

PC Card Kit Installation Instructions

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This document explains how to use the PC Card kit to install a PC Card on a Juniper Networks routing platform.

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PC Card Upgrade Kit Description

This PC Card kit contains a compact flash disk and a PC Card adapter you can install in a Routing Engine. The compact flash disk functions as a PC Card when it is installed in the adapter.

Routing Engine Description

The Routing Engine is an Intel-based PCI platform that runs JUNOS software. Software processes that run on the Routing Engine maintain the routing tables, manage the routing protocols used on the router, control the router's interfaces, control some chassis components, and provide the interface for system management and user access to the router.

Boot Devices

The router can boot from the removable medium (PC Card or USB storage device), internal compact flash disk, or hard disk. The disk from which the router boots is called the *primary boot device*, and the other disk is the *alternate boot device*.



NOTE: If the router boots from an alternate boot device, a yellow alarm lights the LED on the router's craft interface.

Boot Sequence

The router attempts to boot from three devices in this order:

- Removable medium, if one is installed (PC Card or USB storage device)
- Internal compact flash disk
- Hard disk



NOTE: To reinstall the JUNOS software, you boot the router from the removable media. Do not insert the removable media during normal operations. The router does not operate normally when it is booted from the removable media.

When the router boots from the storage media (removable media, internal compact flash disk, or hard disk) it expands its search in the `/config` directory of the routing platform for the following files in the following order: `juniper.conf` (the main configuration file), `rescue.conf` (the rescue configuration file), and `juniper.conf.1` (the first rollback configuration file). When the search finds the first configuration file that can be loaded properly, the file loads and the search ends. If none of the files can be loaded properly, the routing platform does not function properly. If the router boots from an alternate boot device, the JUNOS software displays a message indicating this when you log in to the router.

Installing a PC Card and Configuring It for JUNOS Software Installation

The slot labeled **PC CARD** on the Routing Engine faceplate accepts a Type I PC Card, as defined in the *PC Card Standard* published by the Personal Computer Memory Card International Association (PCMCIA). The removable PC Card can be used to copy JUNOS software from the PC Card onto the Routing Engine. You can also copy JUNOS software from the Routing Engine onto a PC Card, for example, to create a backup copy of upgrade software that you have obtained from Juniper Networks.

Installing the PC Card

To install the removable PC Card, follow this procedure:

1. Slide the compact flash disk into the PC Card adapter, if it is not already in the adapter.
2. Orient the PC Card with the Juniper Networks logo facing in the direction specified on the Routing Engine faceplate. Insert the card into the slot labeled **PC CARD** in the Routing Engine faceplate.
3. Press the card firmly all the way into the slot.

Configuring the PC Card

To configure the removable PC Card, follow this procedure:



NOTE: You must have UNIX superuser privileges to issue the `dd` command.

1. Log into the Juniper Networks Support Web site, <http://www.juniper.net/support/>.

To download the software packages, you must have a service contract and an access account. If you do not have an access account, complete the registration form at the Juniper Networks Web site, <https://www.juniper.net/registration/Register.jsp>.

2. Navigate to the download page for JUNOS Internet software. Choose either **Canada and U.S. Version** or **Worldwide Version**.
3. Download the **Install Media** package for the software release you are installing.



NOTE: The **Install Media** package, when installed on a PC Card, can be used only to install software onto the internal compact flash disk or the hard disk. The **Install Media** package does not act as a boot image.

4. Copy the software package to the router. We recommend that you copy them to the `/var/tmp` directory, which is on the hard disk and is a large file system.

```
user@host> file copy
ftp://username:prompt@ftp.hostname.net/filename /var/tmp/filename
```

5. Log into the UNIX shell on your router, and change to the `/var/tmp` directory.
6. Copy the software package to the PC Card using the following commands:

```
dd if=filename of=/dev/rad3 bs=64k
```



NOTE: Copying the software package can take several minutes.

The removable PC Card is now configured to install JUNOS software on a Juniper Networks router. For more information about software installation and upgrade, see the *JUNOS Software Installation and Upgrade Guide*.



NOTE: The software on a PC Card is loaded only onto the Routing Engine into which the PC Card is inserted. It is not automatically copied to the other Routing Engine.

List of Technical Publications

Table 1 on page 4 lists the software and hardware guides and release notes for Juniper Networks J-series, M-series, MX-series, and T-series routing platforms and describes the contents of each document. Table 2 on page 7 lists the books included in the *Network Operations Guide* series.

