Linux Administration

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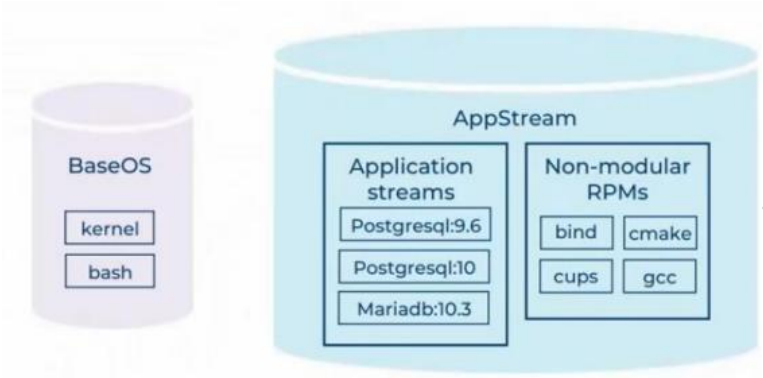
packages

- When the developer write a code then do build and compile and provide us with
  - .exe for windows
  - .rpm for redhat
  - .deb for debian
  - .apk for android
- Rpm package contains
  - The package itself
  - Metadata about the package
  - Dependencies of the package

Linux package management

- RPM (RedHat Package Manager)
  - RPM package files names consists of 4 elements
    - Name-version-release.architecture.rpm
    - To get your OS release
      - #cat /etc/redhat-release
    - To get your CPU arch
      - #uname –a

  - RPM used to install a package which already downloaded without any dependencies
  - To download a package
    - #wget <package_URL>
- YUM (Yellowdog Updater, Modified)
  - Its designed to be a better system for managing rpm-based packages
  - Its used to download and install any package with all its dependencies
  - It uses repository concept.
    - Starting from RHEL8, there are 2 main repos
      - BaseOS (all OS related packages)
      - AppStream (any other packages)
- Dnf (Dandified YUM)
  - is the next-generation version of the yum



RPM

- rpm -i <pck_name> OR rpm --install <pck_name>
- rpm -ivh <pck_name> (install verbose installation progress hash ###)
- rpm --install --nodeps <pck_name> ➔ ignore dependency checks
- rpm --install --force <pck_name> ➔ force the installation, even if there are conflicts or problems.
- rpm -U <pck_name> ➔ upgrade the pck (if it's installed,update it and if not installed,install it then update)
- rpm -F <pck_name>➔ fresh the pck (if it's installed, update it and if not installed, no actions)
- rpm -e <pck_name> OR rpm --erase <pck_name> ➔ uninstall pck

YUM

- yum list ➔ print all installed packages
- yum search <keyword> ➔ list all package which contain this keyword in the name or summary fields only
- yum info <pck_name> ➔ print information about pck
- yum install <pck_name> ➔ to install package and its dependencies
- Yum provides <dir_path> ➔ to know this dir is related to which package
- yum update <pck_name>
  - Checks for updates to package metadata (e.g., information about available packages, their versions, and dependencies) from configured repositories.
  - Does not install any new packages.
  - Updates the local package database to reflect the latest available versions.
- yum upgrade <pck_name>
  - Installs the latest versions of packages that are already installed on your system, based on the updated metadata obtained from #dnf update
- #yum remove <pck_name>
- yum localinstall <pck_name>➔ install a downloaded pck with it’s dependencies

dnf

Task:	Command:
List installed and available packages by name.	`dnf list [NAME-PATTERN]`
List installed and available groups.	`dnf group list`
Search for a package by keyword.	`dnf search KEYWORD`
Show details of a package.	`dnf info PACKAGENAME`
Install a package.	`dnf install PACKAGENAME`
Install a package group.	`dnf group install GROUPNAME`
Update all packages.	`dnf update`
Remove a package.	`dnf remove PACKAGENAME`
Display transaction history.	`dnf history`

Repositories

- #dnf repolist ➔ to list all enabled repos
- #dnf repolist all ➔ to list all enabled and disabled packages
- #dnf repolist --verbose ➔ to list more info about repos
- #dnf --repo=epel search <mypackage> ➔ search for package in specific repo
- #dnf --disablerepo="repo1,repo2" search <mypackage>
- #dnf list --available --repo <repo-name> ➔ list all packages in specific repo
- #dnf repository-packages <repo-name> list –installed ➔ to list all installed pck from specific repo
- /etc/yum.repos.d ➔
  - the dir which contain all .repo files which contain all repos
  - Each file contain one or more repos
  - Each section in this file represent a repo
- To enable a specific repo
  - #dnf config-manager --enable <repo_id>
  - #dnf config-manager --disable <repo_id>

Own local repo

- #mkdir /myrepo
- #cp /media/DVD_name/Packages /myrepo
- #chmod -R 755 /myrepo
- #createrepo /myrepo

- vi /etc/yum.repos.d/ownrepos.repo
  [ownrepos]
  name=that's my own repos
  baseurl=file:///myrepo
  gpgcheck=0 (not check from redhat or from any)
  enabled=1

- #yum clean all ➔ clean up the yum cache
- #yum repolist ➔ to list all system repos

Controlling services and demons

- Systemd is the first process to start (PID1).
- Listing service units
  - #systemctl list-units --type=service ➔ to list all services
  - #systemctl --failed --type=service ➔ to list all failed services
  - #systemctl status sshd.service ➔ to check status of specific service
- Controlling system services
  - # systemctl start sshd.service #systemctl stop sshd.service
  - # systemctl enable sshd.service #systemctl disable sshd.service
  - #systemctl enable --now sshd.service
  - # systemctl restart sshd.service ➔ stop the service then start
  - systemctl reload sshd.service ➔ just reload the config files without stopping the service
- Masking and unmasking services
  - #systemctl mask httpd ➔ to **stop** the service and avoid to be started by mistake, no one can start it

    Created symlink /etc/systemd/system/httpd.service → /dev/null.
  - #systemctl start httpd

    Failed to start httpd.service: Unit httpd.service is masked.
  - #systemctl unmask httpd

    Removed "/etc/systemd/system/httpd.service".