**APT (Advanced Packaging Tool) Repository of Ubuntu or Debian Based System**

**Introduction**

APT stands for Advanced Package Tool and is an open source command-line application used in many Linux distributions that use the DEB package format. It is originally developed by the Debian developers for the Debian GNU/Linux operating system. It is one of the best command-line package management tools invented in the last years for a Linux system. It is the official package manager for Debian GNU/Linux, which inspired many popular Linux operating systems, including Ubuntu or Linux Mint.

The apt-get command is a powerful command-line tool used to work with Ubuntu's Advanced Packaging Tool (APT) performing such functions as installation of new software packages, upgrade of existing software packages, updating of the package list index, and even upgrading the entire Ubuntu system.

In the beginning there was the .tar.gz. Users had to compile each program that they wanted to use on their GNU/Linux systems. When Debian was created, it was deemed necessary that the system include a method of managing the packages installed on the machine. The name dpkg was given to this system. Thus the famous `package' first came into being on GNU/Linux, a while before Red Hat decided to create their own `rpm' system.

At that time there was need of rapid, practical, and efficient way to install packages that would manage dependencies automatically and take care of their configuration files while upgrading. Here again, Debian led the way and gave birth to APT, the Advanced Packaging Tool, which has since been ported by Conectiva for use with rpm and has been adopted by some other distributions.

**What is apt-get?**

The apt-get utility is a powerful and free package management command line program, that is used to work with Ubuntu’s APT (Advanced Packaging Tool) library to perform installation of new software packages, removing existing software packages, upgrading of existing software packages and even used to upgrading the entire operating system.

Being a simple command-line tool, apt-get has numerous advantages over other package management tools available in Ubuntu for server administrators. Some of these advantages include ease of use over simple terminal connections (SSH), and the ability to be used in system administration scripts, which can in turn be automated by the cron scheduling utility.

Some examples of popular uses for the apt-get utility:

1. Install a Package: Installation of packages using the apt-get tool is quite simple. For example, to install the network scanner nmap, type the following:

**Sudo apt-get install nmap**

1. Remove a Package: Removal of a package (or packages) is also straightforward. To remove the package installed in the previous example, type the following:

**Sudo apt-get remove nmap**

Also, adding the --purge option to apt-get remove will remove the package configuration files as well. This may or may not be the desired effect, so use with caution.

1. Update the Package Index: The APT package index is essentially a database of available packages from the repositories defined in the /etc/apt/sources.list file and in the /etc/apt/sources.list.d directory. To update the local package index with the latest changes made in the repositories, type the following:

**Sudo apt-get update**

1. Upgrade Packages: Over time, updated versions of packages currently installed on your computer may become available from the package repositories (for example security updates). To upgrade your system, first update your package index as outlined above, and then type:

**Sudo apt-get upgrade**

https://d.adroll.com/cm/f/out

**APT Repository**

A **repository** is a database of available packages, that can be downloaded by your package manager. The repository is maintained centrally, but individual computers keep a cached list of the packages available in the repository — and, therefore, need to occasionally go back to the repository to get an updated list. So when you use APT to find out what packages are available to you (usually through **Add/Remove Programs** or **Synaptic Package Manager**, although you can also use apt-cache), you're actually looking at the locally cached version of the central Ubuntu repositories.

There are repositories available:

* ****Main**** — This is software which is “officially supported” by the Ubuntu team.
* ****Restricted**** — This software is supported, but doesn't fully follow the “free software philosophy.” In other words, the software isn't available under a completely free license.
* ****Universe**** — This is software which is community-maintained, rather than “officially supported” by the Ubuntu team. It doesn't mean the software is any more buggy than the **Main** software, it just means that the Ubuntu team won't provide direct support for it. The software is free, however, just like the software in the Main repository.
* ****Multiverse**** — This is software that's not free, and not supported by the Ubuntu team. It doesn't mean you shouldn't or can't use it, you just have to put more thought into it before downloading it, especially in regards to licensing issues.

**APT** **pinning**

The APT pinning feature allows administrators to force APT to choose particular versions of packages which may be available in different versions from different repositories. This allows administrators to ensure that packages are not upgraded to versions which may conflict with other packages on the system, or that have not been sufficiently tested for unwelcome changes. In order to do this, the pins in APT's preferences file (/etc/apt/preferences) must be modified,

**APT on CD**  
  
APT on CD is a program that makes an ISO file containing all of the DEB files in the cache directory. This is useful when installing many applications after a fresh Linux install. Then, the user can have a copy of the installed software on a disk (if the ISO is burnt to a disk). This allows the user to install the same software off of the disk onto other Debian systems.

**GUI Front-Ends to APT**

APT is based on the Debian package manager. It can be used from the command line, but there are also two GUI-based front-ends for APT: **Add/Remove Programs**, which can be found at the bottom of Ubuntu's application menu, and the **Synaptic Package Manager**, which can be found in the System->Administration->Synaptic Package Manager menu.

## Add/Remove Programs

## Both applications do similar things, but the **Add/Remove Programs** application is a quicker and easier way to install software. You don't need to know anything about package names, or dependencies, to use it; simply use the GUI interface to find — or search for — the program you're looking for. Click the checkbox, and APT will be called in the background, to install the necessary package(s) to make the application run.

Applications listed in the Add/Remove Programs application use intuitive names, rather than their package names. For example, suppose the only instant messaging service you use is MSN Messenger, and therefore decide that you'd rather use **aMSN** than **Gaim**. The package name for aMSN will be something similar to this: amsn\_0.94-1\_i386.deb. However, if you look in the Add/Remove Programs application, it will simply be listed as aMSN. You don't need to know the version of the application; Add/Remove Programs will simply get you the latest one, available in APT's repository. You don't need to worry about the i386 part — all of the packages available to you on Ubuntu will be for i386 machines.

Removing applications is just as easy. Open Add/Remove Programs, find the application you want to remove, and un-check its checkbox. It will either be removed, or Add/Remove Programs will tell you it can't be removed, if other applications are dependent on it.

## Synaptic Package Manager

The Synaptic Package Manager is more detailed than the Add/Remove Programs application. It shows each and every package available in its repository, whether it's a top-level package representing an entire application, or a smaller piece of a larger application. However, the technique for using the Synaptic Package Manager is the same: you choose a package, tell the Synaptic Package Manager that you want to install it, and it will take care of making sure that all of your dependencies are also installed.

There is also some extra functionality available in Synaptic Package Manager, that you can't do from Add/Remove Programs. For example, you can refresh the package list from the repositories, and even change which repositories APT will use, to look for updated packages. The Synaptic Package Manager also requires you to enter your administrator password, which the Add/Remove Programs application does not.

**References:**

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