



CONESTOGA

Connect Life and Learning

Student Name:	Aagam Sanjay Shah
Deliverable:	In-Class Tasks Week 3 Assignment
Course Name:	NTWK8141-24S-Sec3-Linux Server

Date Assigned:	22/05/2024
Date Due:	23/05/2024
Rules:	<ul style="list-style-type: none">• Individual.• Cheating is not allowed.• Plagiarism counts as cheating!• That FAILURE to submit work in the course can result in a grade of 'F' or 'I' for failure to complete the course!

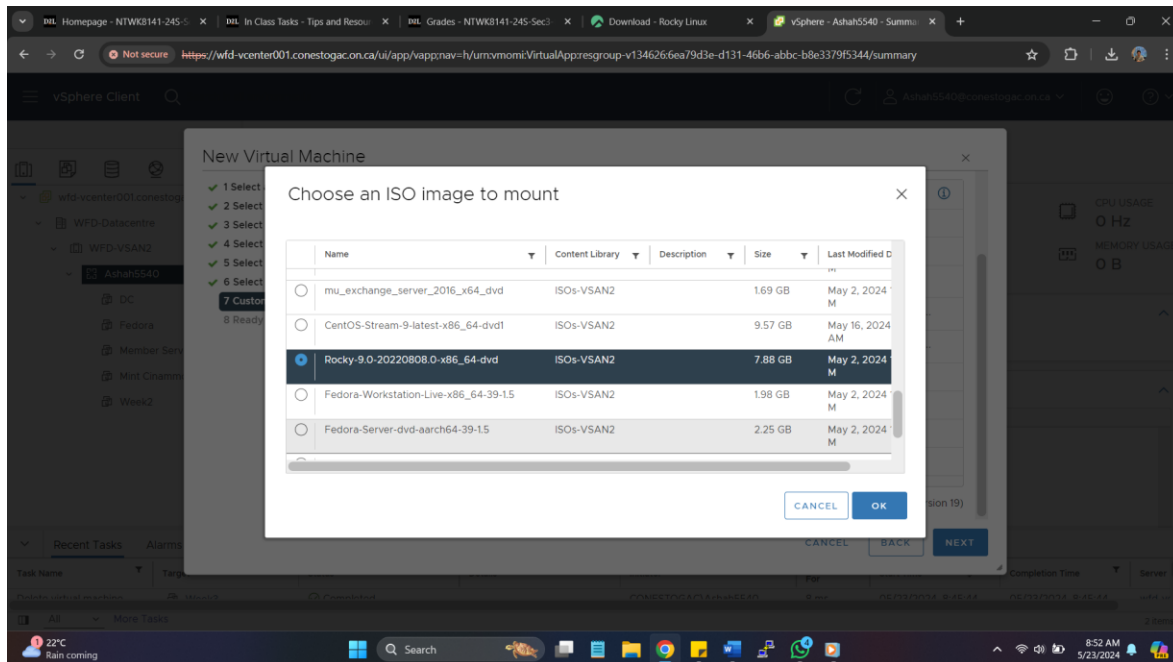
VM Link: <https://wfd-vcenter001.conestogac.on.ca/ui/webconsole.html?vmId=vm-138198&vmName=Week3&numMksConnections=0&serverGuid=6ea79d3e-d131-46b6-abbcb8e3379f5344&locale=en-US>

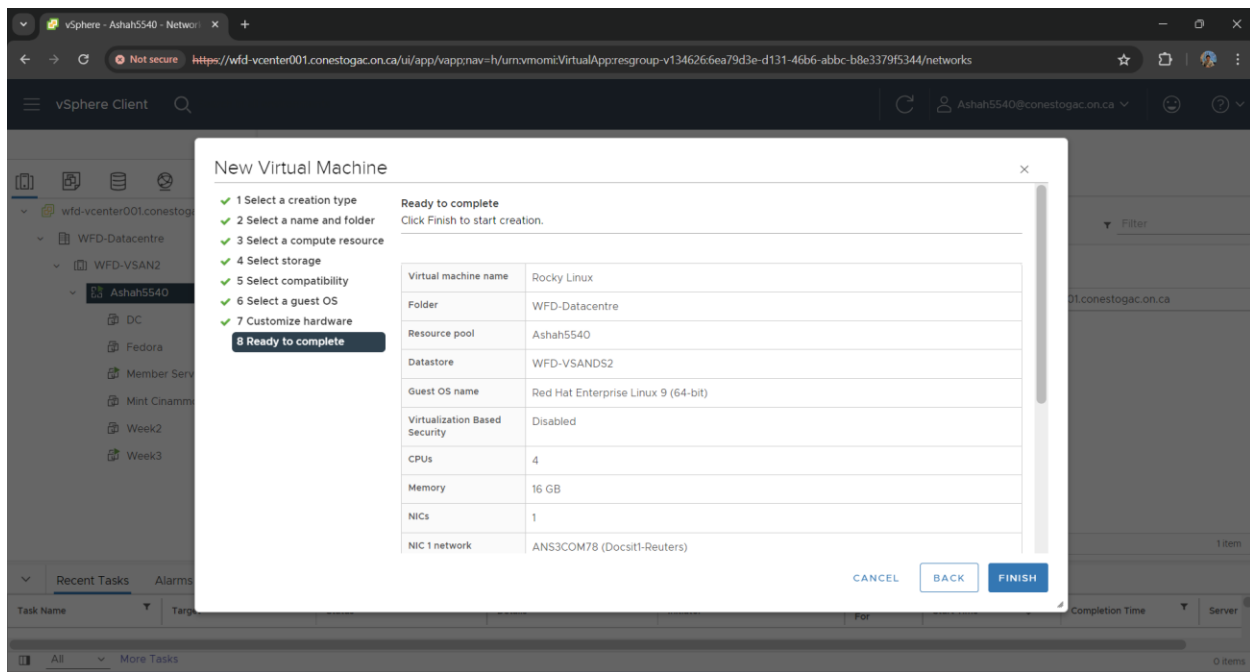
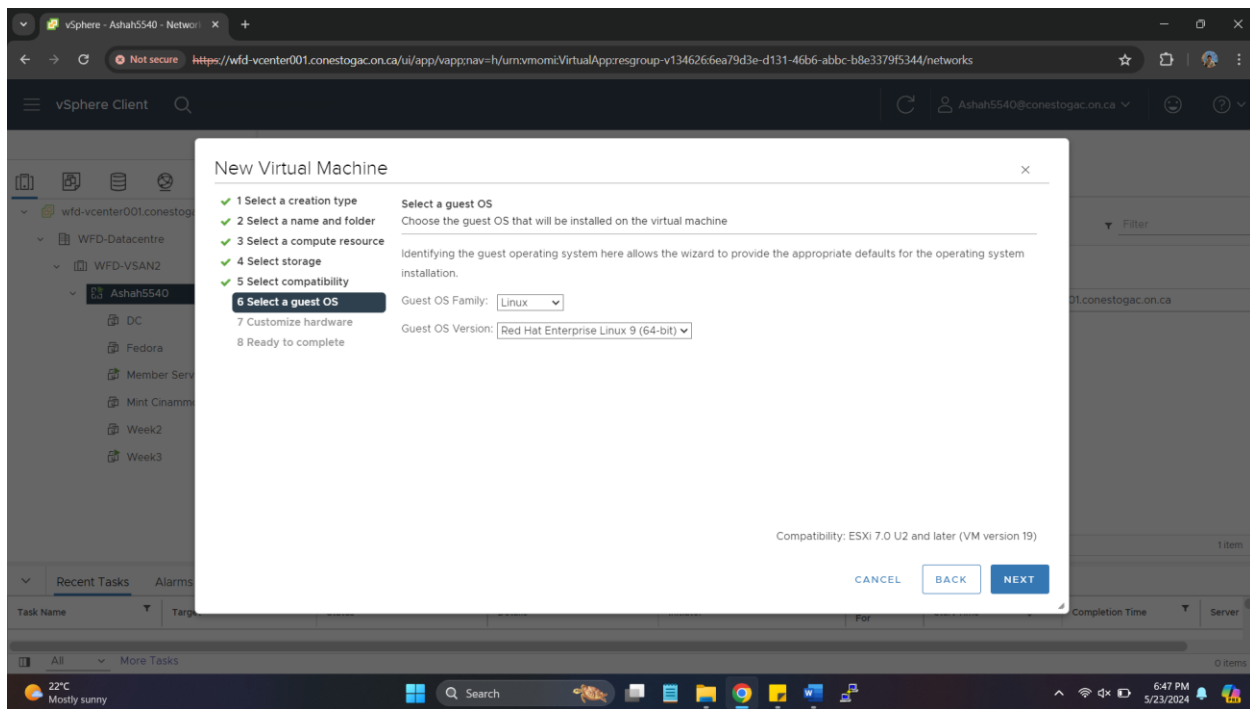
IP address: 172.23.78.13

