Package Management (centos/Red hat)

Rpm (Red Hat Package Manager)and Yum(Yellowdog Updater Modified) package management tools are basically Centos/Redhat,fedora like Operating system.

Like dpkg in debian based OS. Rpm is the local package management tool(low level package management tool).and Yum is the online package management tool(high level package management tool).Yum is like apt in ubuntu OS.

[just like the dpkg the rpm command may face dependency problem while installing software .and yum search the dependency automatically and install them.]

rpm package management:

Install package:

For install package with rpm this command is used

=>rpm -i <package_name>

[pic]

remove package:

For remove this package with rpm this command is used
=>rpm -e <package_name>

[pic]
[if one package depends on the other package you cant remove it with rpm command unless you remove the other packages that depends on it. For example if you want to remove the ‘openssh’ package because the ‘open-ssh

client' packages depends on it .First you have to remove this. But if you use the yum command to remove the any packages this will happen automatically.]

Force Install package:

if you want to install a packages with or without the dependency (force install) you can do it with this command

=>rpm -i –nodeps <package_man>

[pic]
[its not recommended because it leaves you a broken dependency problem]

Verbosity:

if we want to see whats happening when installing or removing we can use the verbosity flag.

Install package with verbosity flag

=>rpm -i -v <package_name>

[pic]
Remove package with verbosity flag

=>rpm -e -v <package_name>

[pic]

Check Package install Status:

if you want to check is a package is installed or not .you can do with this command

=>rpm -Vv <package_name>

[pic]
for example

=>rpm -Vv nano-2.3.1-10.el7.x86_64.rpm
[pic]
[if you want to find out that your package is intact you can find it by checking the output flag. Because if you change any configuration and run the command again it will show you different result. That proves that file is changed]

Check Package Checksum:

To check the file checksum this command is used

=>rpm -vK <package_name>
[pic]

Find Package Description:

To find the description of any installed package this command is used

=>rpm -qi <installed_package>
[pic]
for example

=>rpm -qi nano
[pic]

Query All Packages:

To query all the packages this command is used

=>rpm -q -a
[pic]

you can find any installed packages with this command
=>rpm -q -a | grep <packages_name>
[pic]
example

=>rpm -q -a | grep dhcp
[pic]

Yum package management:

yum(Yellowdog Updater Modified) is more advance package management tools you can do everything with yum that can be done with rpm.yum uses a lot of third party repository to install packages automatically by resolving their dependency issue

Find Package information:

To find detail information about any packages this command is used .it will search the repository and give detail information about the packages.

=>yum info <package_name>

[pic]

Search package:

To search the packages in the repository this command is used

=>yum search <package_name>

[pic]

Install package:

To install packages this command is used.it will install the packages with the dependency

=>yum install <package_name>

[pic]

This command will ask for confirmation. to install automatically. Just add a -y option .

=>yum install -y <package_name>

Remove package:

To remove package with all its dependencies this command is used.

=>yum remove <package_name>

This command will ask for confirmation. to install automatically. Just add a -y option .

=>yum remove -y <package_name>
or
=>yum erase -y <package_name>

[pic]

Update package:

If you have any outdated version of any packages and you need to update it. you can use the update command to update to its latest stable version. If it needs any additional dependency it will automatically resolve them

=>yum update <package_name>

[pic]

List_packages:

To list all the available packages in the Yum repository this command is used

=>yum list | more

[pic]

To list all the installed packages this command is used

=>yum list installed

[pic]

you can use the list function as a searching purpose .for searching packages this command is used

=>yum list <package_name>

Yum provides function:

if you find any program or any files and want to find out which packages it belongs to. You can find it with this command

=>yum provides <file_name/program_names>

[pic]

Check update packages:

If you want to check weather any update available for your installed packages you can check using this command

=>yum check-update

[pic]

Update system:

If you want to update all your packages and system and install all the latest patches and security updates in your system this command is used

=>yum update

[pic]

[one of the main advantage of the yum over the apt command is before installing any packages yum will automatically update the repository]

List all the group packages:

Number of packages are bundled up to make a particular group. Instead of installing individual packages you can install the whole particular group. To list all the group this command is used

=>yum grouplist

[pic]

Install group packages:

To install a particular package group we use the groupinstall.

