

UNCLASSIFIED

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

**JUNIPER NETWORKS
SSG-SERIES
SSG520M**

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1 INTRODUCTION

1.1 Purpose

The purpose of this document is to provide direction to identify and remove all non-volatile (NV) storage from the Juniper Networks' Secure Services Gateway SSG520M security platform.

1.2 Scope

This document only addresses the SSG520M security platform. While other platforms offered by Juniper Networks may contain similar hardware components, this document only applies to the SSG520M. 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 SSG Series product family is 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 SSG520M is a 2ru chassis with four fixed 10/100/1000 Ethernet ports, six front-facing Port Interface Module (PIM) slots for additional port capacity, and two rear-facing slots for AC or DC power. The chassis control plane is fixed to the system motherboard, with two front-facing Universal Serial Bus (USB) interfaces, internal Compact FLASH (CF), and internal Dynamic Random Access Memory (DRAM). The CF and DRAM can not be accessed without removing the top cover of the chassis.



Figure 2-1: SSG520M Chassis

2.2 Description of Components

The following major components are installed in the SSG520M chassis.

2.2.1 System Motherboard

The System Motherboard is the large printed circuit board located inside the chassis. The CF and DRAM modules connect directly to the motherboard (refer

to the figure below). The motherboard also holds the encryption acceleration card and the PCI bridge interface for the optional PIM's. The CF is the only NV storage on the motherboard. The DRAM is the only volatile storage on the motherboard. No other sub-components on the motherboard contain any storage elements, either volatile or non-volatile.

2.2.2 Switch IO Card

The Switch IO Card is the small PCB inside the chassis. It contains the four fixed 10/100/1000 Ethernet ports of front panel, this Switch IO card contain neither NV storage and nor volatile storage.

2.2.3 Port Interface Modules

The PIM's provide expanded input/output (I/O) capability for the SSG520M. There is large variety of PIM's available for the SSG family. None of the PIM's house any storage elements, either volatile or non-volatile.

2.2.4 Power Supply Unit

The SSG520M has build-in Power Supply Units (PSU's) on the right side of the back panel. PSU doesn't house any storage elements, either volatile or non-volatile.

2.2.5 Cooling Subsystem

The Cooling Subsystem consists of one fan and an air filter. 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 a SSG520M platform, the following steps must be performed:

1. Power must be removed from the system to clear all volatile storage
2. The internal CF must be removed from the motherboard
3. 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 SSG520M should be powered down gracefully if time exists to do so. A graceful power down takes less than five minutes to complete. To perform a graceful power down of an SSG 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 SSG 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. For a system with one or two AC PSU’s, remove all electrical cables from their respective PSU’s. For a system with DC PSU’s, flip the breaker to the open position. **DO NOT ATTEMPT TO REMOVE POWER CONNECTIONS FROM A DC PSU! SERIOUS INJURY OR DEATH MAY RESULT!**

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

3.2 Removal of the CF from the System Motherboard

Once the SSG520M has been powered down, the next step is to remove the CF from the System Motherboard. The CF resides near the PSU’s on the top of the motherboard. To remove the CF from the motherboard, complete the following steps:

1. If the SSG520M chassis is rack mounted, remove it from the rack and remove the rack mount brackets from the side of the unit.
2. Place an electrostatic bag or antistatic mat on a flat, stable surface.
3. Attach an electrostatic discharge (ESD) grounding strap to your bare wrist and connect the strap to one of the ESD points on the chassis. Make sure the router is attached to a proper earth ground.
4. Use a #1 phillips screwdriver to remove the nine screws that secure the cover to the top of the chassis. Three screws are located on the top of the cover along the rear of the chassis. The other six are located along flange of the cover that extends over the sides of the chassis. There are three screws on each side of the chassis
5. Slide the cover towards the back of the chassis and lift to remove.
6. Locate the CF on the motherboard according to the figure below:
7. Use a small screwdriver or blade to gently slide the CF out of the holder.
8. Place the CF on the antistatic mat.

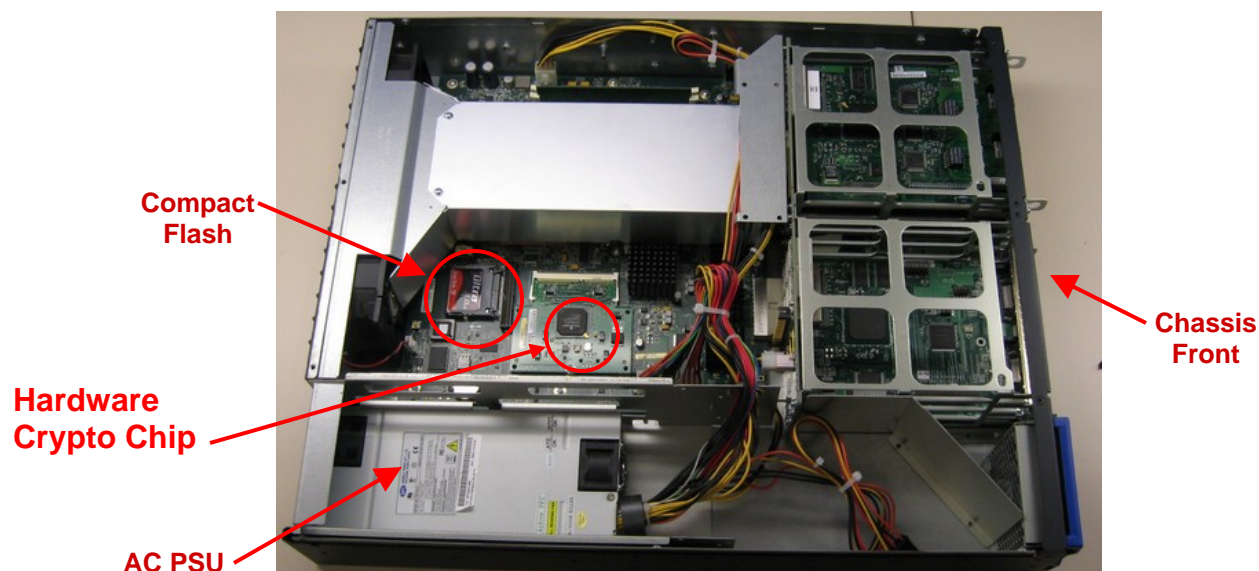


Figure 3-1: Removal of CF from a SSG520M

3.3 Removal of USB Storage from the Chassis

There are two USB interfaces on the front of the SSG520M chassis. They are labeled “0” and “1”, and are located directly to the right of the Console and Auxiliary ports. With the unit powered off, gently pull any attached media devices away from the SSG520M chassis to remove.

This completes the sanitization process for the SSG520M

4 ENCRYPTION KEYS

The Encryption Keys are stored in DRAM, CPU's cache and Hardware Crypto Chip's cache (if the system has HW Crypto Chip presented) when system is running, and will be lost after the system is powered off.