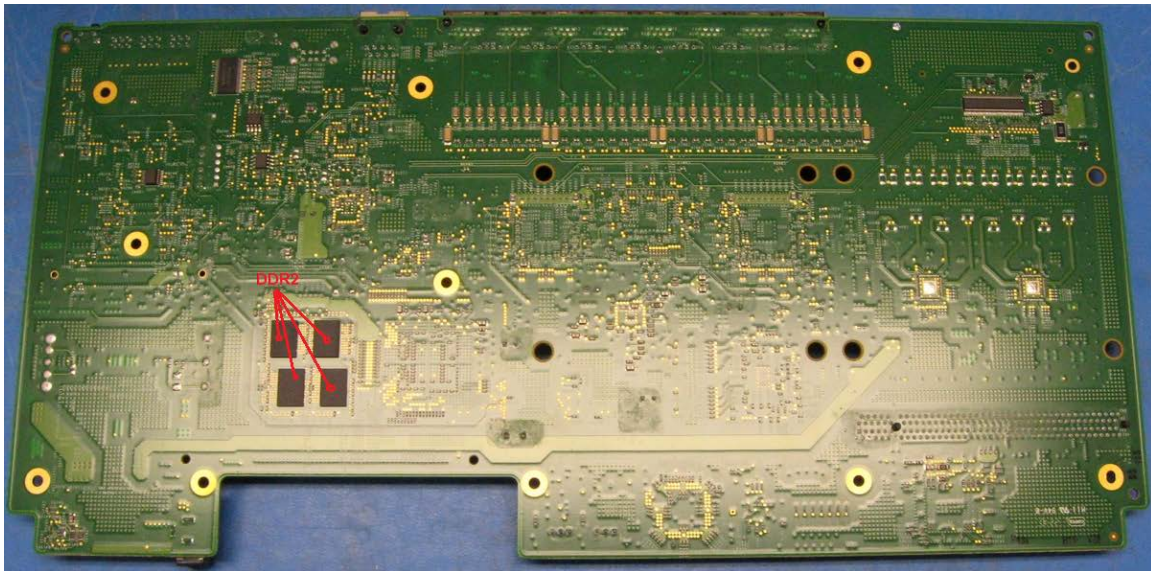
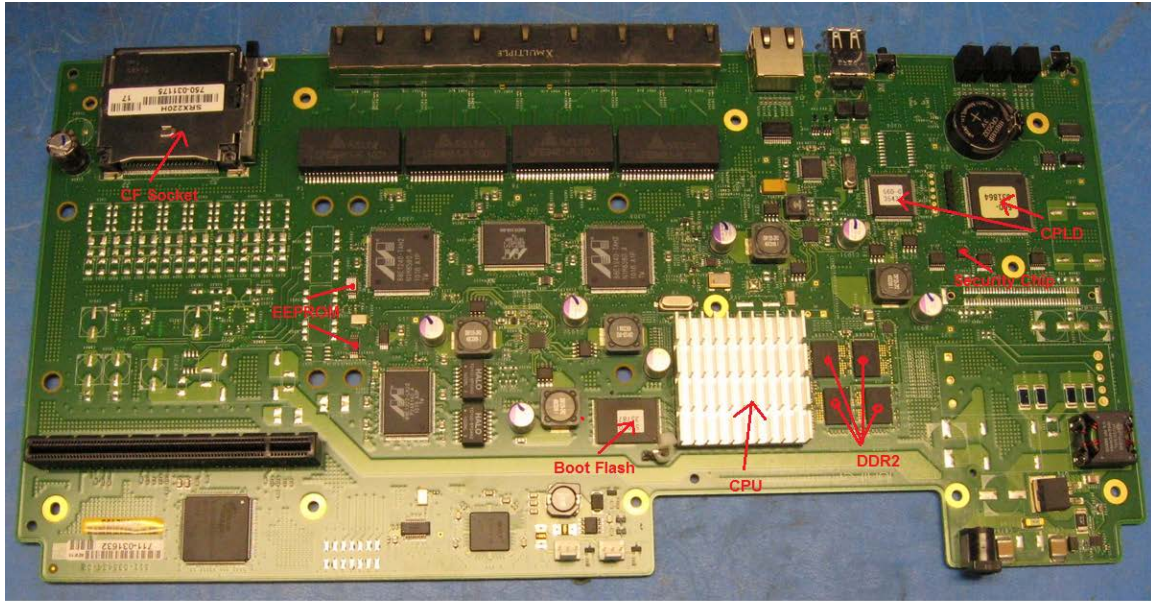


Figure 3-1: Identification of storage devices

3.3 Removal of USB Storage from the Chassis

There are two USB interfaces on the front of the SRX220 chassis. They are labeled "0" and "1", and are located directly to the left of the Console port. With the unit powered off, gently pull any attached media devices away from the SRX220 chassis to remove them.

This completes the sanitization process for the SRX220.

4 ENCRYPTION KEYS

The Encryption Keys are stored in DRAM, when system is running, and will be lost after the system is powered off.