

***Identification of volatile and
non-volatile storage and
sanitization of system
components***

**JUNIPER NETWORKS
QFX5230-64CD**

**REVISION 1.0
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1 INTRODUCTION

1.1 Purpose

The purpose of this document is to provide direction to identify all non-volatile (NV) storage from the Juniper Networks QFX5230-64CD platform and removal of user data storage device. Non-Volatile (NV) storage can store user data information and system configuration data even when system not powered. Volatile (V) storage is a system memory that only retains data or its contents while system powered but when system powered off or interrupted, its data or contents are immediately lost.

1.2 Scope

This document is specific to QFX5230-64CD platform while other platforms offered by Juniper Networks may contain similar hardware components. 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 the NV storage components used in the QFX5230-64CD 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

QFX5230-64CD has 64x400G QSFP-DD ports and it can be mounted in a 19" rack.



Figure 1 QFX5230-64CD front & Rear view.

2.2 Description of Field Replaceable Units (FRU)

The power supply, fan tray, and transceivers are hot swappable. You can remove and replace them without powering off the system or disrupting system functions.

None of these components stores user or system configuration data. All NV RAM is either soldered or installed onto the system board.

3 NON-VOLATILE MEMORIES

This section covers the identification of non-volatile memories on QFX5230-64CD system.

- CPU Board:
 - SATA SSD module – stores user data, evo software and configuration
 - BIOS Flash
 - IDEEPROM
 - RECPLD & Backup flash
- Main board:
 - IDEEPROM
 - TXMC FPGA Flash memory
 - Power monitor IC (PMIC)
 - Port CPLDs and Backup flash
 - TH4 Flash memory
- Management Board:
 - NIC configuration Flash
- Fan board:
 - IDEEPROM

In order to ensure that no user data or system configurations remain resident on QFX5230-64CD platform, the following steps must be performed:

1. Power must be removed from the system to clear all volatile storage.
2. Only the SATA SSD modules must be removed as they store user and configuration data.
3. Other SPI Flash / EEPROM components shown for reference only, they do not store any user or configuration data.

Note: *Before removal, ensure J-TAC and the appropriate account team has been notified of your intentions*

3.1 Removing SATA module

QFX5230-64CD has 2x 100GB SSD on CPU board. It contains the user & configuration data and can be removed as mentioned below.

- i. Turn off the unit and remove power cord from system power supplies.
- ii. Remove unit from rack and place it in ESD safe workspace.
- iii. Keep the system up-side down and locate SSD access plate.
- iv. Remove 3 screws (as shown below under red circle) that secures the SSD access plate.

