

UNCLASSIFIED

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

**JUNIPER NETWORKS®
SRX-SERIES
SRX550-645AP(DP)**

**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 SRX550 security platform ("SRX550").

1.2 Scope

This document only addresses the SRX550 security platform. While other platforms offered by Juniper Networks may contain similar hardware components, this document only applies to the SRX550. Furthermore, this document only provides directions 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 customer's governing department, agency, or office.

2 EQUIPMENT OVERVIEW

2.1 Identification of Chassis

The SRX550 is a 2U chassis with six (6) fixed 10/100/1000 Mbps Ethernet ports, four (4) fixed 1G SFP ports, two (2) front-facing mini Physical Interface Module (mPIM) slot and six (6) front-facing Physical Interface Module (PIM) for additional port capacity, One (1) rear-facing ACE card slot and two (2) rear-facing 645W Power Supply Unit (either AC or DC, picture below shows one AC PSU). The chassis is fixed with system motherboard, with two (2) front-facing Universal Serial Bus ("USB") interfaces, internal compact flash ("CF"), internal Dynamic Random Access Memory (DDR3 DIMM), Boot flash chip, Integrated Driver Electronics ("IDE"), Electrically Erasable Programmable Read-Only Memory ("EEPROM") and Renesas Security chips, that are soldered on the system motherboard except the DIMM. The volatile and non-volatile memories cannot be accessed without removing the top cover of the chassis and these are soldered to the motherboard except for the DIMM and the USB storage devices. Customers are not advised to remove these soldered storage devices unless they want to scrap the system. If the user wants to remove them, the customer has to de-solder these chips.

The following pictures show the different views of the SRX550 model:

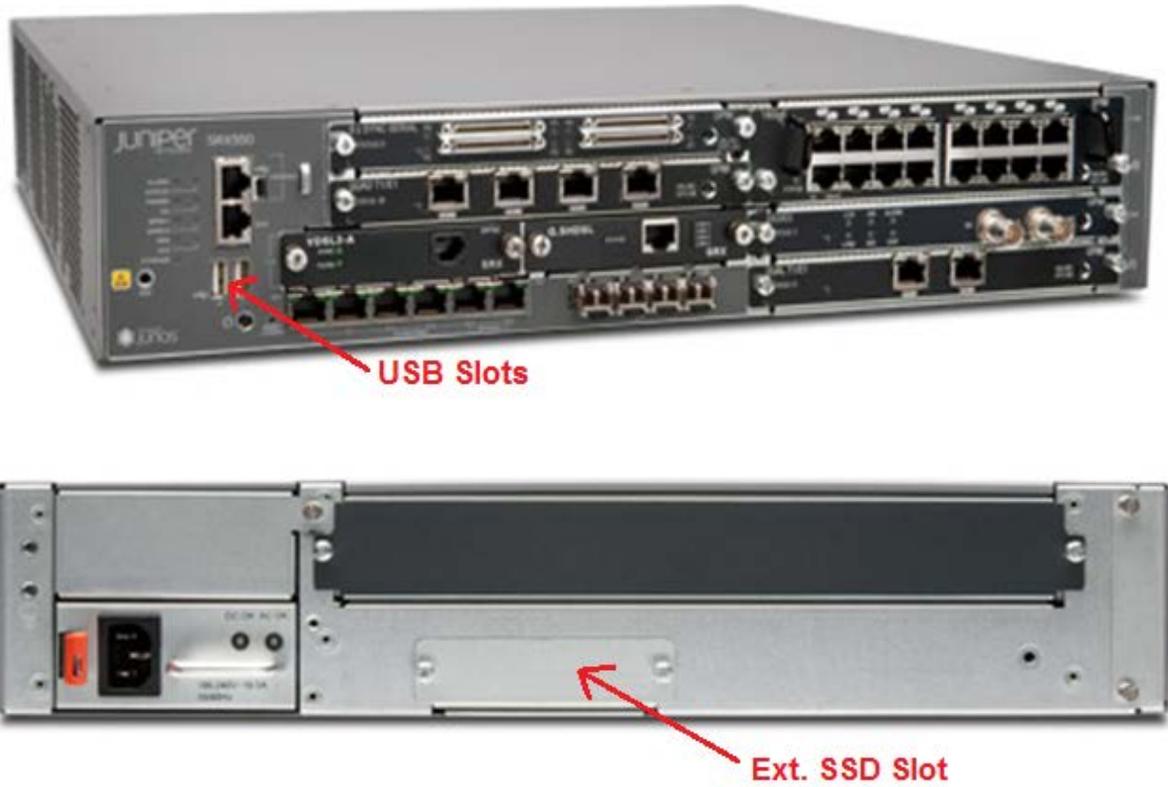


Figure 2-1: SRX550 Chassis different views

2.2 Description of Components

The following major components are installed in the SRX550 chassis.