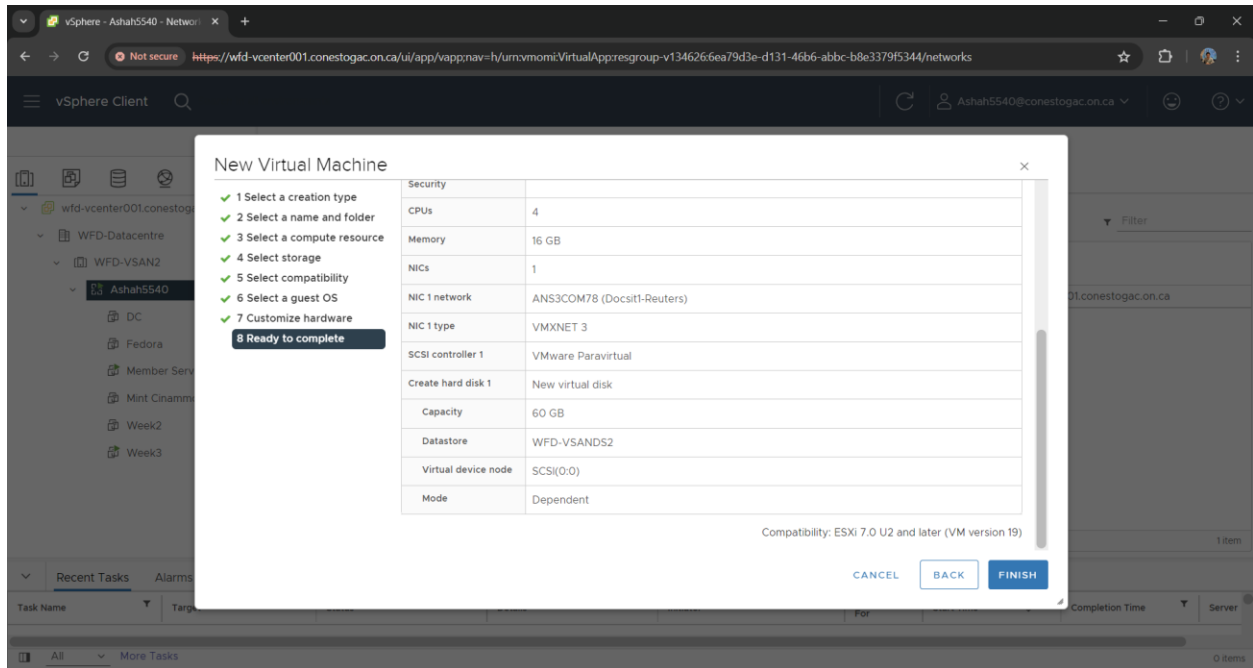
Subnet mask: 255.255.255.0

Gateway: 172.23.78.1

Com Port: ANS3COM78







Hardware Requirements

Go to the official websites and find the minimum and recommended hardware requirements for the latest stable releases of following:

1. Red Hat Desktop
2. Red Hat headless
3. Rocky Linux
4. Fedora

1. Red Hat Desktop → https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/9/html/configuring_and_managing_virtualization/assembly_enabling-virtualization-in-rhel-9_configuring-and-managing-virtualization

Maximum memory

The architectural limits are based on the capabilities of the Red Hat Enterprise Linux kernel and the physical hardware. Red Hat Enterprise Linux 6 limit is based on 46-bit physical memory addressing. Red Hat Enterprise Linux 5 limit is based on 40-bit physical memory addressing. All system memory should be balanced across NUMA nodes in a NUMA-capable system.

Architecture	RHEL 6	RHEL 7	RHEL 8	RHEL 9
x86	16GB	N/A ¹	N/A ¹	N/A ¹
x86_64	12TB [64TB] ⁷	12TB [64TB] ⁸	24TB [64TB]	48TB [64TB]
Power	2TB	32TB ⁹	POWER8: 32TB [128TB] POWER9: 64TB [128TB] ¹⁰ Power10: 64TB [128TB] ¹¹	POWER9: 64TB [128TB] Power10: 64TB [128TB] ¹¹
IBM Z	z13: 4TB	z13: 10TB	z13: 10TB z14: 16TB z15: 16TB z16: 32TB	z14: 16TB z15: 16TB z16: 32TB
ARM	N/A	N/A	1.5TB [256TB]	1.5TB [256TB]
Maximum x86 per-process virtual address space	Approx. 3GB	N/A ¹	N/A ¹	N/A ¹
Maximum x86_64 per-process virtual address space	128TB	128TB	128TB	128TB
Maximum Power per-process virtual address space	--	--	4PB ¹²	4PB ¹²

access.redhat.com/documentation/en-us/red_hat_enterprise_linux/9/html/tuning_performance_in_identity_management/hardware-recommendations_tuning-performance-in-idm

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Red Hat Customer Portal Products Knowledge Security Support

Products & Services > Product Documentation > Red Hat Enterprise Linux > 9 > Tuning performance in Identity Management > Chapter 2. Hardware recommendations

Expand all Collapse all

Tuning performance in Identity Management

Making open source more inclusive

Providing feedback on Red Hat documentation

1. Important considerations when tuning IdM

2. Hardware recommendations

3. IdM server performance recommendations

4. Failover, load-balancing, and high-availability in IdM

5. Optimizing the replica topology

Chapter 2. Hardware recommendations

RAM is the most important hardware feature to size properly. Make sure your system has enough RAM available. Typical RAM requirements are:

- For 10,000 users and 100 groups: at least 4 GB of RAM and 4 GB swap space
- For 100,000 users and 50,000 groups: at least 16 GB of RAM and 4 GB of swap space

For larger deployments, it is more effective to increase the RAM than to increase disk space because much of the data is stored in cache. In general, adding more RAM leads to better performance for larger deployments due to caching.

Note

A basic user entry or a simple host entry with a certificate is approximately 5–10 kB in size.

Focus mode

Language: English

Format: Multi-page

3. Rocky Linux → <https://rockylinux.org/>

<https://forums.rockylinux.org/t/what-are-minimal-and-recommended-hardware-requirements-for-cloud-images/7062>

forums.rockylinux.org/t/what-are-minimal-and-recommended-hardware-requirements-for-cloud-images/7062

Rocky Linux Sign Up Log In

What are minimal and recommended hardware requirements for cloud images

Rocky Linux General

randomizer30001 Aug 2022

Hi all. Could someone share what are minimal and recommended hardware/system requirements for Rocky 8 and Rocky 9 cloud images?

Solved by iwalker in post #2

Both Rocky8 and Rocky9 have a minimum memory requirement of 1.5GB irrespective of whether it's an installation on normal hardware, VM, etc. This is the same as the hardware requirements for RHEL8 and RHEL9: <https://access.redhat.com/articles/rhel-limits> You might be able to get it to work with 1G...

created last reply 3 replies 7.1k views 2 users 2 likes 1 link

Aug 2022 Aug 2023

iwalker Community Team Aug 2022

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<https://access.redhat.com/articles/rhel-limits>

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Power	2TB	32TB ⁹	POWER8: 32TB [128TB] POWER9: 64TB [128TB] ¹⁰ Power10: 64TB [128TB] ¹¹	POWER9: 64TB [128TB] Power10: 64TB [128TB] ¹¹
IBM Z	z13: 4TB	z13: 10TB	z13: 10TB z14: 16TB z15: 16TB z16: 32TB	z14: 16TB z15: 16TB z16: 32TB
ARM	N/A	N/A	1.5TB [256TB]	1.5TB [256TB]
Maximum x86 per-process virtual address space	Approx. 3GB	N/A ¹	N/A ¹	N/A ¹
Maximum x86_64 per-process virtual address space	128TB	128TB	128TB	128TB
Maximum Power per-process virtual address space	--	--	4PB ¹²	4PB ¹²

4. Fedora → <https://fedoraproject.org/>

https://docs.fedoraproject.org/en-US/workstation-docs/#_system_requirements

Docs

Fedora Workstation Documentation

Software Repositories & Tools

Disk Configuration

Problem Solving & Issue Reporting

System Requirements

To have a good experience, hardware with a 40GB SSD disk and 4GB RAM is recommended for Fedora Workstation. However, it is possible to use hardware with lower specifications.

Workstation images are available for x86_64 and aarch64 architectures, providing support for Intel, AMD and ARM processors.

Getting Workstation

Fedora Workstation comes preinstalled on a number of hardware options. It can also be manually installed using a USB flash drive. The [Fedora Workstation download page](#) provides information on how to do this.

