

Chapter 8

Reinstall JUNOS Software

If the JUNOS software becomes damaged, you must reinstall it. (See Table 22.)

Table 22: Checklist for Reinstalling JUNOS Software

JUNOS Software Reinstallation Tasks	Command or Action
Before You Reinstall JUNOS Software on page 75	
1. Log the Software Version Information on page 76	show version save <i>filename</i>
2. Log the Hardware Version Information on page 77	show chassis hardware save <i>filename</i>
3. Log the Chassis Environment Information on page 78	show chassis environment save <i>filename</i>
4. Log the System Boot-Message Information on page 78	show system boot-messages save <i>filename</i>
5. Log the Active Configuration on page 80	show configuration save <i>filename</i>
6. Log the Interfaces on the Router on page 80	show interface terse save <i>filename</i>
7. Log the BGP, IS-IS, and OSPF Adjacency Information on page 81	show bgp summary save <i>filename</i> show isis adjacency brief save <i>filename</i> show ospf neighbor brief save <i>filename</i>
8. Log the System Storage Information on page 82	show system storage save <i>filename</i>
9. Back Up the Currently Running and Active File System on page 82	request system snapshot
10. Have the Boot Floppy or PCMCIA Card Ready on page 83	http://www.juniper.net/support
Reinstall the JUNOS Software on page 83	Insert the floppy and reboot the system.
Reconfigure the JUNOS Software on page 83	
1. Configure Names and Addresses on page 84	Log in as root. Start the CLI. Enter configuration mode: configure set system host-name <i>host-name</i> set system domain-name <i>domain-name</i> set interfaces fxp0 unit 0 family inet address <i>address/prefix-length</i> set system backup-router <i>address</i> set system name-server <i>address</i>
2. Set the Root Password on page 85	set system root-authentication plain-text-password set system root-authentication encrypted-password <i>password</i> set system root-authentication ssh-rsa key commit exit
3. Check Network Connectivity on page 85	ping <i>address</i>

JUNOS Software Reinstallation Tasks	Command or Action
4. Copy Backup Configurations to the Router on page 86	file copy var/tmp configure [edit] load merge /config/ <i>filename</i> or load replace /config/ <i>filename</i> [edit] commit
After You Reinstall JUNOS Software on page 87	
1. Compare Information Logged Before and After the Reinstall on page 87	show version save <i>filename</i> show chassis hardware save <i>filename</i> show chassis environment save <i>filename</i> show system boot-messages save <i>filename</i> show configuration save <i>filename</i> show interfaces terse save <i>filename</i> show bgp summary show isis adjacency brief show ospf neighbor brief save <i>filename</i> show system storage save <i>filename</i>
2. Back Up the New Software on page 87	request system snapshot

Before You Reinstall JUNOS Software

Purpose Before you reinstall the JUNOS software, it is important to log information about the existing system so that after the reinstall you can verify that all software components are installed and working as expected. Also, while logging information, you might find an existing problem that you did not know about and might have thought was caused by the reinstall.

Steps To Take To log important information about your system, follow these steps:

1. Log the Software Version Information on page 76
2. Log the Hardware Version Information on page 77
3. Log the Chassis Environment Information on page 78
4. Log the System Boot-Message Information on page 78
5. Log the Active Configuration on page 80
6. Log the Interfaces on the Router on page 80
7. Log the BGP, IS-IS, and OSPF Adjacency Information on page 81
8. Log the System Storage Information on page 82
9. Back Up the Currently Running and Active File System on page 82
10. Have the Boot Floppy or PCMCIA Card Ready on page 83

In all of the logging steps, you can use your terminal program to save the output from the commands, or use the **save** command to redirect the output to an external file.

To save the output to a file on another machine, use the following JUNOS command-line interface (CLI) operational mode command:

```
user@host> command | save filename
```

By default, the file is placed in your home directory on the router. To redirect the output to a file on another machine, change the filename to include the path to that machine and file. For information about how you can specify the filename, see the *JUNOS System Basics and Services Command Reference*.

