

UNCLASSIFIED

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

**JUNIPER NETWORKS
M and T Series Routing Nodes
Utilizing the RE-A-2000 Route Engine**

**REVISION 1.0
May 1, 2009**

UNCLASSIFIED

TABLE OF CONTENTS

1 Introduction..... 1
 1.1 Purpose 1
 1.2 Scope 1
2 Equipment Overview 1
 2.1 Identification of the RE-A-2000 1
3 Power Down and Removal of Non-Volatile Storage 2
 3.1 System Power Down 2
 3.2 Removal of the RE from the Host Subsystem..... 3
 3.3 Identification of NV storage on the RE-A-2000 3
 3.4 Removal the Hard Drive and FLASH from the RE 4

TABLE OF FIGURES

Figure 2-1: RE-A-2000 Routing Engine 2
Figure 3-1: FLASH and Hard Drive on RE-A-2000 4
Figure 3-2: Plastic Keeper for FLASH..... 5
Figure 3-3: Plastic Cover Screws..... 6
Figure 3-4: Hard Drive Electrical Connectors..... 7

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 M and T series routing nodes that utilize the RE-A-2000 routing engine (RE).

1.2 Scope

This document applies to the M120, M320, T640 and T1600 platforms that utilize the RE-A-2000. While other platforms offered by Juniper Networks may contain similar hardware components, this document only applies to these devices. 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 these devices 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 the RE-A-2000

The M120, M320, T640 and T1600 routers can all utilize the RE-A-2000. All listed devices can support up to 2 routing engines in a redundant configuration. The routers listed have many components and parts. **However, only the routing engine itself contains non-volatile memory.** This being the case, this document will focus on the identification and removal of the routing engine and its non-volatile memory.

The RE-A-2000 is always found within the system control board and is easily identified by stamped on nomenclature. Please see figure 2.1 for identification purposes.



Figure 2-1: RE-A-2000 Routing Engine

3 POWER DOWN AND REMOVAL OF NON-VOLATILE STORAGE

In order to ensure that no data remains resident on the routing platform, the following steps must be performed:

1. Power must be removed from the system to clear all volatile storage
2. The FLASH disk and hard disk drive must be removed from any installed RE's to eliminate points of NV storage

A detailed process is included in the following sections.

3.1 System Power Down

The router should be powered down gracefully if time exists to do so. A graceful power down takes approximately five minutes to complete. To perform a graceful power down, complete the following steps:

1. From the router CLI, execute the “request system power-off” command.
2. Wait for positive feedback that the shutdown is complete. If connected via the router 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 router completes the power down process. You can verify via the console or observe the LED's on the Craft Interface and verify that neither RE is online or master.
3. For a system with AC power supplies, set the on/off switch on each PEM to the off position and remove the corresponding electrical cable. For a system with DC power supplies, flip the breaker to the open position. **DO NOT ATTEMPT TO REMOVE POWER CONNECTIONS FROM A DC PEM! SERIOUS INJURY OR DEATH MAY RESULT!**

An emergency power down can be performed by omitting steps 1 and 2, and simply performing step 3 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 RE from the Host Subsystem

Once the router has been powered down, the next step is to remove all RE's. If multiple RE's are installed, the process defined here and in subsequent sections should be performed for all routing engines. To remove the RE, complete the following steps:

1. Place an electrostatic bag or antistatic mat on a flat, stable surface.
2. 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.
3. Press the red tabs on the ejector handles on both sides of the Routing Engine faceplate.
4. Flip the ejector handles outward to unseat the Routing Engine.
5. Grasp the Routing Engine by the ejector handles and slide it about halfway out of the chassis.
6. Place one hand underneath the Routing Engine to support it and slide it completely out of the chassis.
7. Place the Routing Engine on the antistatic mat.

3.3 Identification of NV storage on the RE-A-2000

The RE-A-2000 contains both FLASH memory and a hard drive, both of which are non-volatile. Figure 3-1 identifies these components.