What's Included

Workstation is built from open source components, many of which are shared with other Fedora Editions and Spins. Key components include the Linux kernel, systemd, DNF, the Wayland display server, the Pipewire multimedia server, NetworkManager, the GNOME Desktop, and the Firefox browser. Each of these components are carefully integrated and tested, to work together as part of a seamless experience.

en-US

Contents

User Help

Overview

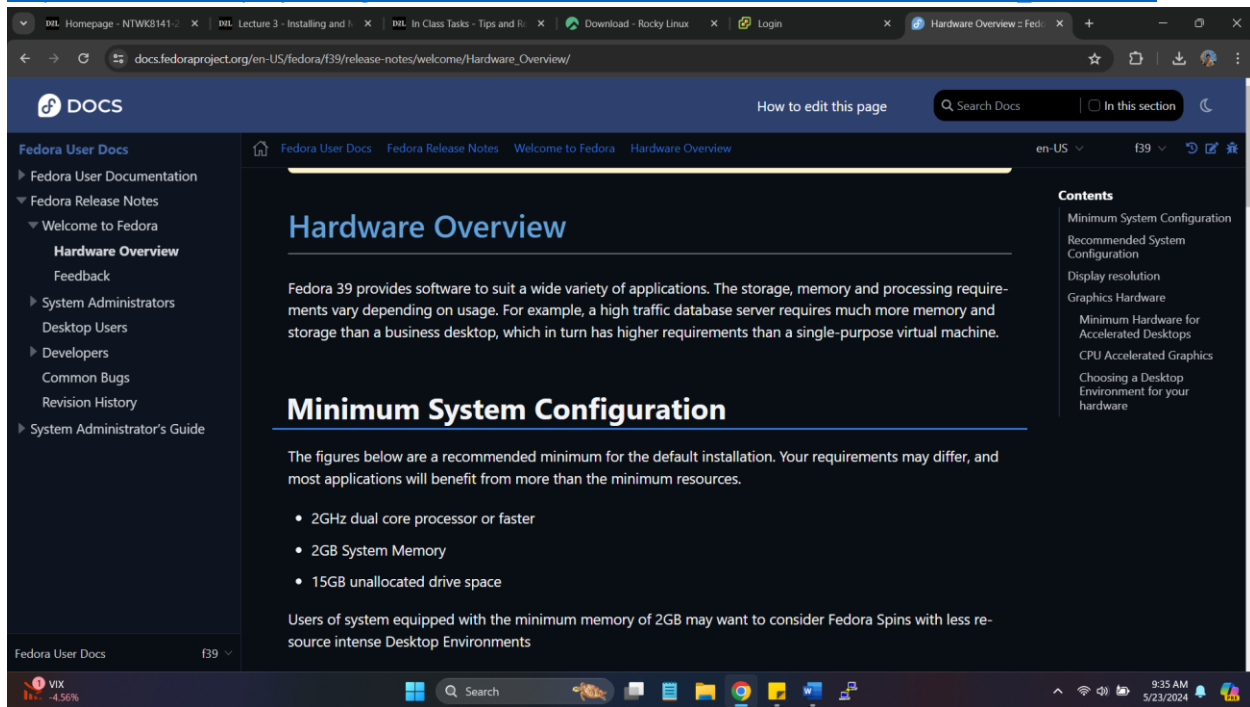
System Requirements

Getting Workstation

What's Included

Getting Involved

https://docs.fedoraproject.org/en-US/fedora/f39/release-notes/welcome/Hardware_Overview/

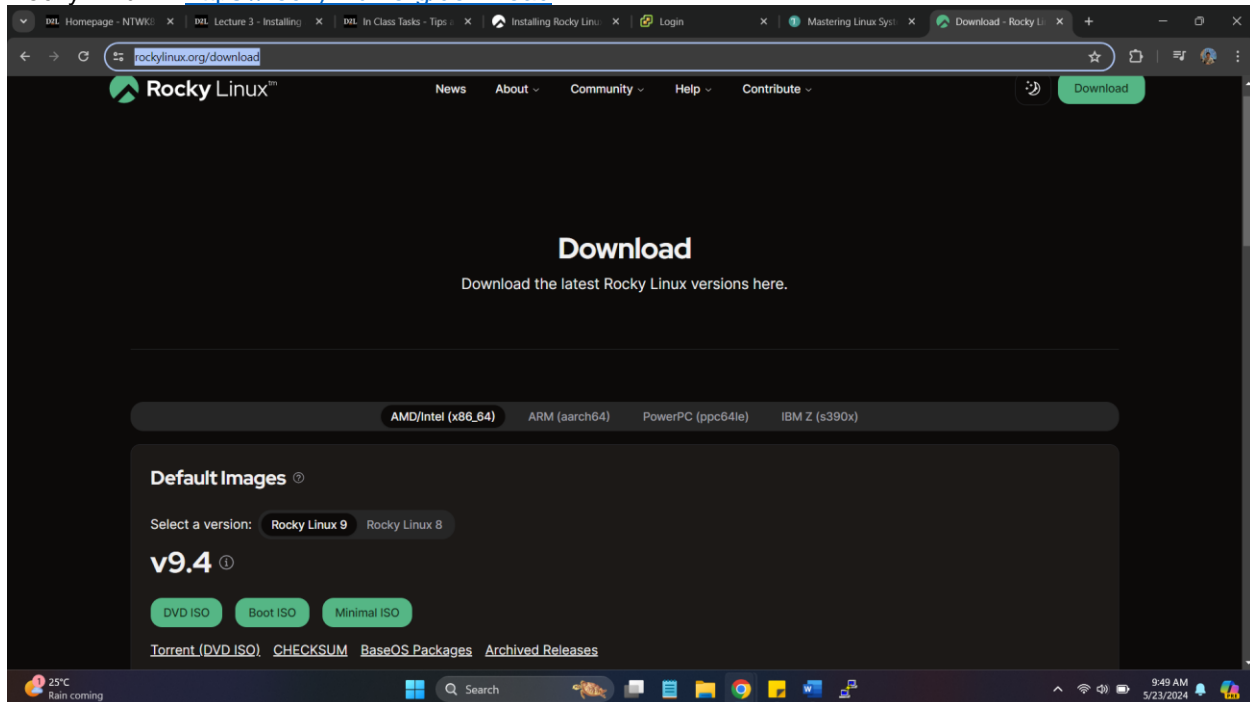


Verifying and installation media download:

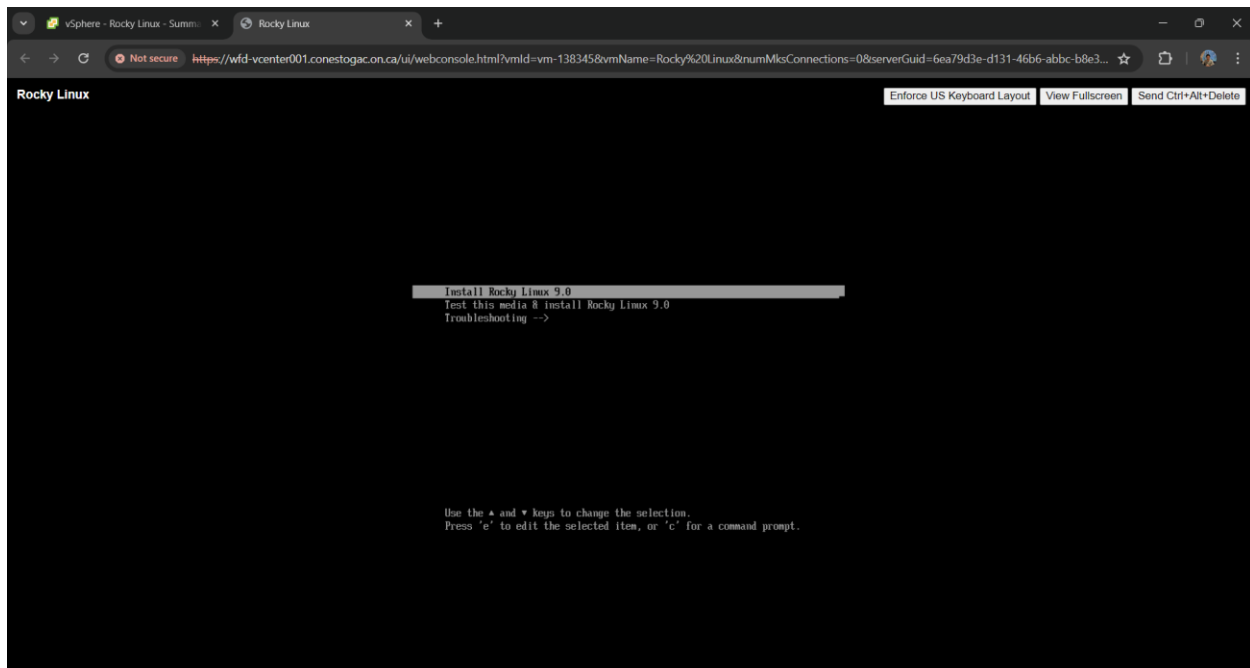
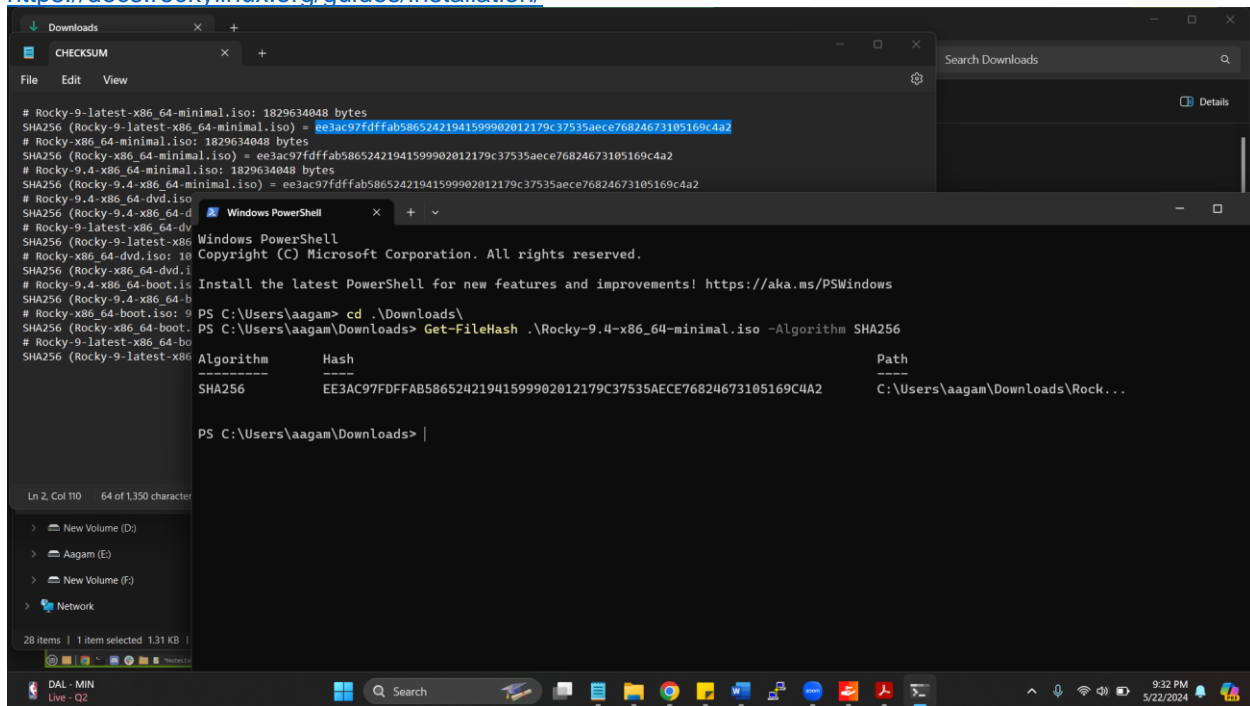
Complete the Real World Scenario: Chapter 2, "Checking the CentOS ISO Image File" for the latest version of CentOS