The following example stores the output of the **show version** command in a file:

```
user@host> show version | save filename
Wrote 1143 lines of output to 'filename'
```

Step 1: Log the Software Version Information

Action To log the JUNOS software version information, use the following JUNOS CLI operational mode command:

```
user@host> show version | save filename
```

Sample Output user@host> show version | save test
Wrote 39 lines of output to 'test'

```
user@host> show version
Hostname: my-router.net
Model: m10
JUNOS Base OS boot [5.0R5]
JUNOS Base OS Software Suite [5.0R5]
JUNOS Kernel Software Suite [5.0R5]
JUNOS Routing Software Suite [5.0R5]
JUNOS Packet Forwarding Engine Support [5.0R5]
JUNOS Crypto Software Suite [5.0R5]
JUNOS Online Documentation [5.0R5]
KERNEL 5.0R5 #0 built by builder on 2002-03-02 05:10:28 UTC
MGD release 5.0R5 built by builder on 2002-03-02 04:45:32 UTC
CLI release 5.0R5 built by builder on 2002-03-02 04:44:22 UTC
CHASSISD release 5.0R5 built by builder on 2002-03-02 04:43:37 UTC
DCD release 5.0R5 built by builder on 2002-03-02 04:42:47 UTC
RPD release 5.0R5 built by builder on 2002-03-02 04:46:17 UTC
SNMPD release 5.0R5 built by builder on 2002-03-02 04:52:26 UTC
MIB2D release 5.0R5 built by builder on 2002-03-02 04:45:37 UTC
APSD release 5.0R5 built by builder on 2002-03-02 04:43:31 UTC
VRRPD release 5.0R5 built by builder on 2002-03-02 04:52:34 UTC
ALARMD release 5.0R5 built by builder on 2002-03-02 04:43:24 UTC
PFED release 5.0R5 built by builder on 2002-03-02 04:46:06 UTC
CRAFTD release 5.0R5 built by builder on 2002-03-02 04:44:30 UTC
SAMPLED release 5.0R5 built by builder on 2002-03-02 04:52:20 UTC
ILMID release 5.0R5 built by builder on 2002-03-02 04:45:21 UTC
BPRELAYD release 5.0R5 built by builder on 2002-03-02 04:42:41 UTC
RMOPD release 5.0R5 built by builder on 2002-03-02 04:46:11 UTC
jkernel-dd release 5.0R5 built by builder on 2002-03-02 04:41:07 UTC
jroute-dd release 5.0R5 built by builder on 2002-03-02 04:41:21 UTC
jdocs-dd release 5.0R5 built by builder on 2002-03-02 04:39:11 UTC
```

What It Means The sample output shows the hostname, router model, and the different JUNOS software packages, processes, and documents.

Step 2: Log the Hardware Version Information

Purpose You should log hardware version information in the rare event that a router cannot successfully reboot and you cannot obtain the Routing Engine serial number. The Routing Engine serial number is necessary for Juniper Networks Technical Assistance Center (JTAC) to issue a return to manufacturing authorization (RMA). Without the Routing Engine serial number, an onsite technician must be dispatched to issue the RMA.

Action To log the router chassis hardware version information, use the following JUNOS CLI operational mode command:

```
user@host> show chassis hardware | save filename
```

Sample Output The output for the M-series routers varies depending on the chassis components of each router. All routers have a chassis, midplanes or backplanes, power supplies, and Flexible PIC Concentrators (FPCs). Refer to the hardware guides for information about the different chassis components.

```
user@host> show chassis hardware | save test
Wrote 43 lines of output to 'test'
```

```
user@host> show chassis hardware
```

