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Understanding package manager and

#90DaysOfDevOps

(1) What is a package manager in Linux?

In simpler words, a package manager is a tool that allows users to install, remove, upgrade, configure and manage software packages on an operating system. The package manager can be a graphical application like a software centre or a command lines tool like apt-get or Pacman.

You'll often find me using the term 'package' in tutorials and articles, To understand package manager, you must understand what a package is.

(2) What is a package?

A package is usually referred to as an application but it could be a GUI application, command line tool or a software library (required by other software programs). A package is essentially an archive file containing the binary executable, configuration file and sometimes information about the dependencies.

(3) Different kinds of package managers.

Package Managers differ based on the packaging system but the same packaging system may have more than one package manager.

For example, RPM has Yum and DNF, package managers. For DEB, you have apt-get, aptitude command line-based package managers.

(4) You have to install docker and Jenkins in your system from your terminal using package managers.

Install and update the package index

```
sudo apt install
```

```
sudo apt update
```

(I) Install docker in the ubuntu Operating system

```

ubuntu@ip-172-31-36-119:~$ sudo apt install docker.io
Building package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  bridge-utils contained-dns-root-data dnsmasq-base pigz runc ubuntu-fan
Suggested packages:
  ifupdown aufs-tools cgroupfs-mount | cgroup-lite deboststrap docker-doc rinse zfs-fuse | zfsutils
The following NEW packages will be installed:
  bridge-utils contained-dns-root-data dnsmasq-base docker.io pigz runc ubuntu-fan
0 upgraded, 8 newly installed, 0 to remove and 32 not upgraded.
Need to get 66.8 MB of archives.
After this operation, 287 Mb of additional disk space will be used.
Do you want to continue? [Y/n] y
get1 http://ap-south-1-ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 pigz amd64 2.6-1 [63.6 kB]
get2 http://ap-south-1-ec2.archive.ubuntu.com/ubuntu jammy/main amd64 bridge-utils amd64 1.7-ubuntu3 [34.4 kB]
get3 http://ap-south-1-ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 runc amd64 1.1.0-0ubuntu1.1 [4242 kB]
get4 http://ap-south-1-ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 contained amd64 1.5.9-0ubuntu1.1 [28.1 MB]
get5 http://ap-south-1-ec2.archive.ubuntu.com/ubuntu jammy/main amd64 dns-root-data all 202101101 [5256 B]
get6 http://ap-south-1-ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 dnsmasq-base amd64 2.86-1.ubuntu0.1 [354 kB]
get7 http://ap-south-1-ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 docker.io amd64 20.10.12 [35.2 MB]
get8 http://ap-south-1-ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 ubuntu-fan all 0.12.16 [35.2 kB]
Fetched 66.8 MB in 3s (1614 kB/s)
Preconfiguring packages ...
Selecting previously unselected package pigz.
(Reading database ... 92384 files and directories currently installed.)
Preparing to unpack ./dpkg_2.6-1_amd64.deb ...
Unpacking pigz (2.6-1) ...

```

```
ubuntu@ip-172-31-36-119:~$ docker --version
Docker version 20.10.12, build 20.10.12-0ubuntu4
ubuntu@ip-172-31-36-119:~$
```

(II) Install Jenkins on Ubuntu operating system follow these steps

Since Jenkins is written in Java, the first step is to install Java.

Update the package index:

```
sudo apt update
```

Install Jenkins:

```
sudo apt install jenkins
```

Start the Jenkins daemon:

```
sudo systemctl start jenkins
```

To enable the Jenkins daemon to start on boot:

```
sudo systemctl enable jenkins
```

(5) Difference between systemctl and systemd.

systemctl is used to examine and control the state of the “systemd” system and service manager. **systemd** is a system and service manager for Unix-like operating systems (most of the distributions, not all). As the system boots up, the first process created, i.e. init process with PID = 1, is systemd system that initiates the userspace services. **Syntax :**

```
systemctl [options..] command [name..]
```

Thank you for reading this article and giving your valuable time. If you have found this article insightful kindly follow me.

~Prabhakar Yadav