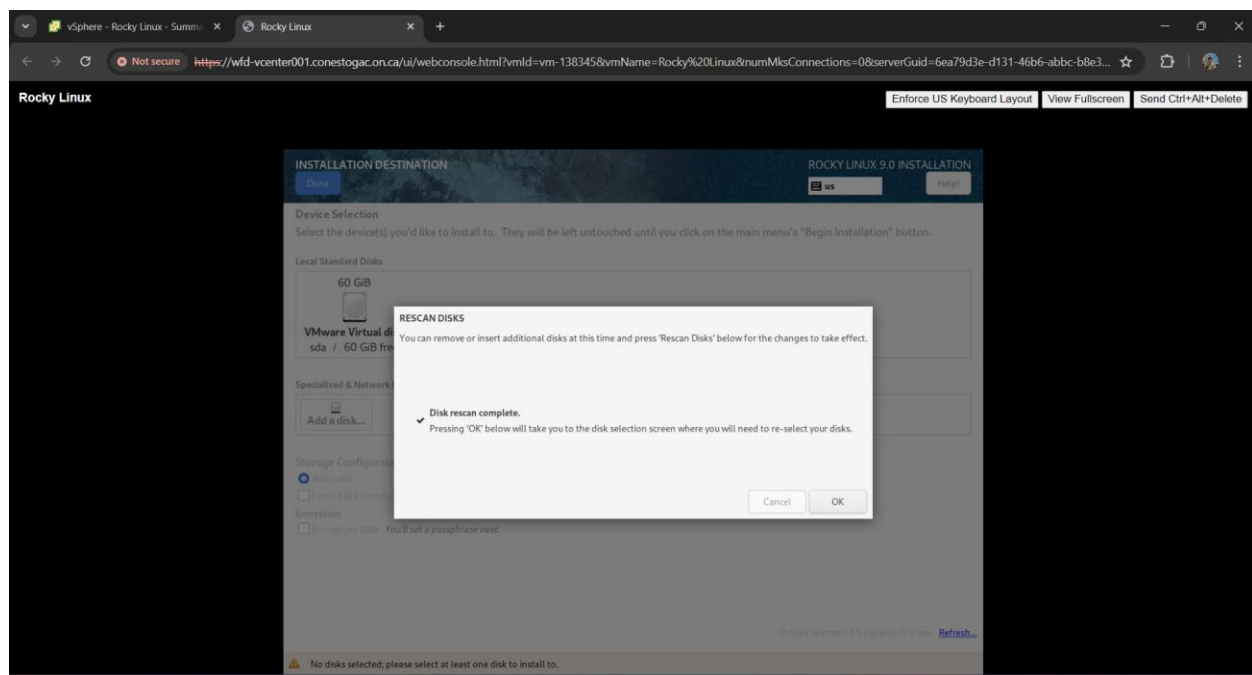
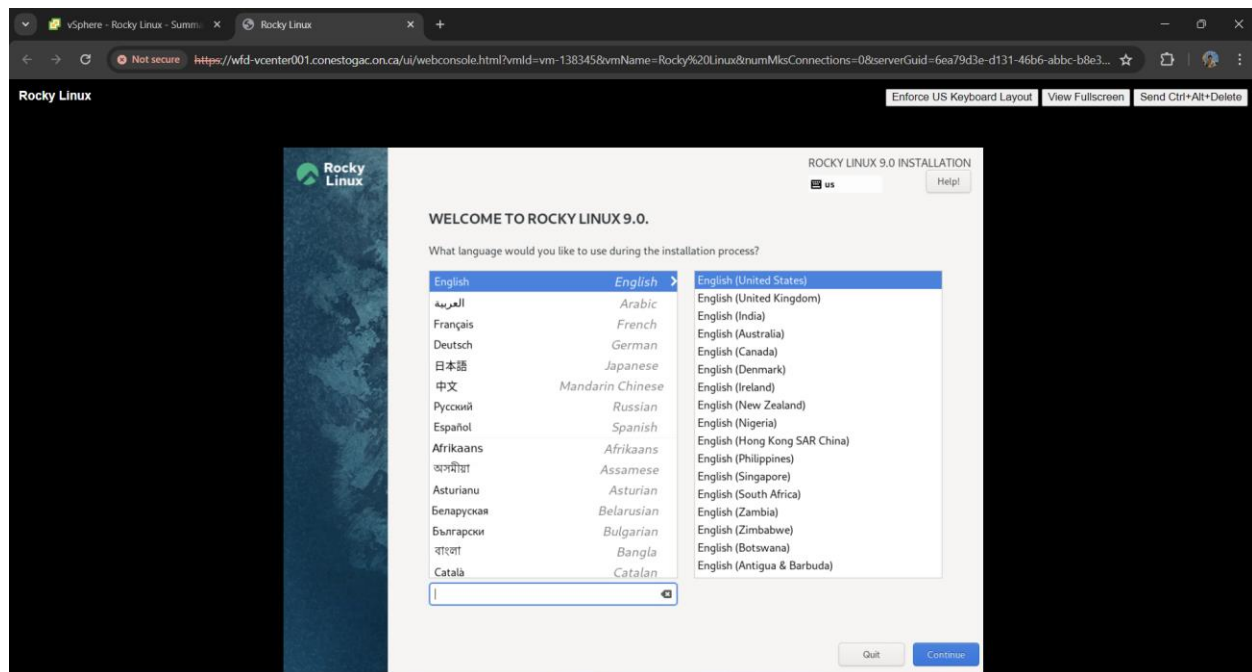
- You will need a VM of Linux Mint, Windows 10 or another OS with SHA256 hash capability.

