

UNCLASSIFIED

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

**JUNIPER NETWORKS
SRX-SERIES
SRX110**

**REVISION 1.0
Aug 14, 2017**

UNCLASSIFIED

TABLE OF CONTENTS

1 Introduction 1
 1.1 Purpose 1
 1.2 Scope..... 1
2 Equipment Overview..... 1
 2.1 Identification of Chassis 1
 2.2 Description of Components..... 3
 2.2.1 System Motherboard 3
3 Power Down and Removal of Non-Volatile Storage 5
 3.1 System Power Down 5
 3.2 Removal of the CompactFlash card from the device 6
 3.3 Removal of USB Storage from the Chassis 7
4 Encryption keys 7

TABLE OF FIGURES

Figure 2-1: Different views-SRX110 desktop device 2
Figure 2-2: Identification of storage devices 5

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 SRX110 security platform.

1.2 Scope

This document only addresses the SRX110 security platform. While other platforms offered by Juniper Networks may contain similar hardware components, this document only applies to the SRX110. 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

SRX110 is a desktop device with 8 fixed 10/100 Mbps ethernet ports, 2 WAN interfaces (one is VDSL/ADSL-POTS, the other is 3G), 1 USB interface, and 1 CompactFlash interface. This desktop device is fixed with a system motherboard, one front-facing Universal Serial Bus (USB) interface, one back-facing CompactFlash interface, internal Dynamic Random Access Memory (DDR2 and DDR chips), Boot flash chip, IDEEPROM and Renesas Security chips, which are all fixed on the system motherboard except the CompactFlash card. The volatile and non-volatile memories cannot be accessed without removing the top cover of the device and these are soldered to the motherboard except the CompactFlash card. It is not advised to remove these storage devices unless users want to scrap the system. If removing them, then user has to de-solder these chips.

The following pictures show the different views of the SRX110 model:



Figure 2-1: Different views-SRX110 desktop device

2.2 Description of Components

The following major components are installed in the SRX110.

2.2.1 System Motherboard

System Motherboard is the printed circuit board located inside the device. DDR2/DDR chips, Flash, IDEEPROM, and Security chip are all soldered to the motherboard (refer to the figure 2-2). CompactFlash card can be plugged into/out of the socket on the rear side of SRX110.

SRX110 has the following non-volatile memory devices:

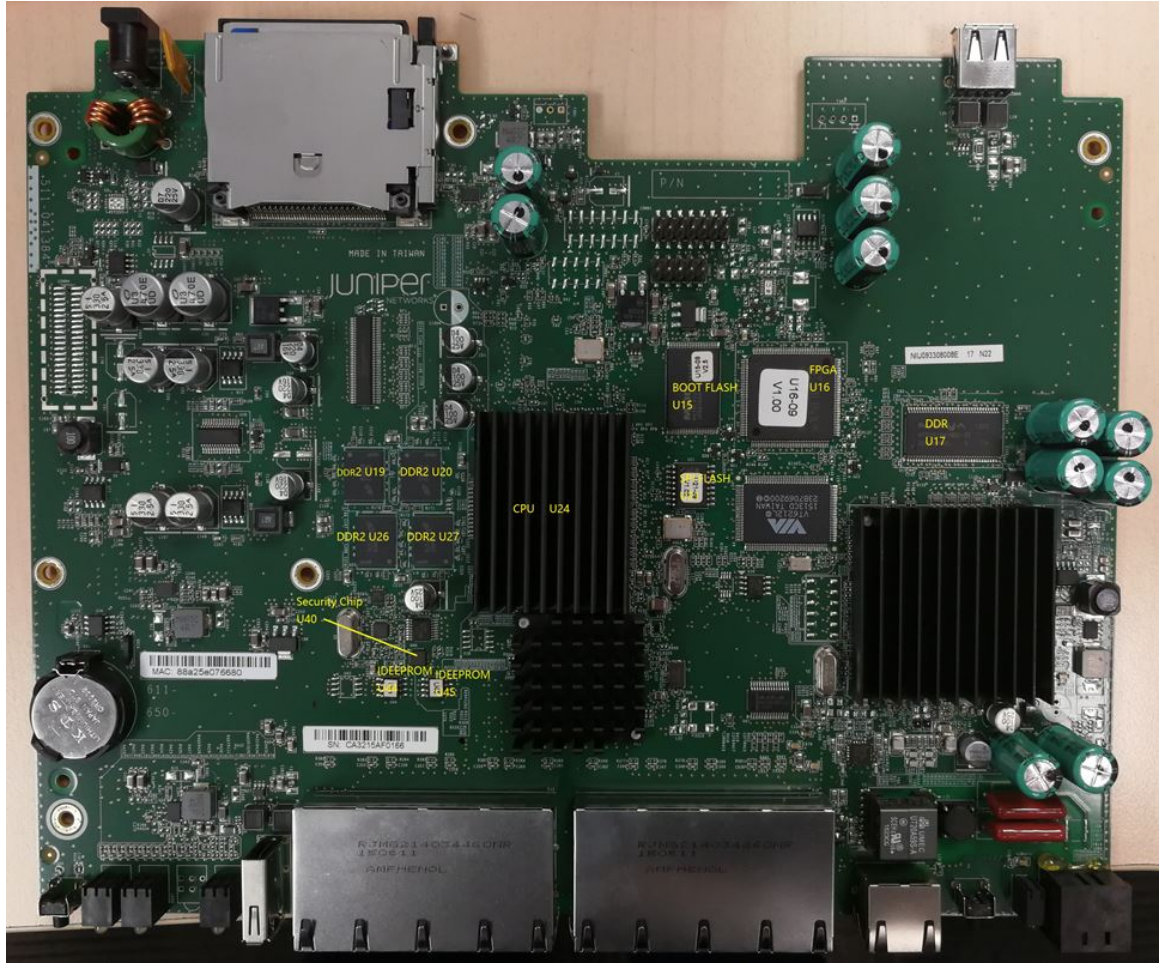
- Internal EEPROM in the Anti-counterfeit security chip – stores the signature of the security chip. No user data is stored here.
- IDEEPROM – only used to store FRU identification data. No user data is stored here.
- Boot flash for Processor – stores the boot loader image for the Processor, no user data.
- SPI flash for BCM6368 – stores the configuration info. for the BCM6368, no user data.
- CompactFlash card stores the JUNOS image and user data.

In addition, SRX110 has one USB port on the front panel, into which user can install an external USB disk device to store core dumps, system configuration, software images, etc. System does not store any user data into the storage devices attached to this port.