Item	Version	Part number	Serial number	Description
Chassis			101	M160
Midplane	REV 02	710-001245	S/N AB4107	
FPM CMB	REV 01	710-001642	S/N AA2911	
FPM Display	REV 01	710-001647	S/N AA2999	
CIP	REV 02	710-001593	S/N AA9563	
PEM 0	Rev 01	740-001243	S/N KJ35769	DC
PEM 1	Rev 01	740-001243	S/N KJ35765	DC
PCG 0	REV 01	710-001568	S/N AA9794	
PCG 1	REV 01	710-001568	S/N AA9804	
Host 1			da000004f8d57001	teknor
MCS 1	REV 03	710-001226	S/N AA9777	
SFM 0 SPP	REV 04	710-001228	S/N AA2975	
SFM 0 SPR	REV 02	710-001224	S/N AA9838	Internet Processor I
SFM 1 SPP	REV 04	710-001228	S/N AA2860	
SFM 1 SPR	REV 01	710-001224	S/N AB0139	Internet Processor I
FPC 0	REV 03	710-001255	S/N AA9806	FPC Type 1
CPU	REV 02	710-001217	S/N AA9590	
PIC 1	REV 05	750-000616	S/N AA1527	1x OC-12 ATM, MM
PIC 2	REV 05	750-000616	S/N AA1535	1x OC-12 ATM, MM
PIC 3	REV 01	750-000616	S/N AA1519	1x OC-12 ATM, MM
FPC 1	REV 02	710-001611	S/N AA9523	FPC Type 2
CPU	REV 02	710-001217	S/N AA9571	
PIC 0	REV 03	750-001900	S/N AA9626	1x STM-16 SDH, SMIR
PIC 1	REV 01	710-002381	S/N AD3633	2x G/E, 1000 BASE-SX
FPC 2				FPC Type OC192
CPU	REV 03	710-001217	S/N AB3329	
PIC 0	REV 01			1x OC-192 SM SR-2

What It Means The sample output shows the hardware inventory for an M160 router with a chassis serial number of 101. For each component, the output shows the version number, part number, serial number, and description.

Step 3: Log the Chassis Environment Information

Action To log the router chassis environment information, use the following JUNOS CLI operational mode command:

```
user@host> show chassis environment | save filename
```

Sample Output The following example shows output from the show chassis environment command for an M5 router:

```
user@m5-host> show chassis environment | save test
Wrote 14 lines of output to 'test'

user@m5-host> show chassis environment
Class Item                Status    Measurement
-----
Power Power Supply A      OK
       Power Supply B      OK
Temp  FPC Slot 0             OK        32 degrees C / 89 degrees F
       FEB                 OK        31 degrees C / 87 degrees F
       PS Intake           OK        26 degrees C / 78 degrees F
       PS Exhaust          OK        31 degrees C / 87 degrees F
Fans  Left Fan 1           OK        Spinning at normal speed
       Left Fan 2          OK        Spinning at normal speed
       Left Fan 3          OK        Spinning at normal speed
       Left Fan 4          OK        Spinning at normal speed
```

What It Means The sample output shows the environmental information about the router chassis, including the temperature and information about the fans, power supplies, and Routing Engine.

Step 4: Log the System Boot-Message Information

Action To log the system boot-message information, use the following JUNOS CLI operational mode command:

```
user@host> show system boot-messages | save filename
```