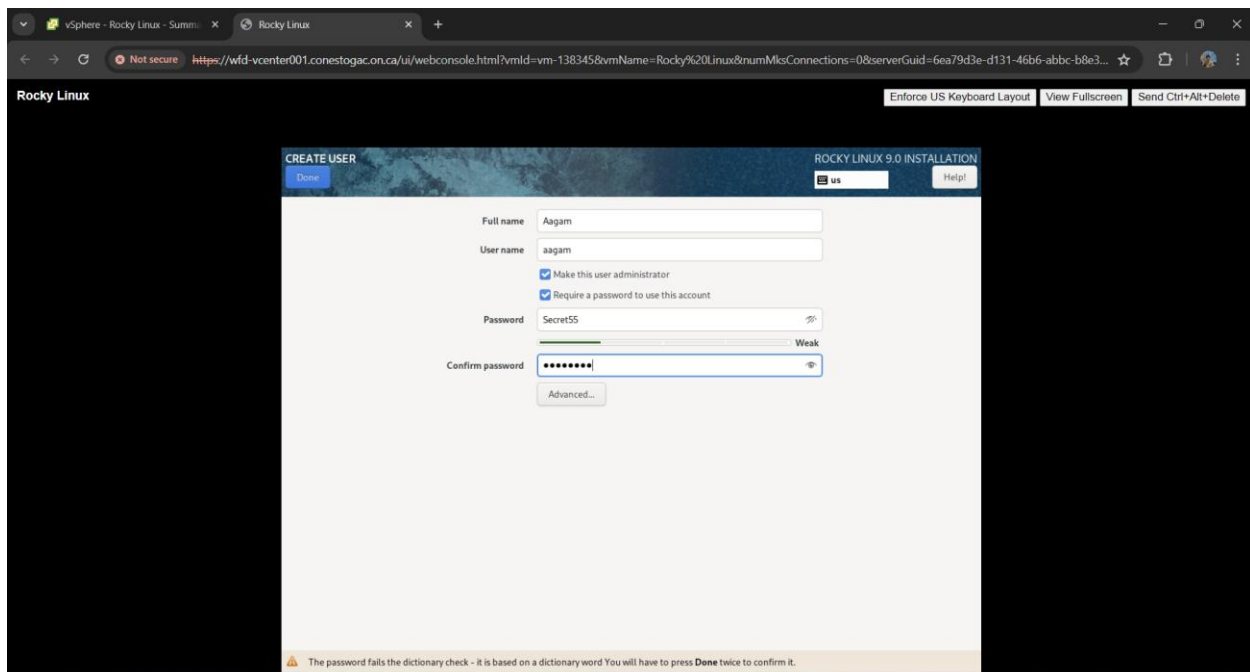
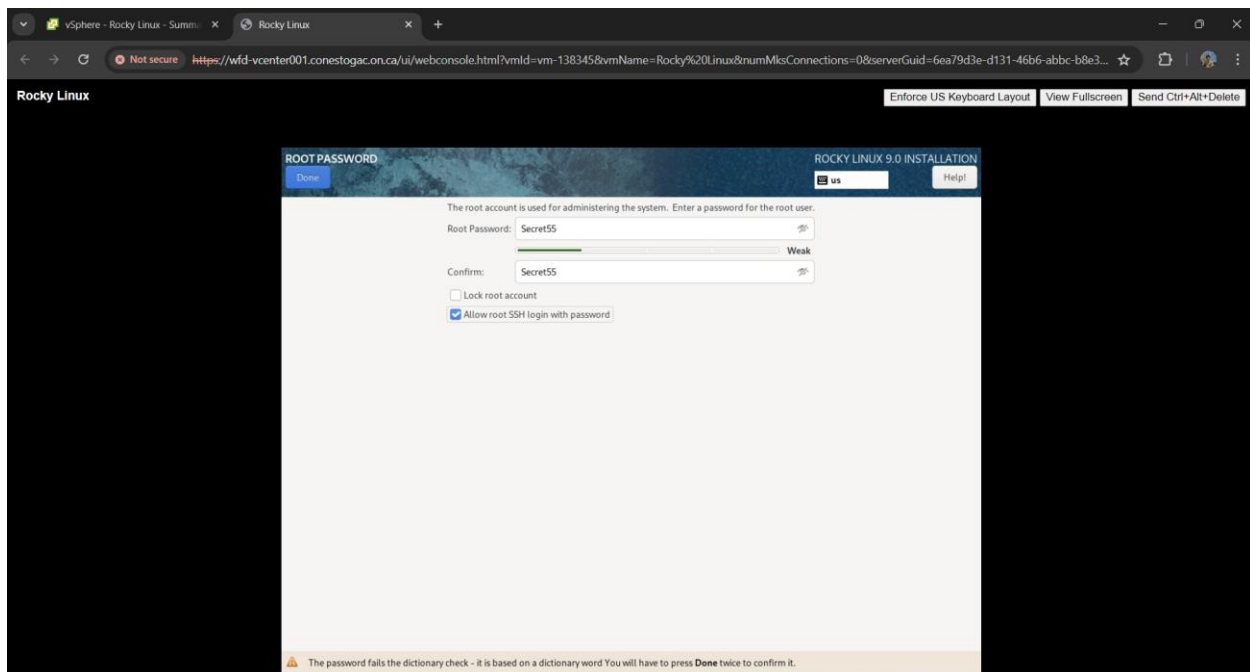
Rocky Linux → <https://rockylinux.org/download>

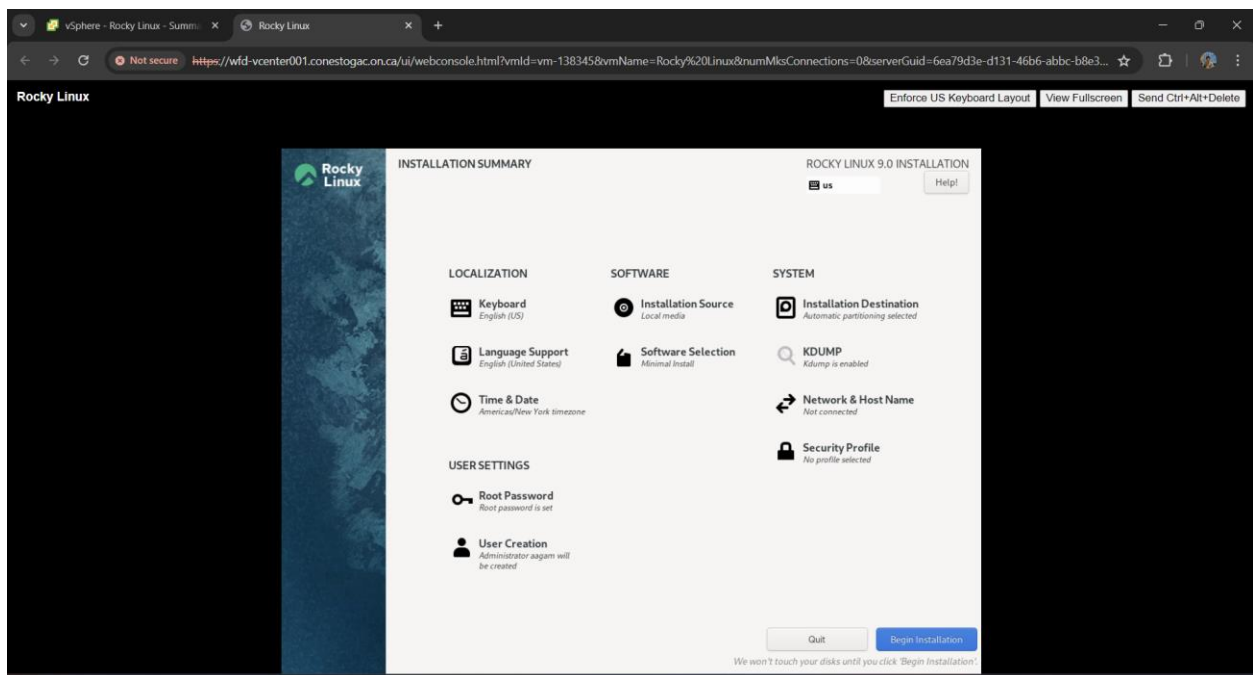
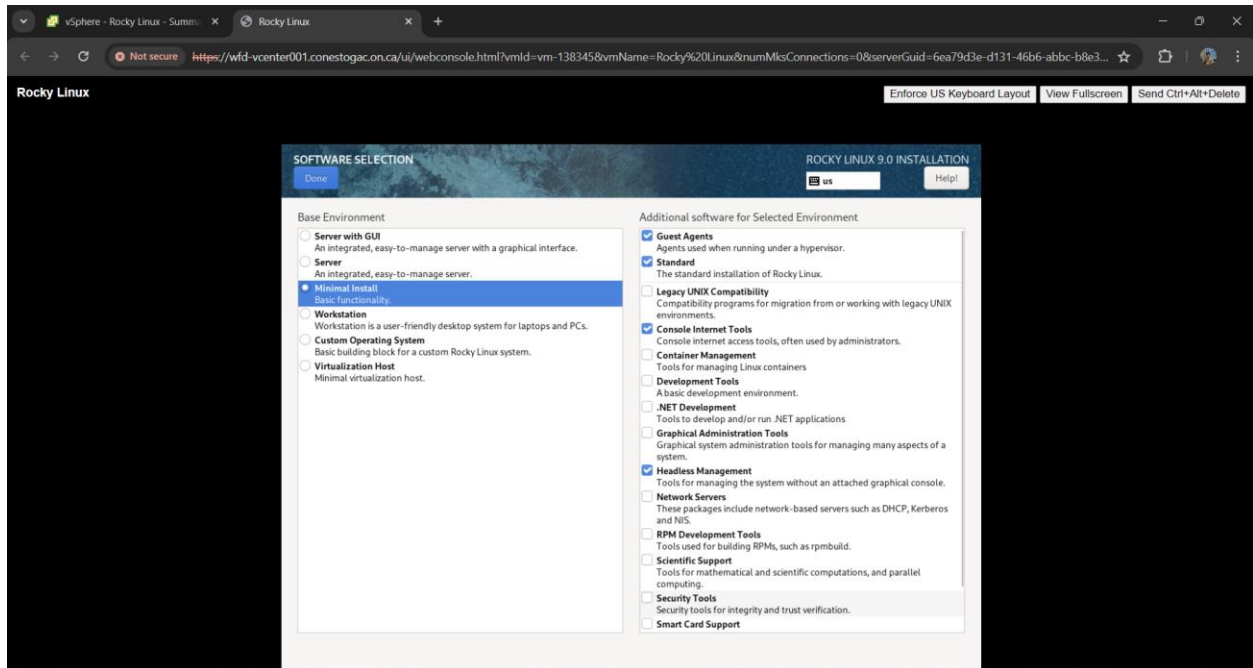


