

Installing and Managing Software

What You Will Learn

What are Packages

What are Package Managers

How to manage software on RHEL, CentOS, Debian, Ubuntu, and similar operating systems

Why Packages & Package Managers?

Standards for bundling software files

Common interface for managing software

Ease of finding, installing, and uninstalling software

What You Will Be Able to Accomplish

How to find, install, and remove packages

How to determine what packages are installed

How to inspect packages and their contents

Package

A collection of files

Data / Metadata

- Package description

- Version

- Dependencies

Package Manager

Installs, upgrades, and removes packages

Manages dependencies

Keeps track of what is installed

Package Types

RPM distros

RHEL, CentOS, and Oracle Linux

DEB distros

Debian, Ubuntu, and Linux Mint

Installing Software on RPM Distros

RedHat

CentOS

Oracle Linux

AlmaLinux

Rocky Linux

yum - RHEL 7 / CentOS 7 & Earlier

`yum search string`

Search for string

`yum info [package]`

Display info

`yum install [-y] package`

Install package

`yum remove package`

Remove package

`yum upgrade [package]`

Update package

dnf - RHEL 8 / CentOS 8 & Later

<code>dnf search string</code>	Search for string
<code>dnf info [package]</code>	Display info
<code>dnf install [-y] package</code>	Install package
<code>dnf remove package</code>	Remove package
<code>dnf upgrade [package]</code>	Update package

rpm

`rpm -qa`

List all installed packages

`rpm -qf /path/to/file`

List the file's package

rpm

`rpm -ql package`
List the package's files

`rpm -ivh package.rpm`
Install the package

rpm

`rpm -e package`

Erase (uninstall) the package

Installing Software on DEB Distros

Debian

Ubuntu

Linux Mint

Kali Linux

APT - Advanced Packaging Tool

`apt-cache`

`apt-get`

`apt`

APT - Advanced Packaging Tool

`apt-cache search string`
Search for string

`apt-get install [-y] package`
Install package

APT - Advanced Packaging Tool

`apt-get remove package`

Remove package, leaving configuration

`apt-get purge package`

Remove package, deleting configuration

APT - Advanced Packaging Tool

`apt-cache show package`

Display information about the package

APT - Advanced Packaging Tool

```
apt-get update
```

Update the local list of remote packages

```
apt-get upgrade [-y]
```

Upgrade all installed packages

APT - Advanced Packaging Tool

apt

Combination of apt-cache and apt-get

apt search

apt install

apt purge

apt update

apt upgrade

dpkg

```
dpkg -l
```

List the installed packages

```
dpkg -S /path/to/file
```

List the file's package

dpkg

```
dpkg -L package
```

List all the files in package

```
dpkg -i package.deb
```

Install the package

dpkg

`dpkg -r package`

Remove (uninstall) the package

How to Keep Your System Clean

```
apt autoremove
```

```
dnf autoremove
```


Recap

Packages & Package Managers

RPM

`dnf / yum`
`rpm`

DEB

`apt`
`dpkg`

Your Turn

- Search for a package.
- View details about the package if needed.
- Install the package.
- Verify the installation.
- Example software to practice with:
 - Apache
 - MariaDB