Linux - Packages

# General

## What is a package

Debian has a robust application packaging system for its applications, allowing for uniform install and management. The packaging system uses a set of tools called the Advanced Packaging Tool (APT) to manage the system. There are several command-line tools which interact with APT in order to install, remove, and manage packages, common tools are: apt, apt-get, and Aptitude.

## apt vs apt-get

apt is a modern tool which takes the most commonly used commands from apt-get and apt-cache. apt has the aim to be more plesant for end users, including a progress bar, notice of number of upgradable packages, and many other features.

Since apt-get still has a large amount of advanced functionality, it will still be used in scripting, but generally as a user on the command-line apt is better to use.

# Features

## Search

A cached list of the available packages is kept on the system, this allows packages to be searched via the command line. To search first update the package list to ensure it is current:

sudo apt update

Then search:

sudo apt search "<search-term>"

## Install

Install a package by name:

sudo apt install <package-name>

## Remove

Remove a package by name:

apt remove <package-name>

Remove a package and its configuration:

apt purge <package-name>

## Other Common Commands

|  |  |
| --- | --- |
| **Command** | **Function** |
| apt update | Refreshes repository index |
| apt upgrade | Upgrades all upgradable packages |
| apt autoremove | Removes unwanted packages |
| apt full-upgrade | Upgrades packages with auto-handling of dependencies |
| apt search | Searches for the program |
| apt show | Shows package details |
| apt list | Lists packages with criteria |
| apt edit-sources | Edits sources list |

# Package Lists

## sources.list

apt stores a list of repositories or software channels in the sources list file ```/etc/apt/sources.list``` and any other files with the suffix ```.list``` under the same directory.

Each entry is in the following format:

<format> <URI> <distribution> <section>

Where:

* format:
  + deb - repos contain binaries and pre-compiled packages
  + deb-src - repos contain source files for developers
* URI - location of repository
* distribution - release name or version of distribution
* section - section names or components

Repos can be added to the list like so:

deb-src http://ch.archive.ubuntu.com/ubuntu/ saucy main restricted