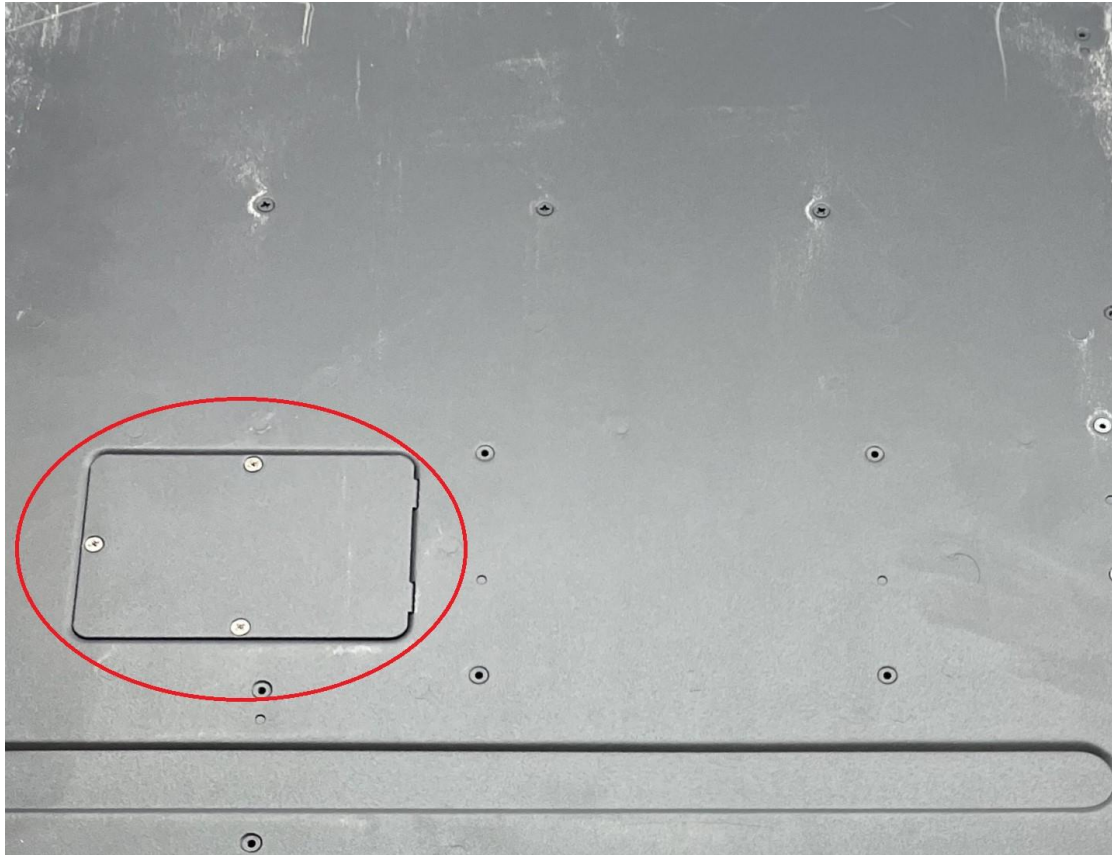


Figure 2 QFX5230-64CD SSD access slot

- v. Locate SSD and remove the screws that holds the SSD. SSD shown on these documents are illustrative purpose.



Figure 3 Locating and removing SSD

- vi. Remove the SSD from the slot as show below & secure the plastic screw for new SSD assembly.



Figure 4 Removing SSD from system

3.2 Assembling SSD

Follow the section 3.1 in reverse order to assemble the SSD on QFX5230-64CD chassis.

3.3 Identifying other non-volatile memories

QFX5230-64CD stores the evo software, user and configuration data on SATA SSD modules. Other non-volatile devices shown on the devices are for reference and it will not contain user datum.

Location of other non-volatile memories on QFX5230-64CD are shown here.

- i. Remove the system from rack and keep it on ESD table.
- ii. Remove the rack mount from the system.
- iii. Remove the top cover by removing screws that secure the top cover.



Figure 5 Removing top cover



Figure 6 Identification of different boards on **QFX5230-64CD**

Main Board:

Main board non-volatile devices are listed below.

- U4, U127, U181- CPLDs
- U95, U57 – FPGA
- U63 – Security ROM
- U64, U5, U137, U62, U89 - Serial flash devices
- U113 - IDEEPROM
- U6 - PMIC