Sample Output

```
user@host> show system boot-messages | save test
Wrote 80 lines of output to 'test'

user@host> show system boot-messages
Copyright (c) 1992-1998 FreeBSD Inc.
Copyright (c) 1996-2000 Juniper Networks, Inc.
All rights reserved.
Copyright (c) 1982, 1986, 1989, 1991, 1993
    The Regents of the University of California. All rights reserved.

JUNOS 4.1-20000216-Zf8469 #0: 2000-02-16 12:57:28 UTC
    tlim@single.juniper.net:/p/build/20000216-0905/4.1/release_kernel/sys/compile/GENERIC
CPU: Pentium Pro (332.55-MHz 686-class CPU)
    Origin = "GenuineIntel" Id = 0x66a Stepping=10
    Features=0x183f9ff<FPU,VME,DE,PSE,TSC,MSR,PAE,MCE,CX8,SEP,MTRR,PGE,MCA,CMOV,<b16>,<b17>,MMX,<b24>>
Teknor CPU Card Recognized
```

```

real memory = 805306368 (786432K bytes)
avail memory = 786280448 (767852K bytes)
Probing for devices on PCI bus 0:
chip0 <generic PCI bridge (vendor=8086 device=7192 subclass=0)> rev 3 class 60000 on pci0:0:0
chip1 <Intel 82371AB PCI-ISA bridge> rev 1 class 60100 on pci0:7:0
chip2 <Intel 82371AB IDE interface> rev 1 class 10180 on pci0:7:1
chip3 <Intel 82371AB USB interface> rev 1 class c0300 int d irq 11 on pci0:7:2
smb0 <Intel 82371AB SMB controller> rev 1 class 68000 on pci0:7:3
pcic0 <TI PCI-1131 PCI-CardBus Bridge> rev 1 class 60700 int a irq 15 on pci0:13:0
TI1131 PCI Config Reg: [pci only][FUNC0 pci int]
pcic1 <TI PCI-1131 PCI-CardBus Bridge> rev 1 class 60700 int b irq 12 on pci0:13:1
TI1131 PCI Config Reg: [pci only][FUNC1 pci int]
fxp0 <Intel EtherExpress Pro 10/100B Ethernet> rev 8 class 20000 int a irq 12 on pci0:16:0
chip4 <generic PCI bridge (vendor=1011 device=0022 subclass=4)> rev 4 class 60400 on pci0:17:0
fxp1 <Intel EtherExpress Pro 10/100B Ethernet> rev 8 class 20000 int a irq 10 on pci0:19:0
Probing for devices on PCI bus 1:mcs0 <Miscellaneous Control Subsystem> rev 12 class ff0000 int a irq
12 on pci1:13:0
fxp2 <Intel EtherExpress Pro 10/100B Ethernet> rev 8 class 20000 int a irq 10 on pci1:14:0
Probing for devices on the ISA bus:
sc0 at 0x60-0x6f irq 1 on motherboard
sc0: EGA color <16 virtual consoles, flags=0x0>
ed0 not found at 0x300
ed1 not found at 0x280
ed2 not found at 0x340
psm0 not found at 0x60
sio0 at 0x3f8-0x3ff irq 4 flags 0x20010 on isa
sio0: type 16550A, console
sio1 at 0x3e8-0x3ef irq 5 flags 0x20000 on isa
sio1: type 16550A
sio2 at 0x2f8-0x2ff irq 3 flags 0x20000 on isa
sio2: type 16550A
pcic0 at 0x3e0-0x3e1 on isa
PC-Card ctlr(0) TI PCI-1131 [CardBus bridge mode] (5 mem & 2 I/O windows)
pcic0: slot 0 controller I/O address 0x3e0
npx0 flags 0x1 on motherboard
npx0: INT 16 interface
fdc0: direction bit not set
fdc0: cmd 3 failed at out byte 1 of 3
fdc0 not found at 0x3f0
wdc0 at 0x1f0-0x1f7 irq 14 on isa
wdc0: unit 0 (wd0): <SunDisk SDCFB-80>, single-sector-i/o
wd0: 76MB (156672 sectors), 612 cyls, 8 heads, 32 S/T, 512 B/S
wdc0: unit 1 (wd1): <IBM-DCXA-210000>
wd1: 8063MB (16514064 sectors), 16383 cyls, 16 heads, 63 S/T, 512 B/S
wdc1 not found at 0x170
wdc2 not found at 0x180
ep0 not found at 0x300
fxp0: Ethernet address 00:a0:a5:12:05:5a
fxp1: Ethernet address 00:a0:a5:12:05:59
fxp2: Ethernet address 02:00:00:00:00:01
swapon: adding /dev/wd1s1b as swap device
Automatic reboot in progress...
/dev/rwd0s1a: clean, 16599 free (95 frags, 2063 blocks, 0.1% fragmentation)
/dev/rwd0s1e: clean, 9233 free (9 frags, 1153 blocks, 0.1% fragmentation)
/dev/rwd0s1a: clean, 16599 free (95 frags, 2063 blocks, 0.1% fragmentation)
/dev/rwd1s1f: clean, 4301055 free (335 frags, 537590 blocks, 0.0% fragmentation)

```

What It Means The sample output shows the initial messages generated by the system kernel upon boot. This is the content of the `/var/run/dmesg.boot` file.

