

# Chapter 15

## Upgrade Software Packages

Each JUNOS software release consists of the base operating system (jbase) and four software packages:

jkernl—Operating system package

jroute—Software that runs on the Routing Engine

jpfe—Software that runs on the router's Packet Forwarding Engine

jdocs—Documentation for the software

The four packages are also grouped together in a bundle, which is called jbundle.

Normally, you use the bundle to upgrade all four software packages at the same time. You also can upgrade them individually. The packages are installed on top of a base operating system, which changes with every major release. When upgrading to a new major release, you must first install the base operating system, then install the packages.

To determine which packages are running on the router and to get information about these packages, use the show version command at the top level of the CLI.

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### Upgrade All Software Packages

To upgrade all four software packages, follow these steps:

1. Download the software packages you need from the Juniper Networks Support Web page, [www.juniper.net/support/](http://www.juniper.net/support/).

To download the software packages, you must have a service contract and an access account. If you need help obtaining an account, contact your Juniper Networks sales representative or send email to [logistics@juniper.net](mailto:logistics@juniper.net).

2. Copy each software package to the router. We recommend that you copy them to the /var/tmp directory, which is on the rotating medium (hard disk) and is a large file system.

```
user@host> file copy ftp://ftp/directory/package-name /var/tmp
```

3. Delete the existing software packages and add the new ones:

```

user@host> request system software add /var/tmp/jbundle-package-name
Auto-deleting old jdocs...
Auto-deleting old jroute...
Auto-deleting old jpfe...
Auto-deleting old jkernel...
Adding jkernel...
Adding jpfe...
Adding jroute...
Adding jdocs...
Reloading /config/juniper.conf ...
Activating /config/juniper.conf ...
mgd: commit complete
Checking configuration...
configuration file /var/etc/rpd.conf checks out okay

```

*package-name* is the full URL to the file.

4. Reboot the router to start the new software:

```

user@host> request system reboot

```

## Upgrade Individual Software Packages

To upgrade an individual JUNOS software package, follow these steps:

1. Download the software packages you need from the Juniper Networks Support Web page, [www.juniper.net/support/](http://www.juniper.net/support/).

To download the software packages, you must have a service contract and an access account. If you need help obtaining an account, contact your Juniper Networks sales representative or send email to [logistics@juniper.net](mailto:logistics@juniper.net).

2. Copy each software package to the router. You might want to copy them to the `/var/tmp` directory, which is on the rotating media (hard disk) and is a large file system.

```

user@host> file copy ftp://ftp/directory/package-name /var/tmp

```

3. Delete the software package that currently is installed:

```

user@host> request system software delete package-name

```

*package-name* can be `jkernel`, `jroute`, `jpfe` or `jdocs`.

If you are upgrading more than one package at the same time, delete the operating system package `jkernel` last. If are using this procedure to upgrade all packages at once, delete them in order:

```

user@host> request system software delete jdocs
user@host> request system software delete jpfe
user@host> request system software delete jroute
user@host> request system software delete jkernel

```

When you delete a software package, the system might display the following message:

```
pkg_delete: couldn't entirely delete package
```

This message indicates that someone manually deleted or changed an item that was in a package. You do not need to take any action; the package is still properly deleted.

4. Add the new package:

```
user@host> request system software add /var/tmp/package-name  
Checking available free disk space...11200k available, 6076k suggested.
```

*package-name* is the full URL to the file.

If you are upgrading more than one package at the same time, add jkernel first and the routing software package jroute last. If you are using this procedure to upgrade all packages at once, add them in order:

```
user@host> request system software add /var/tmp/kernel  
user@host> request system software add /var/tmp/jroute  
user@host> request system software add /var/tmp/jpfe  
user@host> request system software add /var/tmp/jdocs
```

5. Reboot the router to start the new software:

```
user@host> request system reboot
```

