

Installing Software

Typically when you install software on a Linux system you do so with a package. A package is a collection of files that make up an application. Additionally, a package contains data about the application as well as any steps required to successfully install and remove that application. The data, or metadata, that is contained within a package can include information such as the description of the application, the version of the application, and a list of other packages that it depends on. In order to install or remove a package you need to use superuser privileges.

A package manager is used to install, upgrade, and remove packages. Any additional software that is required for a package to function properly is known as a dependency. The package manager uses a package's metadata to automatically install the dependencies. Package managers keep track of what files belong to what packages, what packages are installed, and what versions of those packages are installed.

Installing Software on CentOS, Fedora, and RedHat Distributions

The `yum` command line utility is a package management program for Linux distributions that use the RPM package manager. CentOS, Fedora, Oracle Linux, RedHat Enterprise Linux, and Scientific Linux are RPM based distributions on which you can use `yum`.

`yum search search-string` - Search for search-string.

`yum install [-y] package` - Install package. Use the `-y` option to automatically answer yes to yum's questions.

`yum remove package` - Remove/uninstall package.

`yum info [package]` - Display information about package.

To search for software to install, use `yum search search-string`.

```
$ yum search inkscape
Loaded plugins: refresh-packagekit, security
===== N/S Matched: inkscape =====
inkscape-docs.i686 : Documentation for Inkscape
inkscape.i686 : Vector-based drawing program using SVG
inkscape-view.i686 : Viewing program for SVG files

Name and summary matches only, use "search all" for everything.
$
```

To install software, use `yum install package`. Installing software requires superuser privileges. This means you need to use `sudo` or switch to the root account with the `su` command.

```
$ sudo yum install inkscape
[sudo] password for bob:
Loaded plugins: refresh-packagekit, security
Setting up Install Process
Resolving Dependencies
--> Running transaction check
---> Package inkscape.i686 0:0.47-6.el6 will be installed
--> Processing Dependency: python for package: inkscape-0.47-6.el6.i686
...
Dependencies Resolved

=====
```

```

Package      Arch      Version      Repository      Size
=====
Installing:
inkscape      i686      0.47-6.el6      base            8.6 M
Installing for dependencies:
ImageMagick   i686      6.5.4.7-7.el6_5  updates        1.7 M
...
Transaction Summary
=====
Install      21 Package(s)

Total download size: 21 M
Installed size: 97 M
Is this ok [y/N]: y
Downloading Packages:
(1/21): ImageMagick-6.5.4.7-7.el6_5.i686.rpm
...
Installed:
inkscape.i686 0:0.47-6.el6

Dependency Installed:
ImageMagick.i686 0:6.5.4.7-7.el6_5
...
Complete!
$

```

To uninstall a package, use `yum remove`. Removing software requires superuser privileges.

```

$ sudo yum remove inkscape
Loaded plugins: refresh-packagekit, security
Setting up Remove Process
Resolving Dependencies
--> Running transaction check
---> Package inkscape.i686 0:0.47-6.el6 will be erased
--> Finished Dependency Resolution

Dependencies Resolved

=====
Package      Arch      Version      Repository      Size
=====
Removing:
inkscape      i686      0.47-6.el6      @base            37 M

Transaction Summary
=====
Remove      1 Package(s)

Installed size: 37 M
Is this ok [y/N]: y
Downloading Packages:
Running rpm_check_debug
Running Transaction Test
Transaction Test Succeeded
Running Transaction
  Erasing      : inkscape-0.47-6.el6.i686      1/1
  Verifying    : inkscape-0.47-6.el6.i686      1/1

Removed:
inkscape.i686 0:0.47-6.el6

Complete!
$

```

The `rpm` Command

In addition to the `yum` command, you can use the `rpm` command to interact with the package manager.

`rpm -qa` - List all the installed packages.

`rpm -qf /path/to/file` - List the package that contains file.

`rpm -ivh package.rpm` - Install a package from the file named package.rpm.

`rpm -ql package` - List all files that belong to package

```
$ rpm -qa | sort | head
acl-2.2.49-6.el6.i686
acpid-1.0.10-2.1.el6.i686
aic94xx-firmware-30-2.el6.noarch
alsa-lib-1.0.22-3.el6.i686
alsa-plugins-pulseaudio-1.0.21-3.el6.i686
alsa-utils-1.0.22-5.el6.i686
anaconda-13.21.215-1.el6.centos.i686
anaconda-yum-plugins-1.0-5.1.el6.noarch
apache-tomcat-apis-0.1-1.el6.noarch
apr-1.3.9-5.el6_2.i686
$ rpm -qf /usr/bin/which
which-2.19-6.el6.i686
$ sudo rpm -ivh SpiderOak-5.0.3-1.i386.rpm
[sudo] password for bob:
Preparing... ##### [100%]
 1:SpiderOak ##### [100%]
$
```

Installing Software on Debian and Ubuntu

The Debian and Ubuntu distributions use a package manager called APT, the Advanced Packaging Tool. APT is comprised of a few small utilities with the two most commonly used ones being `apt-cache` and `apt-get`.