Step 5: Log the Active Configuration

Action To log the active configuration on the router, use the following JUNOS CLI operational mode command:

```
user@host> show configuration | save filename
```

Sample Output user@host> show configuration | save test
Wrote 4076 lines of output to 'test'

```
user@host> show configuration
system {
  host-name lab8;
  domain-name juniper.net;
  backup-router 10.1.1.254;
  time-zone America/Los_Angeles;
  default-address-selection;
  dump-on-panic;
  name-server {
    [...Output truncated...]
```

What It Means The sample output shows the configuration currently running on the router, which is the last committed configuration.

Step 6: Log the Interfaces on the Router

Action To log the interfaces on the router, use the following JUNOS CLI operational mode command:

```
user@host> show interface terse | save filename
```

Sample Output user@host> show interfaces terse | save test
Wrote 81 lines of output to 'test'

```
user@host> show interfaces terse
Interface      Admin Link Proto Local Remote
at-1/3/0       up    up
at-1/3/0.0     up    up    inet  1.0.0.1    --> 1.0.0.2
               iso
fxp0           up    up
fxp0.0         up    up    inet  10.168.5.59/24
gre            down  up
ipip           down  up
lo0            up    up
lo0.0          up    up    inet  127.0.0.1    --> 0/0
               iso
47.0005.80ff.f800.0000.0108.0001.1921.6800.5059.00
so-1/2/0       up    down
so-1/2/1       down  down
so-1/2/2       down  down
so-1/2/3       down  down
so-2/0/0       up    up
so-2/0/0.0     up    up    inet  1.2.3.4      --> 1.2.3.5
               iso
[...Output truncated...]
```

What It Means The sample output displays summary information about the physical and logical interfaces on the router.

Step 7: Log the BGP, IS-IS, and OSPF Adjacency Information

Purpose The following commands log useful information about Border Gateway Protocol (BGP), Intermediate System-to-Intermediate System (IS-IS), and Open Shortest Path First (OSPF) protocols. If you have other protocols installed, such as Multiprotocol Label Switching (MPLS), Resource Reservation Protocol (RSVP), or Protocol Independent Multicast (PIM), you also might log summary information for them.

Action To log the protocol peer information, use the following JUNOS CLI operational mode commands:

```
user@host> show bgp summary | save filename
user@host> show isis adjacency brief | save filename
user@host> show ospf neighbor brief | save filename
```

Sample Output 1

```
user@host> show bgp summary | save test
Wrote 45 lines of output to 'test'
```

```
user@host> show bgp summary
Groups: 1 Peers: 1 Down peers: 0
Table Tot Paths Act Paths Suppressed History Damp State Pending
inet.0 4 4 0 0 0 0
Peer AS InPkt OutPkt OutQ Flaps Last Up/Dwn State#Active/Received/Damped..
9.9.3.1 2 2627 2628 0 0 21:50:12 4/4/0 0/0/0
```

Sample Output 2 user@host> show isis adjacency brief | save test
Wrote 7 lines of output to 'test'

```
user@host> show isis adjacency brief
IS-IS adjacency database:
Interface System L State Hold (secs) SNPA
so-1/0/0.0 1921.6800.5067 2 Up 13
so-1/1/0.0 1921.6800.5067 2 Up 25
so-1/2/0.0 1921.6800.5067 2 Up 20
so-1/3/0.0 1921.6800.5067 2 Up 19
so-2/0/0.0 1921.6800.5066 2 Up 19
so-2/1/0.0 1921.6800.5066 2 Up 17
so-2/2/0.0 1921.6800.5066 2 Up 20
so-2/3/0.0 1921.6800.5066 2 Up 20
so-5/0/0.0 ranier 2 Up 17
```

Sample Output 3 user@host> show ospf neighbor brief | save test
Wrote 10 lines of output to 'test'

```
user@host> show ospf neighbor brief
Address Intf State ID Pri Dead
10.168.254.225 fxp3.0 2Way 10.250.240.32 128 36
10.168.254.230 fxp3.0 Full 10.250.240.8 128 38
10.168.254.229 fxp3.0 Full 10.250.240.35 128 33
10.1.1.129 fxp2.0 Full 10.250.240.12 128 37
10.1.1.131 fxp2.0 Full 10.250.240.11 128 38
10.1.2.1 fxp1.0 Full 10.250.240.9 128 32
10.1.2.81 fxp0.0 Full 10.250.240.10 128 33
```

What It Means Sample output 1 displays summary information about BGP and its neighbors. Sample output 2 displays information about IS-IS neighbors. Sample output 3 displays information about all OSPF neighbors.