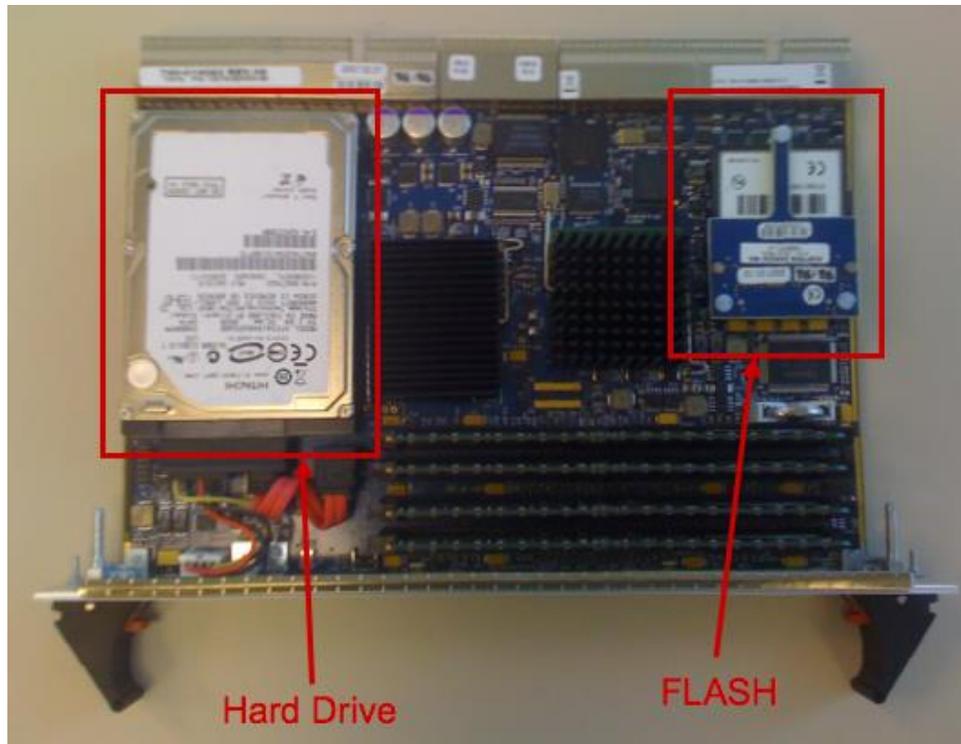


Figure 3-1: FLASH and Hard Drive on RE-A-2000

3.4 Removal the Hard Drive and FLASH from the RE

Once the non-volatile memory has been identified, remove the components by following these procedures:

1. Remove the plastic keeper holding the FLASH memory in place. See figure 3-2.

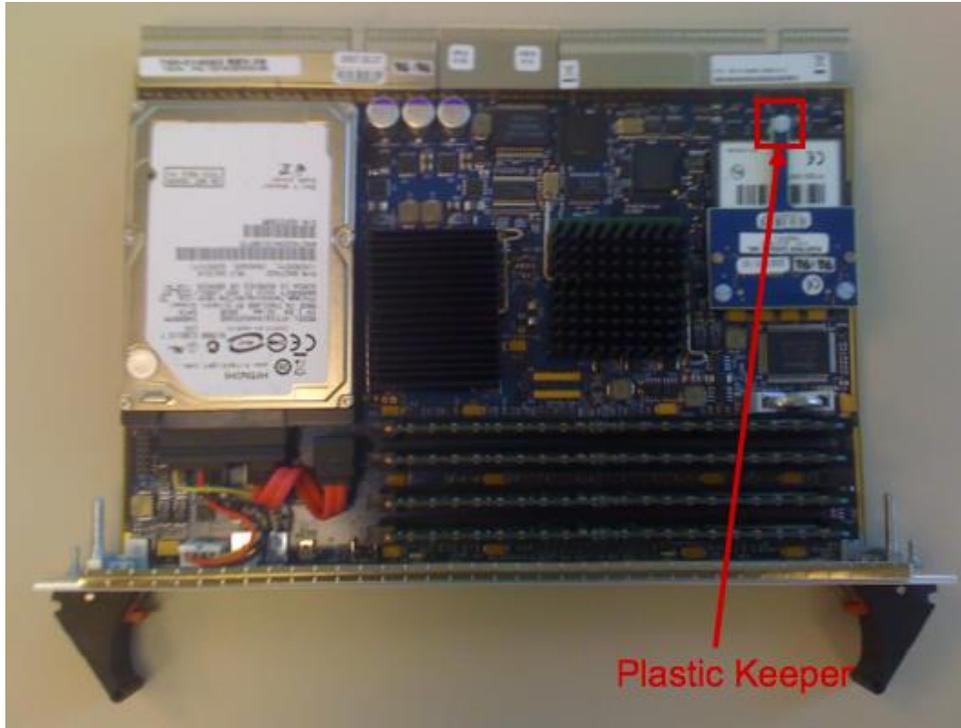


Figure 3-2: Plastic Keeper for FLASH

2. Remove the FLASH by gently pulling straight back.
3. Turn the RE-A-2000 over and remove the two screws holding the plastic cover over the hard drive retaining screws. See figure 3-3.

