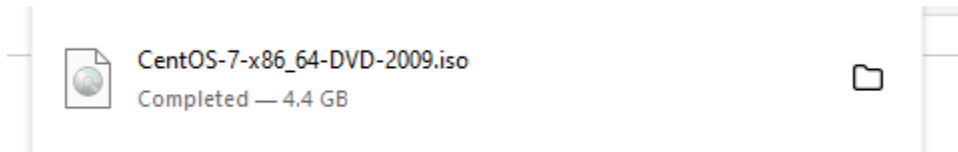


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| Instructor: Dr. Jonathan Taylor | Semester and SY: 1st Semester |
| Activity 3: Install SSH server on CentOS or RHEL 8 | |
| 1. Objectives: 1.1 Install Community Enterprise OS or Red Hat Linux OS 1.2 Configure remote SSH connection from remote computer to CentOS/RHEL-8 | |
| 2. Discussion: CentOS vs. Debian: Overview CentOS and Debian are Linux distributions that spawn from opposite ends of the candle. CentOS is a free downstream rebuild of the commercial Red Hat Enterprise Linux distribution where, in contrast, Debian is the free upstream distribution that is the base for other distributions, including the Ubuntu Linux distribution. As with many Linux distributions, CentOS and Debian are generally more alike than different; it isn't until we dig a little deeper that we find where they branch. CentOS vs. Debian: Architecture The available supported architectures can be the determining factor as to whether a distro is a viable option or not. Debian and CentOS are both very popular for x86_64/AMD64, but what other archs are supported by each? Both Debian and CentOS support AArch64/ARM64, armhf/armhfp, i386, ppc64el/ppc64le. (Note: armhf/armhfp and i386 are supported in CentOS 7 only.) CentOS 7 additionally supports POWER9 while Debian and CentOS 8 do not. CentOS 7 focuses on the x86_64/AMD64 architecture with the other archs released through the AltArch SIG (Alternate Architecture Special Interest Group) with CentOS 8 supporting x86_64/AMD64, AArch64 and ppc64le equally. Debian supports MIPSel, MIPS64el and s390x while CentOS does not. Much like CentOS 8, Debian does not favor one arch over another—all supported architectures are supported equally. CentOS vs. Debian: Package Management Most Linux distributions have some form of package manager nowadays, with some more complex and feature-rich than others. CentOS uses the RPM package format and YUM/DNF as the package manager. Debian uses the DEB package format and dpkg/APT as the package manager. | |

Both offer full-feature package management with network-based repository support, dependency checking and resolution, etc.. If you're familiar with one but not the other, you may have a little trouble switching over, but they're not overwhelmingly different. They both have similar features, just available through a different interface.

Task 1: Download the CentOS or RHEL-8 image (Create screenshots of the following)

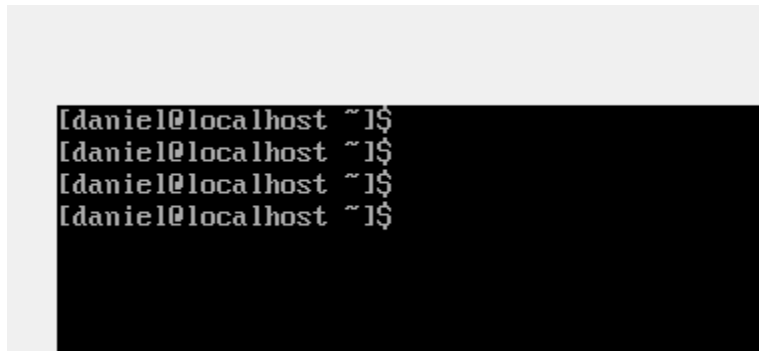
1. Download the image of the CentOS here:
http://mirror.rise.ph/centos/7.9.2009/isos/x86_64/



2. Create a VM machine with 2 Gb RAM and 20 Gb HD.



3. Install the downloaded image.
4. Show evidence that the OS was installed already.



Task 2: Install the SSH server package *openssh*

1. Install the ssh server package *openssh* by using the *dnf* command:

\$ dnf install openssh-server

Complete:

[root@localhost ~]# dnf install openssh-server

CentOS-7 - Base

2.2 MB/s | 10 MB

2. Start the *sshd* daemon and set to start after reboot:

\$ systemctl start sshd

\$ systemctl enable sshd

3. Confirm that the sshd daemon is up and running:

\$ systemctl status sshd

```
[root@localhost ~]# systemctl start sshd
[root@localhost ~]# systemctl enable sshd

[root@localhost ~]#
[root@localhost ~]# systemctl status sshd
● sshd.service - OpenSSH server daemon
   Loaded: loaded (/usr/lib/systemd/system/sshd.service; enabled; vendor p
   enabled)
   Active: active (running) since Tue 2023-08-29 06:00:24 EDT; 16min ago
     Docs: man:sshd(8)
           man:sshd_config(5)
   Main PID: 1058 (sshd)
    CGroup: /system.slice/sshd.service
            └─1058 /usr/sbin/sshd -D

Aug 29 06:00:24 localhost.localdomain systemd[1]: Starting OpenSSH server
Aug 29 06:00:24 localhost.localdomain sshd[1058]: Server listening on 0.0.0
Aug 29 06:00:24 localhost.localdomain sshd[1058]: Server listening on :: p
Aug 29 06:00:24 localhost.localdomain systemd[1]: Started OpenSSH server d
hint: Some lines were ellipsized, use -l to show in full.
```

4. Open the SSH port 22 to allow incoming traffic:

```
$ firewall-cmd --zone=public --permanent --add-service=ssh
$ firewall-cmd --reload
```

```
[daniel@localhost ~]$ firewall-cmd --zone=public --permanent --add-service=ssh
Warning: ALREADY_ENABLED: ssh
success
[daniel@localhost ~]$ firewall-cmd --reload
success
[daniel@localhost ~]$
```

5. Locate the ssh server man config file */etc/ssh/sshd_config* and perform custom configuration. Every time you make any change to the */etc/ssh/sshd-config* configuration file reload the *sshd* service to apply changes:

```
$ systemctl reload sshd
bash: systemctl: command not found...
[daniel@localhost ~]$ systemctl reload sshd
```

Task 3: Copy the Public Key to CentOS

1. Make sure that *ssh* is installed on the local machine.
2. Using the command *ssh-copy-id*, connect your local machine to CentOS.
3. On CentOS, verify that you have the *authorized_keys*.

Task 4: Verify ssh remote connection

1. Using your local machine, connect to CentOS using ssh.
2. Show evidence that you are connected.

Reflections:

Answer the following:

1. What do you think we should look for in choosing the best distribution between Debian and Red Hat Linux distributions?

Both Debian and Red hat focus on security, but Red Hat's main goal on enterprise security may be more appealing for businesses with high-security requirements.

2. What are the main difference between Debian and Red Hat Linux distributions?

Debian- Patches and security updates are actively managed, especially for the stable branch.

Red hat- Prioritizes security updates and provides extended support through the Red Hat security response team.

Conclusion:

Installing an SSH Server on CentOS is a straightforward process. You can use the package manager, either YUM or DNF command, to install the OpenSSH server package. After installation, ensure that the SSH service is enabled and running. Finally, configure any necessary firewall rules to allow SSH traffic, and you'll have a secure remote access solution for you CentOS system.