Step 8: Log the System Storage Information

Action To log the system storage statistics for the amount of free disk space in the router's file system, use the following JUNOS CLI operational mode command:

```
user@host> show system storage | save filename
```

Sample Output user@host> show system storage | save test
Wrote 14 lines of output to 'test'

```
user@host> show system storage
Filesystem 1K-blocks    Used    Avail Capacity  Mounted on
/dev/ad0s1a    65687    26700    33733    44%      /
devfs          16         16         0    100%    /dev/
/dev/vn1       9310     9310         0    100%    /packages/mnt/jbase
/dev/vn2       8442     8442         0    100%    /packages/mnt/jkernel-5.0R5.1
/dev/vn3      11486    11486         0    100%    /packages/mnt/jpfe-5.0R5.1
/dev/vn4       5742     5742         0    100%    /packages/mnt/jroute-5.0R5.1
/dev/vn5       1488     1488         0    100%    /packages/mnt/jcrypto-5.0R5.1
/dev/vn6        792         792         0    100%    /packages/mnt/jdocs-5.0R5.1
mfs:2373    1015815         3    934547         0%    /tmp
/dev/ad0s1e    25263         11    23231         0%    /config
procfs         4          4          0    100%    /proc
/dev/ad1s1f   9825963   1811085   7228801    20%    /var
```

What It Means The sample output displays statistics about the amount of free disk space in the router's file system. Values are displayed in 1024-byte (1-KB) blocks.

Step 9: Back Up the Currently Running and Active File System

Action To back up the currently running and active file system so that you can recover to a known, stable environment in case there is a problem during the reinstall, use the following JUNOS CLI operational mode command:

```
user@host> request system snapshot
```

Sample Output user@host> request system snapshot
umount: /altroot: not currently mounted
Copying / to /altroot.. (this may take a few minutes)
umount: /altconfig: not currently mounted
Copying /config to /altconfig.. (this may take a few minutes)

The following filesystems were archived: / /config

What It Means The root file system is backed up to /altroot, and /config is backed up to /altconfig. The root and /config file systems are on the router's internal flash drive, and the /altroot and /altconfig file systems are on the router's hard drive.



NOTE: After you issue the `request system snapshot` command, you cannot return to the previous version of the software because the running and backup copies of the software are identical.

Step 10: Have the Boot Floppy or PCMCIA Card Ready

Action Have available the removable medium that shipped with the router (also called a boot floppy) or the Personal Computer Memory Card International Association (PCMCIA) card. If you do not have a boot floppy, contact customer support at <http://www.juniper.net/support>.

Reinstall the JUNOS Software

Action To reinstall the JUNOS software, follow these steps:

1. Insert the removable medium (boot floppy) into the router.
2. Reboot the router, either by power-cycling it or by issuing the `request system reboot` command from the CLI.
3. At the following prompt, type **y**:

WARNING: The installation will erase the contents of your disk. Do you wish to continue (y/n)?

The router copies the software from the removable medium onto your system, occasionally displaying status messages. This can take up to 10 minutes.

4. Remove the removable medium when prompted.

The router reboots from the primary boot device on which the software is installed. When the reboot is complete, the router displays the login prompt.

Reconfigure the JUNOS Software

Purpose After you have reinstalled the software, you must copy the router's configuration files back to the router. (You also can configure the router from scratch, as described in *JUNOS Internet Software System Basics Configuration Guide*.) However, before you can copy the configuration files, you must establish network connectivity.