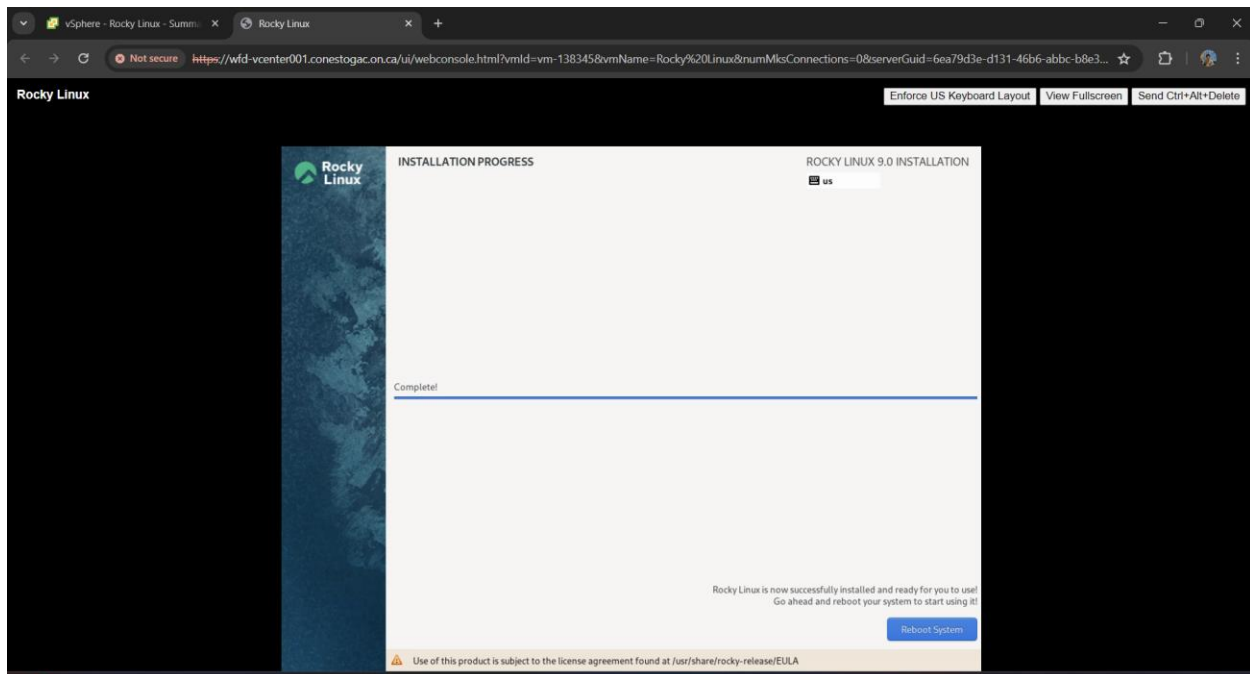
<https://docs.rockylinux.org/guides/installation/>





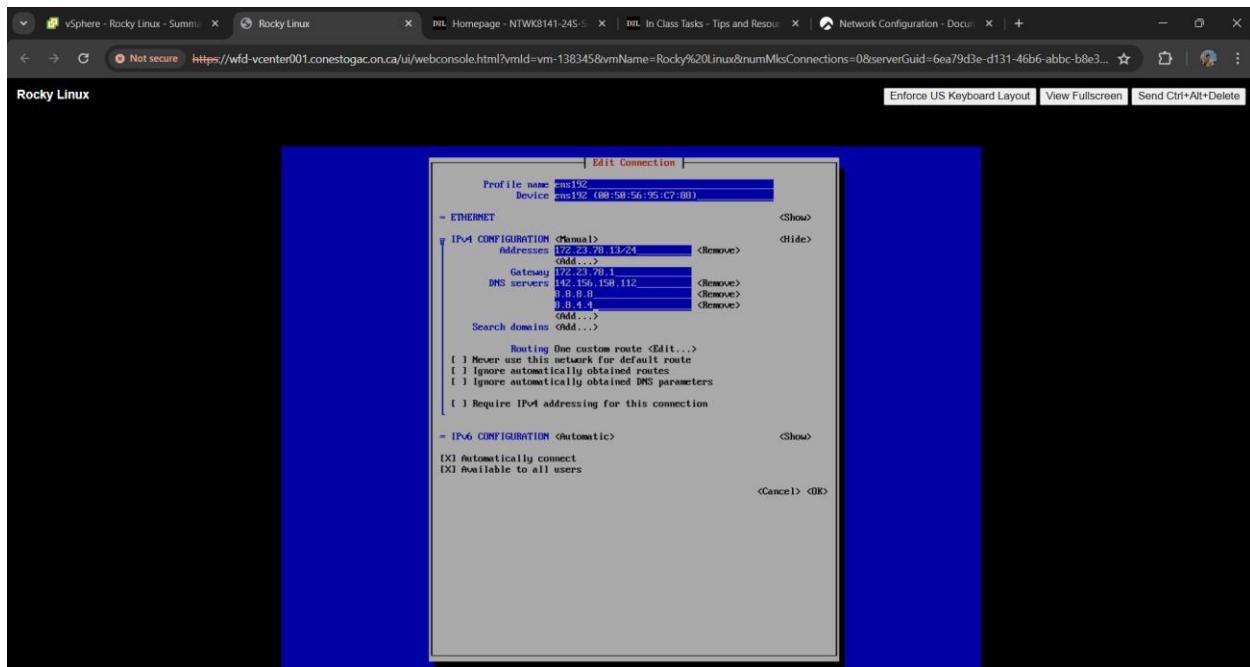






/etc/NetworkManager/system-connections/enp192.nmconnection

nmtui



```
vSphere - Rocky Linux - Summ... X Rocky Linux X MIT: Homepage - NTW8141-245... X MIT: In Class Tasks - Tips and Reso... X Network Configuration - Docu... X +
Not secure https://wfd-vcen001.conestogac.on.ca/ui/webconsole.html?vmId=vm-138345&vmName=Rocky%20Linux&numMksConnections=0&serverGuid=6ea79d3e-d131-46b6-abb6-b8e3...
Rocky Linux Enforce US Keyboard Layout View Fullscreen Send Ctrl+Alt+Delete

Rocky Linux 9.0 (Blue Onyx)
Kernel 5.14.0-70.17.1.el9_0.x86_64 on an x86_64

Activate the web console with: systemctl enable --now cockpit.socket

Hint: Run Lock on

localhost login: aaqam
Password:
Last login: Thu May 23 19:05:51 on tty1
[aaqam@localhost ~]$ ping 0.0.0.0
PING 0.0.0.0 (0.0.0.0) 56(04) bytes of data:
64 bytes from 0.0.0.0: icmp_seq=1 ttl=112 time=5.83 ms
64 bytes from 0.0.0.0: icmp_seq=2 ttl=112 time=5.28 ms
64 bytes from 0.0.0.0: icmp_seq=3 ttl=112 time=5.29 ms
^C
--- 0.0.0.0 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2803ms
rtt min/avg/max/mdev = 5.284/5.442/5.834/0.273 ms
[aaqam@localhost ~]$ ping 172.23.70.1
PING 172.23.70.1 (172.23.70.1) 56(04) bytes of data:
64 bytes from 172.23.70.1: icmp_seq=1 ttl=64 time=0.305 ms
64 bytes from 172.23.70.1: icmp_seq=2 ttl=64 time=0.243 ms
64 bytes from 172.23.70.1: icmp_seq=3 ttl=64 time=0.293 ms
64 bytes from 172.23.70.1: icmp_seq=4 ttl=64 time=0.248 ms
^C
--- 172.23.70.1 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3060ms
rtt min/avg/max/mdev = 0.240/0.440/0.305/0.315 ms
[aaqam@localhost ~]$ ping www.google.com
PING www.google.com (142.251.41.36) 56(04) bytes of data:
64 bytes from ygs12s80-in-f4.1e100.net (142.251.41.36): icmp_seq=1 ttl=112 time=7.45 ms
64 bytes from ygs12s80-in-f4.1e100.net (142.251.41.36): icmp_seq=2 ttl=112 time=7.38 ms
64 bytes from ygs12s80-in-f4.1e100.net (142.251.41.36): icmp_seq=3 ttl=112 time=7.58 ms
64 bytes from ygs12s80-in-f4.1e100.net (142.251.41.36): icmp_seq=4 ttl=112 time=7.29 ms
^C
--- www.google.com ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3095ms
rtt min/avg/max/mdev = 7.291/7.483/7.455/0.877 ms
[aaqam@localhost ~]$ _
```

