Package managers for installing applications

Previously, you learned about Linux distributions and that different distributions derive from different sources, such as Debian or Red Hat Enterprise Linux distribution. You were also introduced to package managers, and learned that Linux applications are commonly distributed through package managers. In this reading, you'll apply this knowledge to learn more about package managers.

Introduction to package managers

A **package** is a piece of software that can be combined with other packages to form an application. Some packages may be large enough to form applications on their own.

Packages contain the files necessary for an application to be installed. These files include dependencies, which are supplemental files used to run an application.

Package managers can help resolve any issues with dependencies and perform other management tasks. A **package manager** is a tool that helps users install, manage, and remove packages or applications. Linux uses multiple package managers.

Note: It's important to use the most recent version of a package when possible. The most recent version has the most up-to-date bug fixes and security patches. These help keep your system more secure.

Types of package managers

Many commonly used Linux distributions are derived from the same parent distribution. For example, KALI LINUX ™, Ubuntu, and Parrot all come from Debian. CentOS comes from Red Hat.

This knowledge is useful when installing applications because certain package managers work with certain distributions. For example, the Red Hat Package Manager (RPM) can be used for Linux distributions derived from Red Hat, and package managers such as dpkg can be used for Linux distributions derived from Debian.

Different package managers typically use different file extensions. For example, Red Hat Package Manager (RPM) has files which use the `.rpm` file extension, such as `Package-Version-Release_Architecture.rpm`. Package managers for Debian-derived Linux distributions, such as dpkg, have files which use the `.deb` file extension, such as `Package_Version-Release_Architecture.deb`.

Package management tools

In addition to package managers like RPM and dpkg, there are also package management tools that allow you to easily work with packages through the shell. Package management tools are sometimes utilized instead of package managers because they allow users to more easily perform basic tasks, such as installing a new package. Two notable tools are the Advanced Package Tool (APT) and Yellowdog Updater Modified (YUM).

Advanced Package Tool (APT)

APT is a tool used with Debian-derived distributions. It is run from the command-line interface to manage, search, and install packages.

Yellowdog Updater Modified (YUM)

YUM is a tool used with Red Hat-derived distributions. It is run from the command-line interface to manage, search, and install packages. YUM works with `.rpm` files.

Key takeaways

A package is a piece of software that can be combined with other packages to form an application. Packages can be managed using a package manager. There are multiple package managers and package management tools for different Linux distributions. Package management tools allow users to easily work with packages through the shell. Debian-derived Linux distributions use package managers like dpkg as well as package management tools like Advanced Package Tool (APT). Red Hat-derived distributions use the Red Hat Package Manager (RPM) or tools like Yellowdog Updater Modified (YUM).