Steps To Take To reconfigure the software, follow these steps:

1. Configure Names and Addresses on page 84
2. Set the Root Password on page 85
3. Check Network Connectivity on page 85
4. Copy Backup Configurations to the Router on page 86

Step 1: Configure Names and Addresses

Action To configure the machine name, domain name, and various addresses, follow these steps:

1. Log in as **root**. There is no password.
2. Start the CLI:

```
root# cli
root@>
```

3. Enter configuration mode:

```
cli> configure
[edit]
root@#
```

4. Configure the name of the machine. If the name includes spaces, enclose the entire name in quotation marks (" "):

```
[edit]
root@# set system host-name host-name
```

5. Configure the machine's domain name:

```
[edit]
root@# set system domain-name domain-name
```

6. Configure the IP address and prefix length for the router's management Ethernet interface:

```
[edit]
root@# set interfaces fxp0 unit 0 family inet address address/prefix-length
```

7. Configure the IP address of a default router. This system is called the backup router because it is used only while the routing protocol process is not running.

```
[edit]
root@# set system backup-router address
```

8. Configure the IP address of a Domain Name Server (DNS) server:

```
[edit]
root@# set system name-server address
```

Step 2: Set the Root Password

Action To set the root password, follow these steps:

1. To set the root password, enter a clear-text password that the system will encrypt, a password that is already encrypted, or a secure shell (ssh) public key string.

- To enter a clear-text password, use the following command to set the root password:

```
[edit]
root@# set system root-authentication plain-text-password
New password: password
Retype new password: password
```

- To enter a password that is already encrypted, use the following command to set the root password:

```
[edit]
root@# set system root-authentication encrypted-password password
```

- To enter an ssh public string, use the following command to set the root password:

```
[edit]
root@# set system root-authentication ssh-rsa key
```

2. Commit the changes:

```
[edit]
root@# commit
```

3. Exit from configuration mode:

```
[edit]
root@# exit
root@>
```

Step 3: Check Network Connectivity

Action To check that the router has network connectivity, issue a **ping** command to a system on the network:

```
root@> ping address
```

If there is no response, verify that there is a route to the *address* using the **show route** command. If the address is outside your **fxp0** subnet, add a static route. Once the backup configuration is loaded and committed, the static route is no longer needed and should be deleted.

Step 4: Copy Backup Configurations to the Router

Action To copy backup configurations to the router, follow these steps:

1. To copy the existing configuration and any backup configurations back onto the router, use the **file copy** command. Place the files in the **/var/tmp** directory.

```
user@host> file copy var/tmp/filename
```

2. Load and activate the desired configuration:

```
root@> configure  
[edit]  
root@# load merge /config/filename or load replace /config/filename  
[edit]  
root@# commit
```

After You Reinstall JUNOS Software

Steps To Take To verify that the new version of the JUNOS software is running as expected after the reinstall, follow these steps:

1. Compare Information Logged Before and After the Reinstall on page 87
2. Back Up the New Software on page 87

Step 1: Compare Information Logged Before and After the Reinstall

Purpose Compare the operation of the system before and after the reinstall to ensure that everything is working as expected.

Action To obtain system information, use the following commands:

```
user@host> show version
user@host> show chassis hardware
user@host> show chassis environment
user@host> show system boot-messages
user@host> show configuration
user@host> show interface terse
user@host> show bgp summary
user@host> show isis adjacency brief
user@host> show ospf neighbor brief
user@host> show system storage
```

Compare the information from these commands with the information you obtained before the reinstall.

Step 2: Back Up the New Software

Purpose After a week or so, when you are satisfied that the new software is running successfully, we recommend that you back up the reinstalled software.

Action To back up the reinstalled software, use the following JUNOS CLI operational mode command:

```
user@host> request system snapshot
```

Sample Output The root file system is backed up to /altroot, and /config is backed up to /altconfig. The root and /config file systems are on the router's internal flash drive, and the /altroot and /altconfig file systems are on the router's hard drive.



NOTE: After you issue the `request system snapshot` command, you cannot return to the previous version of the software because the running and backup copies of the software are identical.