In-Class Task: dnf

- Complete Ch 5 Real World Scenario
- “Installing Software Using dnf”

sudo dnf upgrade --refresh

```
rtt min/avg/max/mdev = 7.291/7.483/7.455/0.877 ms
[aaqam@localhost ~]$ sudo dnf upgrade --refresh

We trust you have received the usual lecture from the local System
Administrator. It usually boils down to these three things:

#1) Respect the privacy of others.
#2) Think before you type.
#3) With great power comes great responsibility.

[sudo] password for aaqam:
```

```
Rocky Linux

Enforce US Keyboard Layout View Fullscreen Send Ctrl+Alt+Delete

tzdata x86_64 2024a-1.e19 basoon 430 k
adisk2 x86_64 2.9.4-9.e19 appstream 471 k
adisk2-iscsi x86_64 2.9.4-9.e19 appstream 26 k
adisk2-lvm2 x86_64 2.9.4-9.e19 appstream 42 k
unbound-libs x86_64 1.16.2-3.e19.3.5 appstream 540 k
usbutils x86_64 015-1.e19 basoon 115 k
util-linux x86_64 2.37.4-10.e19 basoon 2.2 M
util-linux-core x86_64 2.37.4-10.e19 basoon 437 k
util-linux-user x86_64 2.37.4-10.e19 basoon 30 k
vim x86_64 0.2.2-2.1.e19 basoon 180 k
vim-common x86_64 2:0.2.2-2637-20.e19.1 appstream 0.6 M
vim-enhanced x86_64 2:0.2.2-2637-20.e19.1 appstream 1.0 M
vim-flangstem x86_64 2:0.2.2-2637-20.e19.1 basoon 14 k
vim-minimal x86_64 2:0.2.2-2637-20.e19.1 basoon 624 k
virt-what x86_64 1.25-5.e19 basoon 33 k
uebb12g1k3-jsc x86_64 2.42.5-1.e19 appstream 3.6 M
which x86_64 2.21-29.e19 basoon 40 k
xfce x86_64 3.1.12-4.e19.3 basoon 321 k
xfce x86_64 6.3.0-1.e19 basoon 1.1 M
gnome x86_64 2.1.0-22.e19 appstream 37 k
gnome x86_64 4.14.0-9.e19 basoon 88 k
zip x86_64 3.0-35.e19 basoon 253 k
zlib x86_64 1.2.11-40.e19 basoon 98 k

Installing dependencies:
adobe-source-code-pro-fonts noarch 2.030.1.050-12.e19.1 basoon 831 k
grub2-tools-efi x86_64 1:2.06-77.e19 basoon 540 k
grub2-tools-extra x86_64 1:2.06-77.e19 basoon 540 k
khd-legacy noarch 2.4.0-9.e19 basoon 582 k
kernel-core x86_64 5.14.0-427.16.1.e19.4 basoon 21 M
kernel-modules x86_64 5.14.0-427.16.1.e19.4 basoon 79 M
kernel-modules-core x86_64 5.14.0-427.16.1.e19.4 basoon 33 M
libbtrfs x86_64 1.5.2-0.e19 appstream 27 k
libatomic x86_64 11.4.1-3.e19 basoon 33 k
libbrotli x86_64 1.6-1.e19 basoon 96 k
liburing x86_64 2.5-1.e19 appstream 30 k
python3-distro x86_64 1.5.0-7.e19 appstream 36 k
python3-gobject-base-noarch noarch 3.40.1-6.e19 basoon 152 k
python3-pygame x86_64 5.4.1-6.e19 basoon 191 k
Installing weak dependencies:
python3-file-magic noarch 5.39-16.e19 appstream 17 k

Transaction Summary
*****
Install 16 Packages
Upgrade 444 Packages

Total download size: 700 M
Is this ok [y/N]:
```

```
Rocky Linux

Enforce US Keyboard Layout View Fullscreen Send Ctrl+Alt+Delete

run-4:1.1.12-2.e19.x86_64 samba-client-4.19.4-104.e19.x86_64 samba-common-libs-4.19.4-104.e19.x86_64 selinux-policy-targeted-30.1.35-2.e19.4.0-2.noarch setup-2.13.7-10.e19.noarch sq3-utils-1.47-9.e19.x86_64 shadow-utils-subid-2:4.9-0.e19.x86_64 shima-064-15.0-2.e19.x86_64 smartmontools-1:7.2-9.e19.x86_64 sqlite-libs-3.34.1-7.e19.3.x86_64 sqsc-3.8.0-7.e19.x86_64 ssd-ad-2.9.4-6.e19.4.x86_64 ssd-common-2.9.4-6.e19.4.x86_64 ssd-ipa-2.9.4-6.e19.4.x86_64 ssd-libs-2.9.4-6.e19.4.x86_64 ssd-ldap-2.9.4-6.e19.4.x86_64 ssd-libs-2.9.4-6.e19.4.x86_64 strace-5.10-2.e19.x86_64 systemd-252-32.e19.4.x86_64 systemd-pam-252-32.e19.4.x86_64 systemd-udev-252-32.e19.4.x86_64 tcpdump-14.4.0-9.0-3.e19.x86_64 tigervnc-1:1.13.1-0.e19.4.3.x86_64 tigervnc-libs-1:1.13.1-0.e19.4.3.noarch tpm2-tools-5.2-3.e19.x86_64 tracer-common-1:1-2.e19.noarch udisk2-2.9.4-9.e19.x86_64 udisk2-iscsi-2.9.4-9.e19.x86_64 udisk2-lvm2-2.9.4-9.e19.x86_64 usbutils-015-1.e19.x86_64 util-linux-core-2.37.4-10.e19.x86_64 vdo-0.2.2-2.1.e19.x86_64 vim-enhanced-2:0.2.2-2637-20.e19.1.x86_64 vim-minimal-2:0.2.2-2637-20.e19.1.x86_64 uebb12g1k3-jsc-2.42.5-1.e19.x86_64 xfce-3.1.12-4.e19.x86_64 xfce x86_64 6.3.0-1.e19.x86_64 gnome x86_64 4.14.0-9.e19.noarch zip-3.0-35.e19.x86_64 zlib-1.2.11-40.e19.x86_64

Installed:
adobe-source-code-pro-fonts-2.030.1.050-12.e19.1.noarch
grub2-tools-extra-1:2.06-77.e19.x86_64
kernel-5.14.0-427.16.1.e19.4.x86_64
kernel-modules-5.14.0-427.16.1.e19.4.x86_64
libbrotli-1.5.2-0.e19.x86_64
libbtrfs-1.5.2-0.e19.x86_64
liburing-2.5-1.e19.x86_64
python3-distro-1.5.0-7.e19.noarch
python3-gobject-base-noarch-3.40.1-6.e19.noarch

Complete!
[aaqam@localhost ~]$
```

dnf list installed zsh

```
Complete!
[aaqam@localhost ~]$ dnf list installed zsh
Installed Packages
zsh.x86_64 5.8-9.e19 @anaconda
[aaqam@localhost ~]$
```

Complete Ch 5 Real World Scenario - "Manually Installing RPM Packages"

dnf -y install epel-release

```
Rocky Linux
[~] dnf install epel-release
[~] dnf -y install epel-release
Error: This command has to be run with superuser privileges (under the root user on most systems).
[~] sudo dnf -y install epel-release
Last metadata expiration check: 0:06:44 ago on Thu 23 May 2024 07:25:02 PM EDT.
Dependencies resolved.
=====
Package                Architecture      Version           Repository        Size
-----
Installing:
epel-release            noarch            9-7.e19           extras            19 k
=====
Transaction Summary
=====
Install 1 Package

Total download size: 19 k
Installed size: 26 k
Downloading Packages:
epel-release-9-7.e19.noarch.rpm                                06 kB/s | 19 kB | 00:00
-----
Total
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
Preparing :
Installing : epel-release-9-7.e19.noarch                                1/1
Running scriptlet: epel-release-9-7.e19.noarch                    1/1
Many RPM packages require the GodeReddy Builder (GRB) repository.
It is recommended that you run /usr/bin/crb enable to enable the CRB repository.
Verifying : epel-release-9-7.e19.noarch                                1/1
Installed:
epel-release-9-7.e19.noarch
Complete!
[~] dnf makecache
```

dnf makecache

```
[~] dnf makecache
Extra Packages for Enterprise Linux 9 - x86_64                15 MB/s | 21 MB | 00:01
Extra Packages for Enterprise Linux 9 openh264 (From Cisco) - x86_64 533 B/s | 2.5 kB | 00:04
Rocky Linux 9 - BaseOS                                         448 kB/s | 2.2 MB | 00:05
Rocky Linux 9 - AppStream                                       2.8 MB/s | 7.9 MB | 00:02
Rocky Linux 9 - Extras                                         28 kB/s | 15 kB | 00:00
Metadata cache created.
[~]
```