`apt-cache search search-string` - Search for search-string.

`apt-get install [-y] package` - Install package. Use the `-y` option to automatically answer yes to apt-get's questions.

`apt-get remove package` - Remove/uninstall package, leaving behind configuration files.

`apt-get purge package` - Remove/uninstall package, deleting configuration files.

`apt-cache show package` - Display information about package.

To search for software to install, use `apt-cache search search-string`.

```
$ apt-cache search inkscape
create-resources - shared resources for use by creative applications
inkscape - vector-based drawing program
python-scour - SVG scrubber and optimizer
fonts-opendin - Open DIN font
fonts-rufscript - handwriting-based font for Latin characters
ink-generator - Inkscape extension to automatically generate files from a template
lyx - document processor
robocut - Control program for Graphtec cutting plotters
sozi - inkscape extension for creating animated presentations
ttf-rufscript - handwriting-based font for Latin characters (transitional dummy
package)
```

```
$
```

To install software, use `apt-get install package`. Installing software requires superuser privileges. This means you need to use `sudo` or switch to the root account with the `su` command.

```
$ sudo apt-get install inkscape
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  aspell aspell-en cmap-adobe-japan1 dbus-x11
...
3 upgraded, 74 newly installed, 0 to remove and 96 not upgraded.
Need to get 62.7 MB of archives.
After this operation, 171 MB of additional disk space will be used.
Do you want to continue [Y/n]? y
...
Setting up perlmagick (8:6.6.9.7-5ubuntu3.2) ...
Processing triggers for libc-bin ...
ldconfig deferred processing now taking place
$
```

To uninstall a package, use `apt-get remove`. Removing software requires superuser privileges.

```
$ sudo apt-get remove inkscape
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages will be REMOVED:
  inkscape
0 upgraded, 0 newly installed, 1 to remove and 96 not upgraded.
After this operation, 64.9 MB disk space will be freed.
Do you want to continue [Y/n]? y
(Reading database ... 69841 files and directories currently installed.)
Removing inkscape ...
Processing triggers for man-db ...
Processing triggers for hicolor-icon-theme ...
$
```

The dpkg Command

In addition the `apt` utilities, you can use the `dpkg` command to interact with the package manager.

`dpkg -l` - List all the installed packages.

`dpkg -S /path/to/file` - List the package that contains file.

`dpkg -i package.rpm` - Install a package from the file named package.deb.

`dpkg -L package` - List all files that belong to package.

```
$ dpkg -l | head
Desired=Unknown/Install/Remove/Purge/Hold
| Status=Not/Inst/Conf-files/Unpacked/halF-conf/Half-inst/trig-aWait/Trig-pend
|/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad)
||/ Name                      Version                Description
+++-=====
ii  accountsservice             0.6.15-2ubuntu9.6      query and manipulate user account
information
ii  acpid                       1:2.0.10-1ubuntu3      Advanced Configuration and Power
Interface event daemon
```

```

ii  adduser          3.113ubuntu2      add and remove users and groups
ii  apparmor          2.7.102-0ubuntu3.9 User-space parser utility for
AppArmor
ii  appport           2.0.1-0ubuntu17.5 automatically generate crash reports
for debugging
$ dpkg -S /usr/bin/which
debianutils: /usr/bin/which
$ sudo dpkg -i spideroak_5.1.3_i386.deb
[sudo] password for bob:
Selecting previously unselected package spideroak.
(Reading database ... 153942 files and directories currently installed.)
Unpacking spideroak (from spideroak_5.1.3_i386.deb) ...
Setting up spideroak (1:5.1.3) ...
Processing triggers for man-db ...
Processing triggers for desktop-file-utils ...
Processing triggers for bamfdaemon ...
Rebuilding /usr/share/applications/bamf.index...
Processing triggers for gnome-menus ...
$

```

Deep Dive

- [Managing Software with Yum](#)
- [AptGet Howto](#)
- [Ubuntu - Installing Software](#)

<http://LinuxTrainingAcademy.com>