Table 1: Technical Documentation for Supported Routing Platforms

Book	Description
JUNOS Internet Software for Supported Routing Platforms	
<i>Class of Service</i>	Provides an overview of the class-of-service (CoS) functions of the JUNOS software and describes how to configure CoS features, including configuring multiple forwarding classes for transmitting packets, defining which packets are placed into each output queue, scheduling the transmission service level for each queue, and managing congestion through the random early detection (RED) algorithm.
<i>CLI User Guide</i>	Describes how to use the JUNOS command-line interface (CLI) to configure, monitor, and manage Juniper Networks routing platforms. This material was formerly covered in the <i>JUNOS System Basics Configuration Guide</i> .
<i>Feature Guide</i>	Provides a detailed explanation and configuration examples for several of the most complex features in the JUNOS software.
<i>High Availability Guide</i>	Provides an overview of hardware and software resources that ensure a high level of continuous routing platform operation and describes how to configure high availability (HA) features such as nonstop routing (NSR) and graceful Routing Engine switchover (GRES).

Table 1: Technical Documentation for Supported Routing Platforms (*continued*)

Book	Description
<i>MPLS Applications</i>	Provides an overview of traffic engineering concepts and describes how to configure traffic engineering protocols.
<i>Multicast Protocols</i>	Provides an overview of multicast concepts and describes how to configure multicast routing protocols.
<i>Network Interfaces</i>	Provides an overview of the network interface functions of the JUNOS software and describes how to configure the network interfaces on the routing platform.
<i>Network Management</i>	Provides an overview of network management concepts and describes how to configure various network management features, such as SNMP and accounting options.
<i>Policy Framework</i>	Provides an overview of policy concepts and describes how to configure routing policy, firewall filters, and forwarding options.
<i>Routing Protocols</i>	Provides an overview of routing concepts and describes how to configure routing, routing instances, and unicast routing protocols.
<i>Secure Configuration Guide for Common Criteria and JUNOS-FIPS</i>	Provides an overview of secure Common Criteria and JUNOS-FIPS protocols for the JUNOS Internet software and describes how to install and configure secure Common Criteria and JUNOS-FIPS on a routing platform.
<i>Services Interfaces</i>	Provides an overview of the services interfaces functions of the JUNOS software and describes how to configure the services interfaces on the router.
<i>Software Installation and Upgrade Guide</i>	Describes the JUNOS software components and packaging and explains how to initially configure, reinstall, and upgrade the JUNOS system software. This material was formerly covered in the <i>JUNOS System Basics Configuration Guide</i> .
<i>System Basics</i>	Describes Juniper Networks routing platforms and explains how to configure basic system parameters, supported protocols and software processes, authentication, and a variety of utilities for managing your router on the network.
<i>VPNs</i>	Provides an overview and describes how to configure Layer 2 and Layer 3 virtual private networks (VPNs), virtual private LAN service (VPLS), and Layer 2 circuits. Provides configuration examples.
JUNOS References	
<i>Hierarchy and RFC Reference</i>	Describes the JUNOS configuration mode commands. Provides a hierarchy reference that displays each level of a configuration hierarchy, and includes all possible configuration statements that can be used at that level. This material was formerly covered in the <i>JUNOS System Basics Configuration Guide</i> .
<i>Interfaces Command Reference</i>	Describes the JUNOS software operational mode commands you use to monitor and troubleshoot interfaces.

Table 1: Technical Documentation for Supported Routing Platforms (*continued*)

Book	Description
<i>Routing Protocols and Policies Command Reference</i>	Describes the JUNOS software operational mode commands you use to monitor and troubleshoot routing policies and protocols, including firewall filters.
<i>System Basics and Services Command Reference</i>	Describes the JUNOS software operational mode commands you use to monitor and troubleshoot system basics, including commands for real-time monitoring and route (or path) tracing, system software management, and chassis management. Also describes commands for monitoring and troubleshooting services such as class of service (CoS), IP Security (IPSec), stateful firewalls, flow collection, and flow monitoring.
<i>System Log Messages Reference</i>	Describes how to access and interpret system log messages generated by JUNOS software modules and provides a reference page for each message.
J-Web User Guide	
<i>J-Web Interface User Guide</i>	Describes how to use the J-Web graphical user interface (GUI) to configure, monitor, and manage Juniper Networks routing platforms.
JUNOS API and Scripting Documentation	
<i>JUNOScript API Guide</i>	Describes how to use the JUNOScript application programming interface (API) to monitor and configure Juniper Networks routing platforms.
<i>JUNOS XML API Configuration Reference</i>	Provides reference pages for the configuration tag elements in the JUNOS XML API.
<i>JUNOS XML API Operational Reference</i>	Provides reference pages for the operational tag elements in the JUNOS XML API.
<i>NETCONF API Guide</i>	Describes how to use the NETCONF API to monitor and configure Juniper Networks routing platforms.
<i>JUNOS Configuration and Diagnostic Automation Guide</i>	Describes how to use the commit script and self-diagnosis features of the JUNOS software. This guide explains how to enforce custom configuration rules defined in scripts, how to use commit script macros to provide simplified aliases for frequently used configuration statements, and how to configure diagnostic event policies.
Hardware Documentation	
<i>Hardware Guide</i>	Describes how to install, maintain, and troubleshoot routing platforms and components. Each platform has its own hardware guide.
<i>PIC Guide</i>	Describes the routing platform's Physical Interface Cards (PICs). Each platform has its own PIC guide.
<i>DPC Guide</i>	Describes the Dense Port Concentrators (DPCs) for all MX-series routers.
JUNOScope Documentation	

