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Performing Factory Reset

This chapter describes Factory Reset feature and how it can be used to protect or restore a router to an earlier fully functional state.

Understanding How Factory Reset Works

The Factory Reset feature is used to remove all sensitive information from a router or restore the router to a fully functional state.

The factory reset process uses the **factory reset–all** command to take backup of existing configuration and then reset the router to an earlier fully functional state. In a high availability setup, the factory reset process is executed on the active Route Processor (RP) and is then synchronized to the standby RP. The duration of the factory reset process is dependent on the storage size of the router. It can extend between 30 minutes on an ASR1000 consolidated platform and up to 3 hours on a high availability setup.

Table 1 covers details of data erased or retained during the factory reset process:

Data Erased	Data Retained
Non-volatile random-access memory (NVRAM) data	Data from remote field-replaceable units (FRUs).
OBFL (Onboard Failure Logging) logs	Value of configuration register
Licenses	Contents of USB
User data, startup, and running configuration	Credentials (Secure Unique Device Identifier [SUDI] certificates, public key infrastructure (PKI) keys, and FIPS-related keys)

Data Erased	Data Retained
ROMMON variables	
All writable file systems and personal data. Note: The factory reset process takes a backup of the boot image if the system is booted from an image stored locally (bootflash or harddisk). If the current boot image is a remote image or stored on an USB, NIM-SSD or such, ensure that you take a backup of the image before starting the factory reset process	

After the factory reset process is complete, the router reboots to ROMMON mode. If you have the zero-touch provisioning (ZTP) capability setup, after the router completes the factory reset procedure, the router reboots with ZTP configuration.

Software and Hardware Support

- This feature is introduced starting from IOS XE Fuji 16.7.1 release.

- This feature is supported on all Cisco ASR 1000 platforms and Cisco ASR 1000 Series Route Processor 2 (RP2), and Cisco ASR 1000 Series Route Processor 3 (RP3)

- Factory reset process is supported on standalone routers and also on routers configured for high availability.

Prerequisites

- Ensure that all the software images, configurations and personal data is backed up before performing the factory reset operation.

- Ensure that there is uninterrupted power supply when the feature reset process is in progress.

- The factory reset process takes a backup of the boot image if the system is booted from an image stored locally (bootflash or harddisk). If the current boot image is a remote image or stored on an USB, NIM-SSD or such, ensure that you take a backup of the image before starting the factory reset process.

- Ensure that ISSU/ISSD (In- Service Software Upgrade or Downgrade) is not in progress before starting the factory reset process.

Restrictions

- Any software patches that are installed on the router will not be restored after the factory reset operation.

- If factory reset command is issued through a Virtual Teletype (VTY) session, the session is not restored after completion of factory reset process.

When to Use Factory Reset

- **Return Material Authorization (RMA):** If a router is returned back to Cisco for RMA, it is important that all sensitive information is removed.

- **Router is Compromised:** If the router data is compromised due to a malicious attack, the router must be reset to factory configuration and then reconfigured once again for further use.

- **Repurposing:** The router needs to be moved to a new topology or market from the existing site to a different site.

What Happens after Factory Reset

After factory reset is successfully completed, the router boots up. Before factory reset process is started, if the configuration register on the router is set to manually boot from ROMMON, then after factory reset the router will stop at ROMMON.

The factory reset process takes a backup of the boot image if the system is booted from an image stored locally (bootflash or harddisk). If the current boot image is a remote image or stored on an USB, NIM-SSD or such, ensure that you take a backup of the image before starting the factory reset process.