

Package Management

Package :

Package is a collection of Software files used to install an application or product.

Package Manager:

It is the utility to manage the packages. We have 2 package utilities in Linux:

- 1)RPM (**redhat package manager**)
- 2)YUM (**Yellow dog update manager**)

RPM (redhat package manager) :

It is one of the default package manager in Linux. We can install the packages with this utility of packages having **.rpm** extension.

/var/lib/rpm directory → This is the location where RPM is being installed.

/var/log/yum.log file → Contains all the RPM related logs.

Understanding the Package naming Convention :

nfs-utils - 2.4.6 - 7.el7 .x86_64

NAME	VERSION	RELEASE	Architecture
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Installing a Package:

```
#rpm -ivh <Packagename>
```

-i --> Installing a package

-v --> Verbose

-h --> Hash prompt

To check package installed / Not installed :

```
#rpm -q <packagename>
```

-q -->Query a package

Lists all the packages installed with their names:

```
#rpm -qa
```

-q -->All packages

Lists all the Packages installed in Numbers

```
#rpm -qa |wc -l
```

Checks the consistency of a package

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```
#rpm -ivh --test <Packagename>
```

Uninstalling package :

```
#rpm -e <Packagename>
```

```
-e -->uninstalling
```

Uninstalling package in Verbose Mode :

```
#rpm -evv <packagename>
```

```
-v -->Verbose
```

Displays Detailed information of Package:

```
#rpm -qi <packagename>
```

```
-i --> Information
```

Lists the Config. files of package:

```
#rpm -qc <packagename>
```

```
-c -->Configuration Files
```

Lists the package related files

```
#rpm -ql <Packagename>
```

List all the document files installed by package

```
#rpm -qd <packagename>
```

```
-d --> documentation files
```

Lists Scripts that run before / after / update / remove the package

```
#rpm -q --scripts<Packagename>
```

Upgrading a package

```
#rpm -Uvh <packagename>
```

```
-U -->Updating Package
```

YUM (Yellow Dog update Manager)

It is also one of the default package management utility in Linux. It is used to search, Install, Update & remove necessary RPM from the OS.

→Yum uses repository to manage the RPM files. A repository is the collection of RPM files. Yum depends on repository.

→There must be at-least one working repository or more. A repository can be configured either Local or remotely using FTP / HTTP.

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→Repository may contain multiple versions of the same RPM package.

→Repository may contain different builds for different architectures.

→YUM can automatically resolves software dependencies & based on system hardware it can automatically select appropriate version of RPM package from the repository

→**/etc/yum.conf** is the main configuration file for YUM.

→**/etc/yum.repos.d** is the main configuration directory which contains the repository configuration information.

Creating local repository :

→Insert RHEL DVD & copy all the packages to a FS having min 5GB of free space.

Change the PWD inside of RHEL DVD where packages exists

```
#cd /run/media / ..... / .... /Packages ( Dummy path for understanding
```

Assume /RHEL is the mount point have 5GB of FS free space

```
#cp -r * /RHEL (this command copies all the packages to /RHEL )
```

```
#cd /RHEL
```

```
#ls
```

```
#rpm -ivh createrepo-0.9.9.rpm | #yum install createrep ( ensure internet is connected to your centos )
```

Now create repository on /RHEL

```
#createrepo /RHEL
```

NOTE:

Now we have created the local repository but YUM command can't use this repository because we haven't created the necessary repository configuration files for our local repository.

```
#cd /etc/yum.repos.d
```

```
#vi rhel.repo
```

```
[rhelrepo]
```

```
name=rhelrepo
```

```
baseurl=file:///RHEL
```

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```
enabled=1
gpgcheck=0
:wq
```

NOTE :

- ➔ In the base URL file defines its local repository
- ➔ In the base URL ftp defines repository configured with FTP
- ➔ In the base URL http defines repository configured with HTTP
- ➔ **Enabled=1 or 0** (This key defines the state of the repository. If the value is set to 1 then repository is ENABLED. If the value is set to ZERO(0) then repository is DISABLED)
- ➔ **Gpgcheck=1 or 0** (This key defines whether the integrity of the package should be checked or not .

```
#yum repolist (List the default active repository)
```

```
#yum help (Lists the options we can use with YUM)
```

```
#yum list 'http*' (Displays installed & Available packages)
```

```
#yum info httpd (Displays detailed information of a specific package)
```

```
#yum provides /var/www/html (Displays the package that provides /var/www/html directory)
```

```
#yum install httpd (Installing package including dependencies)
```

```
#yum update <package> (Updating a specific package)
```

```
#yum downgrade <package> (downgrading a package from higher to previous version)
```

```
#yum install kernel (Lists all the installed & available kernels)
```

```
#yum remove httpd (uninstalling a package)
```

```
#yum history
```

```
#yum clean all (To clear the cache)
```

```
#yum repolist all (List all the available repositories)
```

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