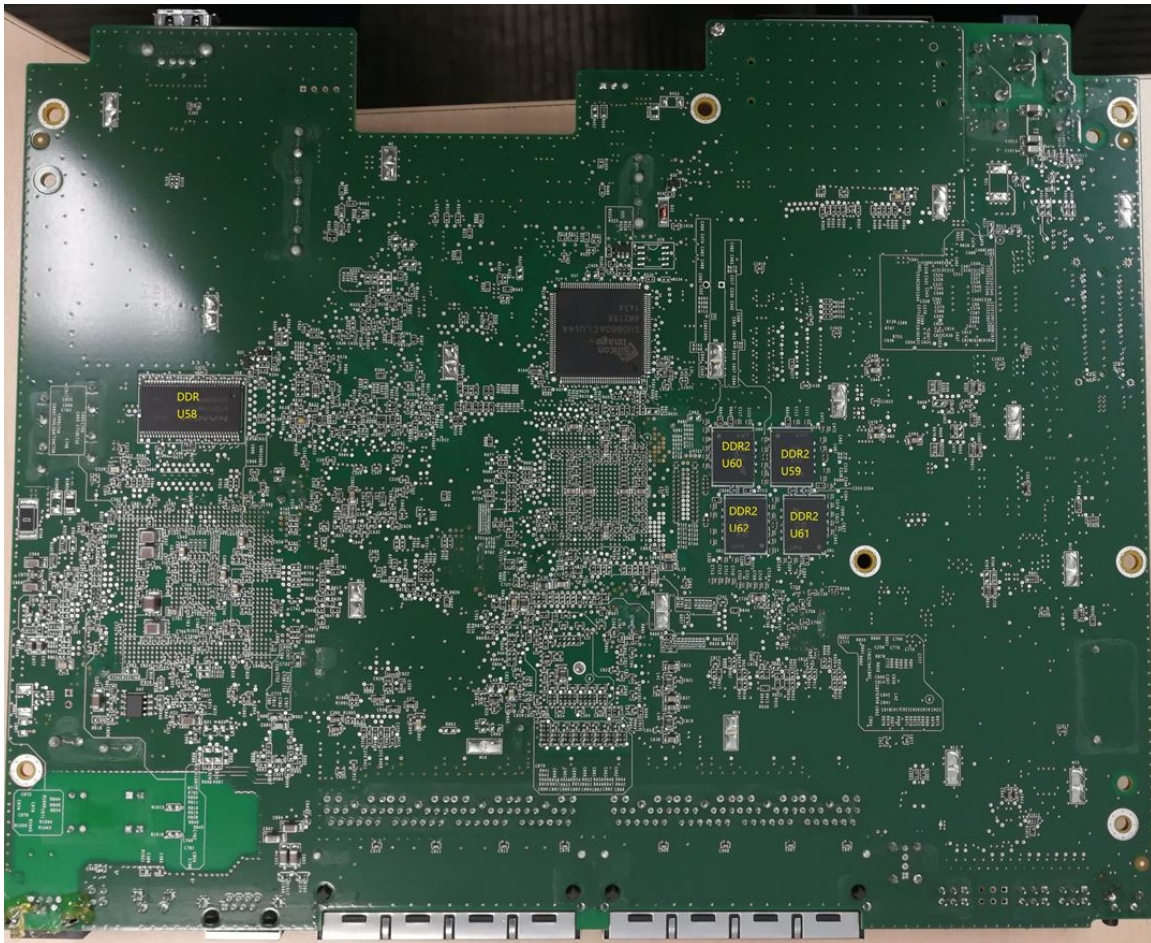
All other components of SRX110 are volatile, so they do not store any information after power is lost, below are the volatile memory on SRX110:

- DDR2/DDR chips memory – stores user data here
- Processor Internal Cache memory and registers – stores operational data here
- FPGA internal memory – stores FPGA image, no user data is stored

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



Top View



Bottom View

Figure 2-2: Identification of storage devices

3 POWER DOWN AND REMOVAL OF NON-VOLATILE STORAGE

In order to ensure that no data remains in volatile memory on the SRX110, it is required to remove power from the system to clear all volatile storage.

If user wants to remove the non-volatile memory that contains user data,

1. CompactFlash card should be removed out of the CF Card socket on the rear side of SRX110.
2. All external USB storage devices should be removed from the device.

Kindly refer to more info. in the following sections.

3.1 System Power Down

SRX110 should be powered down gracefully. It takes less than a minute to power off the device. To perform a graceful power-down for the SRX platform, please follow the steps below:

1. Execute the “request system power-off” command from the command line. Wait for positive feedback after the power-down is completed. If connecting via the console, you will see the message “The operating system has halted. Please press any key to reboot.” If connecting 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 device. If monitoring the LED’s, ensure the Power LED is off (not solid on or flashing).
2. User can power off the system via pressing and releasing the power button on front panel. This can shut down the system gracefully.
3. User can power off the system by pressing the power button in front panel for 10sec, system will shut down immediately. You can verify it via observing the Power LED. Please ensure the power LED is off.
4. Unplug the power cord from SRX110.

An emergency power-down of a JUNOS system can be performed by omitting step 1 and 2, simply performing step 3 and 4 mentioned above. Note that an emergency power down could possibly corrupt the operating system and configurations stored in the CompactFlash card. Once the system has been powered down, all volatile storages in the device are clear.

3.2 Removal of the CompactFlash card from the device

First unmount the CompactFlash card cover on the rear side of the device, then push the stick beside the CompactFlash card twice, finally CompactFlash card would come out of the socket.



3.3 Removal of USB Storage from the Chassis

There is one USB interface on the front of SRX110. After SRX110 is power-down, gently remove any attached media devices away from SRX110.

4 ENCRYPTION KEYS

Encryption Keys are stored in DRAM while device is running, and will be lost after the device is power-down.