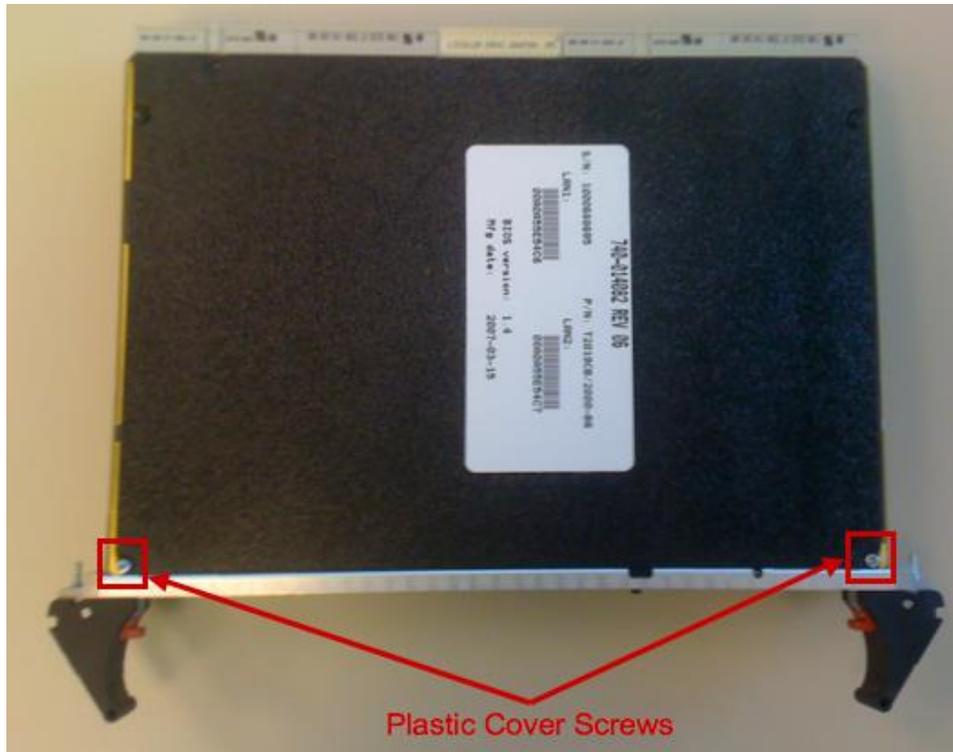


Figure 3-3: Plastic Cover Screws

4. Pull back the plastic cover and remove the hard drive retaining screws.
5. Turn the RE back over and disconnect the electrical connectors from the hard drive and remove. See figure 3-4.

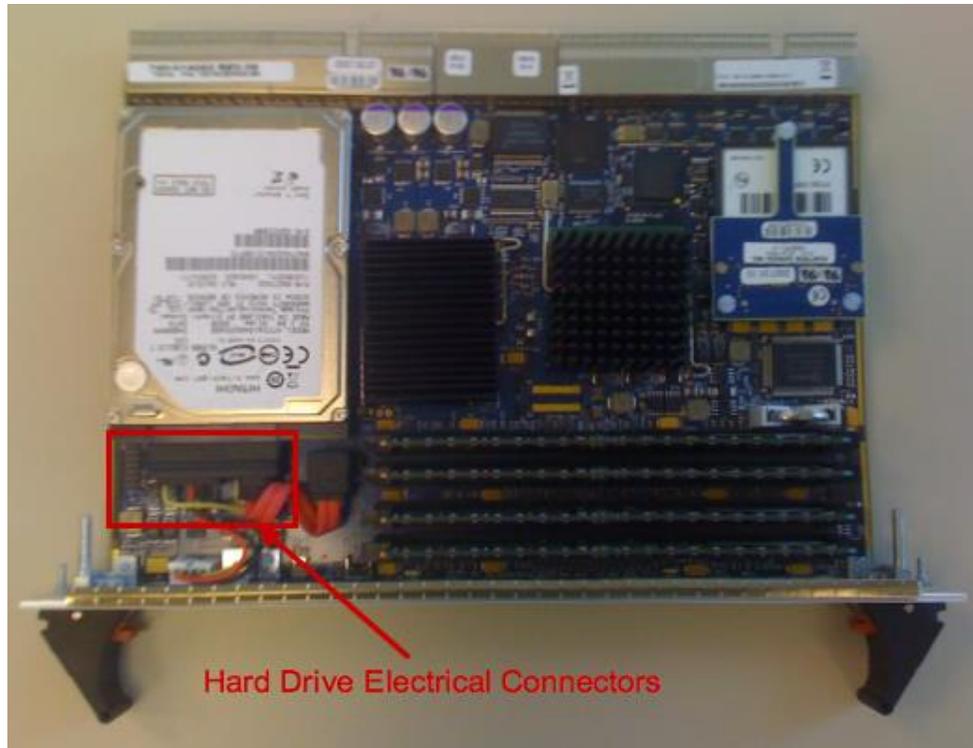


Figure 3-4: Hard Drive Electrical Connectors

6. Remove the hard drive from the RE.

This completes the sanitization process for the RE. Repeat the process defined in Section 3 for each RE installed in the chassis.

Please contact a Juniper Networks, Inc. representative with any questions regarding this procedure.