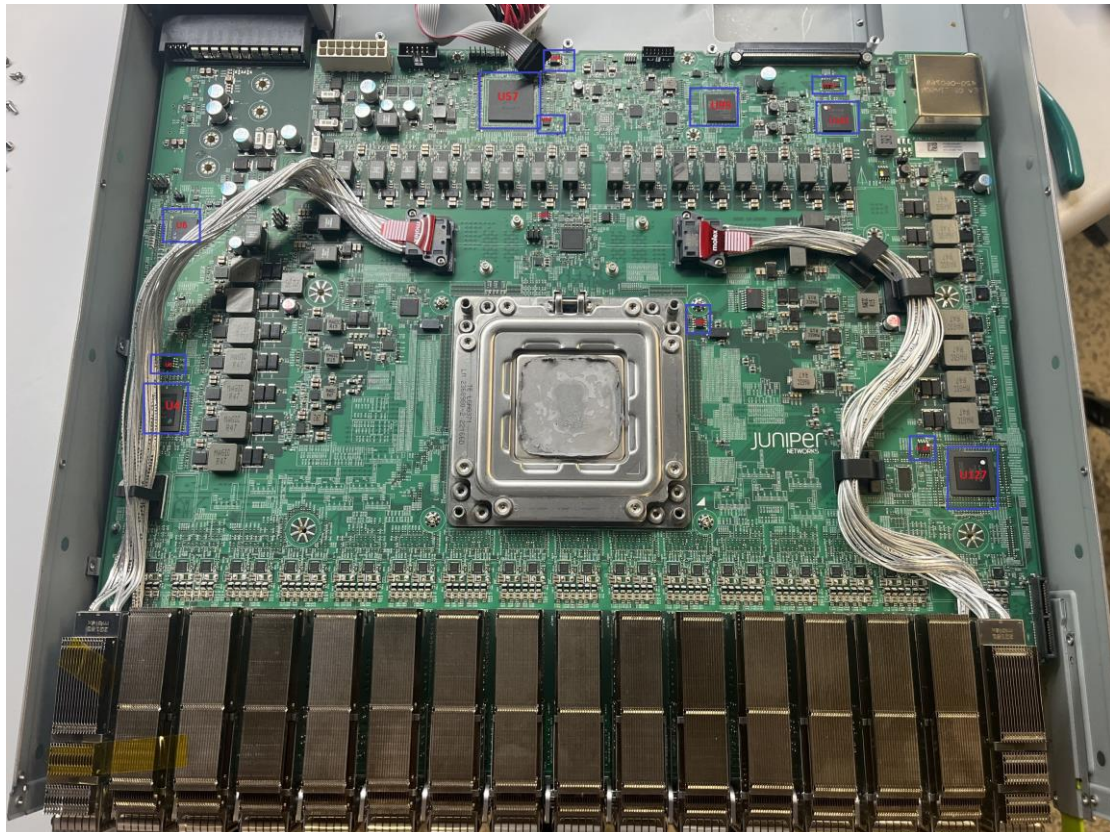


Figure 7 Non-volatile devices on main board

CPU Board:

CPU board non-volatile devices are listed below.

- CONN19, CONN20 - SSD devices
- U3, U22, U21, U50 - Serial Flash devices
- U12 - FPGA
- U4 – EEPROM
- U2 - Power Controller



Figure 8 Non-volatile devices on CPU board – Top side



Figure 9 Non-volatile devices on CPU board – Bottom side

Fan Board:

Figure 10 Non-volatile devices on fan board

Management Board:

Management board non-volatile memories are given below.

- U1 – SPI Flash

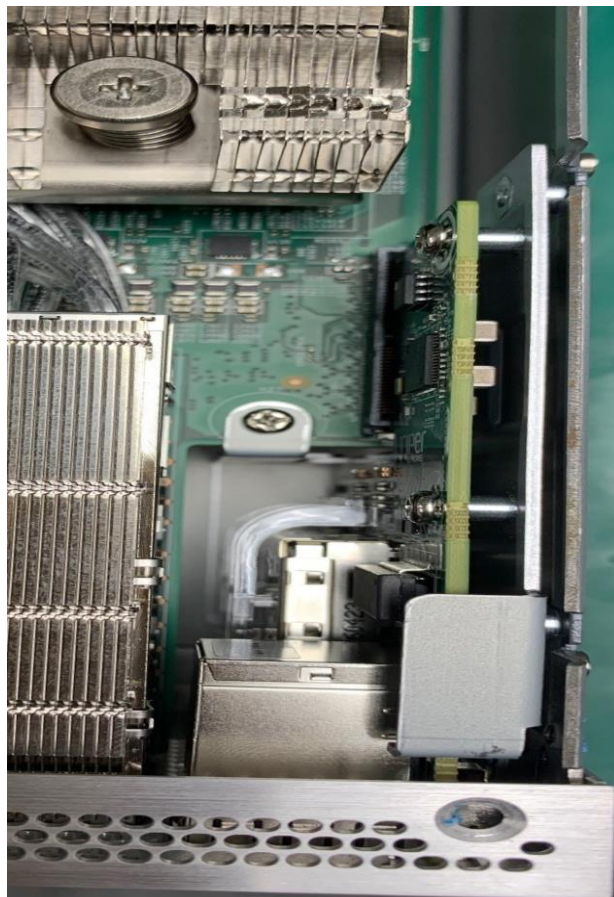


Figure 11 Non-volatile devices on management board

4 VOLATILE MEMORY

QFX5230-64CD is load with 16GB SODIMM DDR4 modules.

- 2x16GB DDR4 SODIMM



Figure 12 Volatile memory on CPU board – DDR4 SODIMM

5 SYSTEM DRIVE SANITIZATION PROCESS AND ASSOCIATED JUNOS COMMANDS

Use SW secure erase.

Here is required sequence of cli commands-

request system zeroize media – removes config and other sensitive user data.