

# 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