sudo dnf --downloadonly --destdir=/tmp/ install http

```
[~] sudo dnf --downloadonly --destdir=/tmp/ install http
Extra Packages for Enterprise Linux 9 - x86_64                4.1 MB/s | 21 MB | 00:05
Extra Packages for Enterprise Linux 9 openh264 (From Cisco) - x86_64 4.5 kB/s | 2.5 kB | 00:00
Dependencies resolved.
=====
Package                Architecture      Version           Repository        Size
-----
Installing:
http                   x86_64            3.3.0-1.e19       epel              198 k
Installing dependencies:
hwloc-libs             x86_64            2.4.1-5.e19       baseos            2.1 M
=====
Transaction Summary
=====
Install 2 Packages

Total download size: 2.3 M
Installed size: 3.5 M
DNF will only download packages for the transaction.
Is this ok [y/N]: Y
Downloading Packages:
(1/2): hwloc-libs-2.4.1-5.e19.x86_64.rpm                        1.8 MB/s | 2.1 MB | 00:01
(2/2): http-3.3.0-1.e19.x86_64.rpm                              51 kB/s | 198 kB | 00:03
-----
Total
Extra Packages for Enterprise Linux 9 - x86_64                561 kB/s | 2.3 MB | 00:04
Importing GPG key 0x3228467C:
  Userid : "Fedora (epel9) <epel@fedoraproject.org>"
  Fingerprint: FF8A D134 4597 106E CE81 3B91 8A38 72BF 3228 467C
  From : /etc/pki/rpm-gpg/RPM-GPG-KEY-EPEL-9
Is this ok [y/N]: Y
Key imported successfully
Complete!
The downloaded packages were saved in cache until the next successful transaction.
You can remove cached packages by executing 'dnf clean packages'.
[~]
```

cd /tmp


```
sudo rpm -i ./htop <tab>
```

htop

Complete Ch 5 Real World Scenario

– “Installing Flatpak”

```
sudo dnf install flatpak
```

```
Rocky Linux
Enforce US Keyboard Layout View Fullscreen Send Ctrl+Alt+Delete

Installing:
flatpak x86_64 1.12.0-1.el9 appstream 1.7 M
Installing dependencies:
PodmanManager-glib x86_64 1.20.2-1.el9 bassos 334 k
alsa-lib x86_64 1.2.10-2.el9 appstream 584 k
asahi-glib x86_64 0.0-20.el9 appstream 14 k
bluez-libs x86_64 5.64-2.el9 bassos 163 k
dconf x86_64 0.40.0-6.el9 appstream 189 k
fdk-aac-free x86_64 2.0.0-0.el9 appstream 324 k
flac-libs x86_64 1.3.3-10.el9_2.1 appstream 217 k
flatpak-session-helper x86_64 1.12.0-1.el9 appstream 20 k
gnome-keyring x86_64 1.12.0-1.el9 appstream 73 k
gstreamer1.0 x86_64 2.0.22-1.el9 appstream 122 k
gstreamer1.0-plugins-base x86_64 1.0.19-6.el9 appstream 33 k
libasound x86_64 0.0-22.el9 appstream 29 k
libdconf x86_64 2.0.2-3-10.el9 appstream 40 k
libnotify x86_64 0.7.9-8.el9 appstream 43 k
libogg x86_64 2:1.3.4-6.el9 appstream 32 k
liborc x86_64 1.4-9.el9 appstream 44 k
libsndfile x86_64 1.0.31-8.el9 appstream 295 k
libsoxr x86_64 1:1.3.7-5.el9 appstream 192 k
low-memory-monitor x86_64 2.1-4.el9 appstream 35 k
opus x86_64 1.3.1-10.el9 appstream 199 k
ostree-libs x86_64 2024.4-3.el9_4 appstream 406 k
pipewire-jack-audio-connection-kit-libs x86_64 1.0.1-1.el9 appstream 194 k
pipewire-libs x86_64 1.0.1-1.el9 appstream 1.9 M
pulseaudio-libs x86_64 15.0-2.el9 appstream 666 k
rtkit x86_64 0.11-20.el9 appstream 55 k
schrc-audio-processing x86_64 0.1.1-0.el9 appstream 384 k
wireplumber x86_64 0.4.14-1.el9_0.1 appstream 83 k
wireplumber-libs x86_64 0.4.14-1.el9_0.1 appstream 330 k
xdg-desktop-portal x86_64 0.1.3-1.el9 appstream 41 k
Installing weak dependencies:
glib-2.0 x86_64 2.80.3-2.el9 appstream 245 k
pipewire x86_64 1.0.1-1.el9 appstream 101 k
pipewire-alsa x86_64 1.0.1-1.el9 appstream 56 k
pipewire-jack-audio-connection-kit x86_64 1.0.1-1.el9 appstream 8.1 k
pipewire-pulseaudio x86_64 1.0.1-1.el9 appstream 105 k
xdg-desktop-portal x86_64 1.12.6-1.el9 appstream 367 k

Transaction Summary
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Install 36 Packages

Total download size: 9.1 M
Installed size: 34 M
Is this ok [y/n]: y

Verifying : libogg-2:1.3.4-6.el9.x86_64 12/36
Verifying : rtkit-0.11-20.el9.x86_64 13/36
Verifying : xdg-desktop-portal-1.12.6-1.el9.x86_64 14/36
Verifying : xdg-desktop-portal-1.12.6-1.el9.x86_64 15/36
Verifying : gstreamer1.0-2.0.22-1.el9.x86_64 16/36
Verifying : libnotify-0.7.9-8.el9.x86_64 17/36
Verifying : flac-libs-1.3.3-10.el9_2.1.x86_64 18/36
Verifying : libsndfile-1.0.31-8.el9.x86_64 19/36
Verifying : libsoxr-1:1.3.7-5.el9.x86_64 20/36
Verifying : alsa-lib-1.2.10-2.el9.x86_64 21/36
Verifying : opus-1.3.1-10.el9.x86_64 22/36
Verifying : wireplumber-libs-0.4.14-1.el9_0.1.x86_64 23/36
Verifying : wireplumber-0.4.14-1.el9_0.1.x86_64 24/36
Verifying : pipewire-pulseaudio-1.0.1-1.el9.x86_64 25/36
Verifying : pipewire-1.0.1-1.el9.x86_64 26/36
Verifying : pipewire-jack-audio-connection-kit-1.0.1-1.el9.x86_64 27/36
Verifying : pipewire-alsa-1.0.1-1.el9.x86_64 28/36
Verifying : pipewire-1.0.1-1.el9.x86_64 29/36
Verifying : libogg-2:1.3.4-6.el9.x86_64 30/36
Verifying : liborc-1.4-9.el9.x86_64 31/36
Verifying : low-memory-monitor-2.1-4.el9.x86_64 32/36
Verifying : schrc-audio-processing-0.1.1-0.el9.x86_64 33/36
Verifying : wireplumber-0.4.14-1.el9_0.1.x86_64 34/36
Verifying : pipewire-jack-audio-connection-kit-libs-1.0.1-1.el9.x86_64 35/36
Verifying : pipewire-libs-1.0.1-1.el9.x86_64 36/36

Installed:
PodmanManager-glib-1.20.2-1.el9.x86_64
alsa-lib-1.2.10-2.el9.x86_64
bluez-libs-5.64-2.el9.x86_64
dconf-0.40.0-6.el9.x86_64
flac-libs-1.3.3-10.el9_2.1.x86_64
flatpak-session-helper-1.12.0-1.el9.x86_64
gnome-keyring-2.0.22-1.el9.x86_64
libasound-0.0-22.el9.x86_64
libdconf-2.0.2-3-10.el9.x86_64
libnotify-0.7.9-8.el9.x86_64
liborc-1.4-9.el9.x86_64
libsoxr-1:1.3.7-5.el9.x86_64
opus-1.3.1-10.el9.x86_64
ostree-libs-2024.4-3.el9_4.x86_64
pipewire-jack-audio-connection-kit-libs-1.0.1-1.el9.x86_64
pipewire-libs-1.0.1-1.el9.x86_64
pulseaudio-libs-15.0-2.el9.x86_64
rtkit-0.11-20.el9.x86_64
schrc-audio-processing-0.1.1-0.el9.x86_64
wireplumber-0.4.14-1.el9_0.1.x86_64
wireplumber-libs-0.4.14-1.el9_0.1.x86_64
xdg-desktop-portal-1.12.6-1.el9.x86_64

Complete!
[anand@localhost ~]$
```

flatpak remote-add --if-not-exists --subset=verified flathub-verified
<https://flathub.org/repo/flathub.flatpakrepo>

```

[complete]
[aagam@localhost ~]$ flatpak remote-add --if-not-exists --subset=verified flatpak-verified https://flathub.org/repo/flathub.flatpakrepo

Note that the directories

'/var/lib/flatpak/exports/share'
'/home/aagam/.local/share/flatpak/exports/share'

are not in the search path set by the XDG_DATA_DIRS environment variable, so
applications installed by Flatpak may not appear on your desktop until the
session is restarted.

==== AUTHENTICATING FOR org.freedesktop.Flatpak.configure-remote ====
Authentication is required to configure software repositories
Authenticating as: aagam (aagam)
Password:
==== AUTHENTICATION COMPLETE ====
[aagam@localhost ~]$

```

sudo flatpak remotes

```

[aagam@localhost ~]$ sudo flatpak remotes
Name           Options
flatpak-verified system
[aagam@localhost ~]$

```

sudo flatpak search mosh

```

flatpak-verified system
[aagam@localhost ~]$ sudo flatpak search mosh
F: Failed to parse /var/lib/flatpak/appstream/flatpak-verified/x86_64/active/appstream.xml.gz file: Error on line 4387 char 29:
<p> already set '
  Organic Maps is a free Android & iOS offline maps app for travelers,
  tourists, hikers, drivers and cyclists.
  It uses crowd-sourced OpenStreetMap data and is developed with love by
  ' and tried to replace with ' ('
No matches found
[aagam@localhost ~]$

```