2.2.1 System Motherboard

The System Motherboard is the large printed circuit board located inside the chassis. The NOR Flash, IDEEPROM, CPLD and Security Chip are soldered to the motherboard (refer to the figure below). The DDR3 DIMM and CF card are plugged in the socket on the Motherboard.

The SRX550 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.
- IDEEPROM– 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 SRX550 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 SRX550 are volatile, so they do not store any information after power is lost, following are the volatile memory present on SRX550:

- DDR3 DIMM 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 and PIM provides expanded input/output (I/O) capability for the SRX550. There are large varieties of mPIM / PIM's available for the SRX Series family. Some of the mPIM / PIM's have volatile or/and non-volatile memories, but none of them contain any user data.

2.2.3 External SSD Slot (for further options)

Juniper will design and provide the SSD for SRX550 in the future.

2.2.4 Power Supply Unit Slots

The SRX550 includes two power supply slots, it can be powered with one or two power supplies, the power supply contains IDEEPROM and has no users information will be stored in it.

2.2.5 Cooling Subsystem

The Cooling Subsystem consists of 4 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 SRX550 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 pulling 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 SRX550 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 power cord from the SRX550 system.

5. The user can shut down the system by removing DC cables from source for SRX550 DC system.

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

Open the chassis top cover,
Locate the CF card, see picture below,
Pull to remove the CF card.

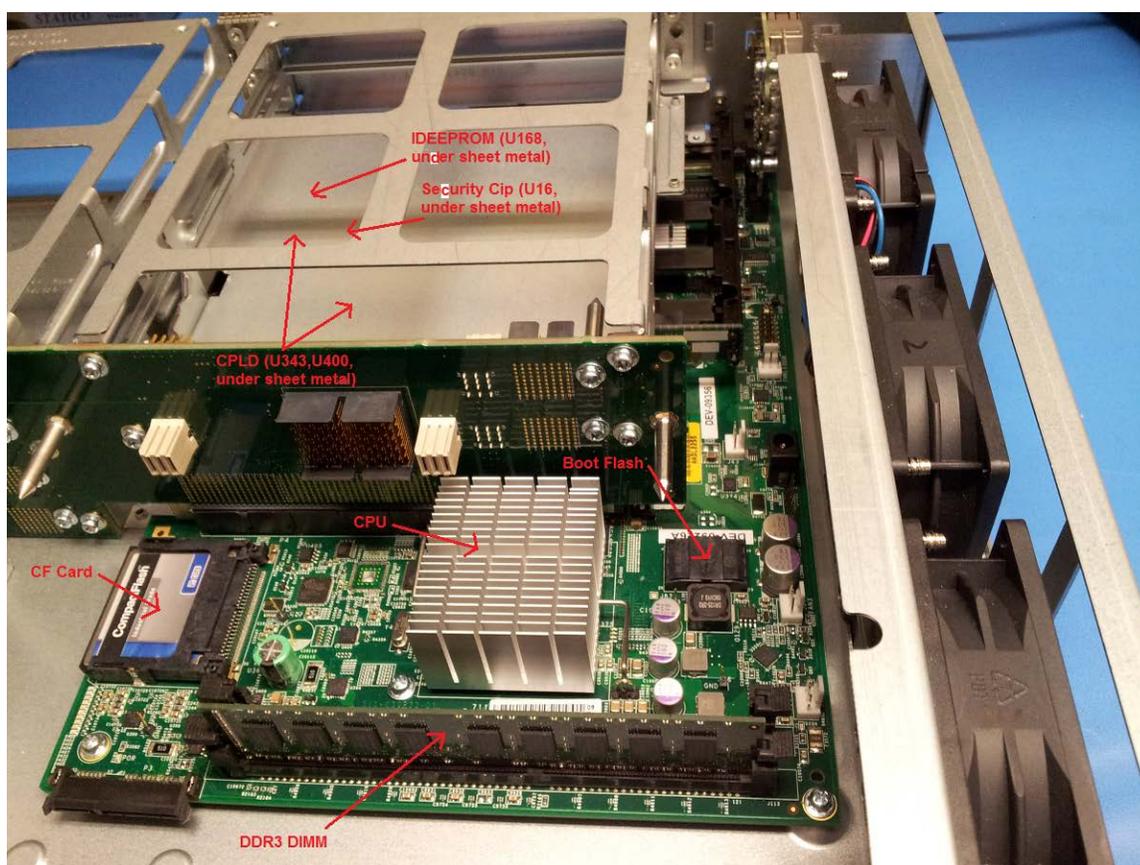


Figure 3-1: Identification of storage devices

3.3 Removal of USB Storage from the Chassis

There are two USB interfaces on the front of the SRX550 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 SRX550 chassis to remove them.

This completes the sanitization process for the SRX550.

4 ENCRYPTION KEYS

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