=>yum groupinstall '<group package name>'

for example

=>yum groupinstall 'Basic Web Server'

[pic]

Update group packages:

To update a particular package group we use the groupupdate.

=>yum grouupdate ‘<group package name>’

for example

=>yum grouupdate ‘Basic Web Server’

[pic]

Remove group packages:

To remove a particular package group we use the groupremove.

=>yum groupremove ‘<group package name>’

for example

=>yum groupremove ‘Basic Web Server’

[pic]

List Enabled yum repository:

To list all the enabled yum repository this command is used

=>yum repolist

[pic]

List All yum repository:
To list all the enabled and disabled yum repository this command is used

=>yum repolist all

[pic]

List packages from a particular repository:

To install a packages from a particular repository this command is used

=>yum –enablerepo=epel install java

[This command wont enable the repository parmanently.its only for the current command]

[pic]

Permanently Enable/Disable a particular repository:

To enable a repository permanently this command is used

=>yum-config-manager –enable <repo_name>

[This command will enable the repository permanently]

[pic]

To disable a repository permanently this command is used

=>yum-config-manager –disable <repo_name>

[This command will disabled the repository permanently]

[pic]

Clean yum Cache:

To clean all the cached files from enabled repository this following command is used.

=>yum clean all

[pic]

View History:

To view all the past transactions of the yum command this following command is used

=>yum history

[pic]

Yumdownlaoder:

there is another tools called ‘yumdownloader’ in the redhat/centos based system. The job of this tools is to download the rpm file. Means it just download the rpm file but doesn't install it. The following command is used to download rpm file

=>yumdownloader <pakage_name>

for example

=>yumdownloader git

it will install the **git.rpm** file but it wont download the dependency. To download any package with the dependencies this command is used

=>yumdownloader --resolve <pakage_name>

for example

=>yumdownloader --resolve git

Yum Repository:

just like the **‘sources.list’** file in the ubuntu package management there is also a place where the repository files stored.its in the ‘**/etc/yum.repos.d**’ we can list all the files with the ‘ls -s’ command.you will see something like this
[pic]

there can be more than one .repo file if you look inside the file with this command

=>cat repofile.repo

example
=>cat CentOS-Base.repo

if you look inside the file it will like the **‘sources.list’ .** Just a little bit different

[pic]

There are different different mirror list for **‘base’**,**’updates’**,**’extras’** and additional ‘**packages**’ and every section has a

=>name for the mirror list
=>baseurl for that mirror
=>gpgcheck option
=>enable option
=>gpgkey

if you want you can disable the gpgcheck cause the the repository may not be encrypted.

[pic]

there is a configuration file in **/etc/yum.conf** .By changing the configuration you can customize the operation of the yum tools.

[pic]

=>**keepcache=0** will not keep the cache file
=>**logfile**='/var/log/yum/log' will store the log file in that file
=>**obsolute=1** delete the obsolute packages
=>**gpgcheck=1** will check gpg every time it install packages
=>**plugins=1** will allow yum to install plugins
[yum uses different plugins. one of them is fastest mirror.it founds the fastest mirror so the user find the packages as fast as possible]

[pic]

Comparison Between Two Package Management

Operation	Debian package management	Centos package Management
Show package information	sudo apt show <pkg> sudo dpkg -s <pkg>	sudo yum info <pkg> sudo rpm -qi <pkg>
List all the packages	Sudo apt list sudo dpkg -L	Sudo yum list sudo rpm -q -a
Download Packages	sudo apt download <pkg>	Yumdownloader <pkg> Yumdownloader –resolve <pkg>
Search packages	sudo apt search <pkg> sudo aptitude search <pkg>	Sudo Yum search <pkg>
Install packages	Sudo apt install <pkg> sudo aptitude install <pkg> sudo dpkg -i <pkg>	Sudo yum install <pkg> sudo rpm -i <pkg>
Remove Packages	Sudo apt remove <pkg> sudo dpkg -r <pkg> sudo aptitude remove <pkg>	Sudo yum remove <pkg> sudo yum erase <pkg> sudo rpm -e <pkg>
Check integrity	Sudo dpkg -V <pkg>	Sudo rpm -V <pkg>
Update packages/system	Sudo apt update	Sudo yum update
Upgrade System	Sudo apt upgrade	Sudo yum upgrade