**CHAPTER 12** **Managing Network**

**Topics covered:**

1. Networking concept

2. change network property using nmcli-GUI

3. change network property using nmcli

4. change network property using config file

5. name resolution (dns entries)

6. changing RHEL server hostname

7. IPv6 concept

--> unlimited ip address

--> 128 bits addressing

--> **NO MORE BROADCAST**

--> No need for DHCP server (We will still use DHCP server to manage allocation for ipv6)

--> SLAAC on the ipv6 configure router to dish out ipv6 addresses

--> new set of utilities (ping6, dhcp6, firewall-ipv6, netstat-6, etc)

**Network tools/utilities:**

1. "**ping"/"ping6**"

2. **ifconfig / "ip addr show"** --> information on --> ip address (ipv4, ipv6), netmask, MAC address, receive/transmit, mtu

3. **netstat / ss --**> looking apps, ports usage, session

4. **"route -n" / "ip route show"** --> information of gateway

5. **tracepath / traceroute** --> information on route LAN/WAN to see which route is down along with the network statistics

**Changing Network Properties:**

1. using nmcli-GUI

--> "nmcli-profile" or "nmcli-connections"

--> it provides simplification of maintaining network properties without having to constantly change your static ip address.

2. using nmcli command line (USE the **TAB** key for assistance)

3. using config file

--> found in "/etc/sysconfig/network-scripts/ifcfg-profile"

--> DNS information is also found in /etc/resolv.conf(priority in ifcfg-profile first)

--> local name resolution is also found in /etc/hosts

--> /etc/hosts vs /etc/resolv.conf [ local name resolution (/etc/hosts) vs using a valid DNS server (/etc/resolv.conf) ]

**Changing hostname:**

1. "hostnamectl set-hostname workstation7000.example.com"

2. "hostnamectl" cmd to verify

3. Modify the "/etc/hostname" config file

**CHAPTER 13** **Archiving and Transferring files**

**Topics covered:**

1. tar, gzip, bzip2 for compression and archiving

2. scp for secure remote copy

3. rsync for secure remote copy as well

4. sftp

**CHAPTER 14** **Installing and Updating Software Packages**

**Topics covered:**

1. Redhat Subscription Manager (rhsm)

2. Explaining and installing rpm packages

3. Installing packages using yum/dnf (dandyfied yum)

4. Enabling yum repositories

5. Package Module stream (New for RHEL 8.x)

**Red Hat Subscription Manager(rhsm):**

1. By default RHEL fresh installed OS without registering lacks features.

--> updates/patches, access to RHEL repositories (WAN), support

--> yum/dnf command doesn't work fully (can remove packages/apps but not install)

2. **RHSM** allows for registrations, obtain subscription information (entitlement).

3. Need to have an access.redhat.com (red hat network) account. Go to https://access.redhat.com to register a free account. Then pay for a subscription.

4. Once step 3 is done, then proceed on with rhsm on your RHEL server to register your RHEL server.

**Explaining and installing rpm packages:**

1. To install "**rpm -ivh package.rpm**"

2. To remove "**rpm -e packagename**"

3. To verify "**rpm -qa packagename**" --> to see if its install or not

4. To find the **package path** "**rpm -ql packagename**"

5. To find more info for that package "**rpm -qi packagename**"

\*However, rpm install method will produce "**dependencies error**"

--> what is dependencies? (all the other rpm packages that needs to be install before the desired package can be install)

--> this is the reason why RH started to implement "**yum/dnf**"

**Installing packages using yum/dnf (dandyfied yum):**

1. **yum/dnf solve dependencies issues**.

2. However yum requires rpm package "**repositories**".

--> repositories refers to "**rpm package container/folder**" that can be located within **LAN** or across **WAN** such those from **RH** after the registration using **rhsm**.

3. Repositories (local) can be setup manual.

--> for rh124 syllabus, the repositories containers are hosted with "content.example.com" VM. Which is also "classroom.example.com"

4. Repositories information and config files are found in **"/etc/yum.repos.d/\*.repo"**

5. To use yum install:

--> **"yum install packagename"**

6. To remove:

--> **"yum remove packagename"**

7. To find more info of a package

--> **"yum info packagename"**

**Enabling dnf repositories:**

1. "**yum repolist**"

2. "**yum config-manager --add-repo="https://dl.fedoraproject.org/pub/epel/9/Everything/x86\_64/"**

3. "**yum config-manager --enable/disable 'repository id'** "

**Package Module stream (New for RHEL 8.x)**

1. is made of "AppsStream" AND "BaseOS"

2. simplify installation of apps with many version

3. using the command "**yum module install postgresql:9.6**"