Table 1: Technical Documentation for Supported Routing Platforms (*continued*)

Book	Description
<i>JUNOScope Software User Guide</i>	Describes the JUNOScope software graphical user interface (GUI), how to install and administer the software, and how to use the software to manage routing platform configuration files and monitor routing platform operations.
J-series Routing Platform Documentation	
<i>Getting Started Guide</i>	Provides an overview, basic instructions, and specifications for J-series routing platforms. The guide explains how to prepare your site for installation, unpack and install the router and its components, install licenses, and establish basic connectivity. Use the Getting Started Guide for your router model.
<i>Basic LAN and WAN Access Configuration Guide</i>	Explains how to configure the interfaces on J-series Services Routers for basic IP routing with standard routing protocols, ISDN backup, and digital subscriber line (DSL) connections.
<i>Advanced WAN Access Configuration Guide</i>	Explains how to configure J-series Services Routers in virtual private networks (VPNs) and multicast networks, configure data link switching (DLSw) services, and apply routing techniques such as policies, stateless and stateful firewall filters, IP Security (IPSec) tunnels, and class-of-service (CoS) classification for safer, more efficient routing.
<i>Administration Guide</i>	Shows how to manage users and operations, monitor network performance, upgrade software, and diagnose common problems on J-series Services Routers.
Release Notes	
<i>JUNOS Release Notes</i>	Summarize new features and known problems for a particular software release, provide corrections and updates to published JUNOS, JUNOScript, and NETCONF manuals, provide information that might have been omitted from the manuals, and describe upgrade and downgrade procedures.
<i>Hardware Release Notes</i>	Describe the available documentation for the routing platform and summarize known problems with the hardware and accompanying software. Each platform has its own release notes.
<i>JUNOScope Release Notes</i>	Contain corrections and updates to the published JUNOScope manual, provide information that might have been omitted from the manual, and describe upgrade and downgrade procedures.
<i>J-series Services Router Release Notes</i>	Briefly describe Services Router features, identify known hardware problems, and provide upgrade and downgrade instructions

Table 2: JUNOS Internet Software Network Operations Guides

Book	Description
<i>Baseline</i>	Describes the most basic tasks for running a network using Juniper Networks products. Tasks include upgrading and reinstalling JUNOS software, gathering basic system management information, verifying your network topology, and searching log messages.

Table 2: JUNOS Internet Software Network Operations Guides *(continued)*

Book	Description
<i>Interfaces</i>	Describes tasks for monitoring interfaces. Tasks include using loopback testing and locating alarms.
<i>MPLS</i>	Describes tasks for configuring, monitoring, and troubleshooting an example MPLS network. Tasks include verifying the correct configuration of the MPLS and RSVP protocols, displaying the status and statistics of MPLS running on all routing platforms in the network, and using the layered MPLS troubleshooting model to investigate problems with an MPLS network.
<i>MPLS Log Reference</i>	Describes MPLS status and error messages that appear in the output of the <code>show mpls lsp extensive</code> command. The guide also describes how and when to configure Constrained Shortest Path First (CSPF) and RSVP trace options, and how to examine a CSPF or RSVP failure in a sample network.
<i>Hardware</i>	Describes tasks for monitoring M-series and T-series routing platforms.

Requesting Support

For technical support, open a support case with the Case Manager link at <http://www.juniper.net/support/> or call 1-888-314-JTAC (from the United States, Canada, or Mexico) or 1-408-745-9500 (from elsewhere).

Revision History

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