4.3 Creating Fedora Virtual Machines

Complete this task as part of Chapter 4 and before reading Chapter 5.

About this document:

Welcome to the software installation guide for Apress book, "Introduction to Ansible Network Automation: The Practical Primer, Volume 1". This guide has been created by the authors as a complementary material to the book, but it is not part of the actual book. Its purpose is to provide a clear and concise set of instructions to help you install the necessary software to follow along with the book's examples and exercises.

By following the steps outlined in this guide, you will be able to set up the required software for Ansible network automation and start exploring the practical concepts covered in the book. Please note that this guide is not intended to be a comprehensive resource on network automation or Ansible, but rather a focused guide to help you get started quickly and easily.

If you have any questions or issues during the installation process, please don't hesitate to reach out to the authors or consult the resources listed in the guide. We hope this guide proves helpful in your journey towards mastering Ansible network automation.

Version:	1.0
Created:	21/Mar/2023
Last updated:	N/A

What's required?

Host OS:	Windows 11
Desktop Hypervisor:	VMware Workstation 17 Pro
File name:	Fedora 38 Server, Fedora-Server-dvd-x86_64-38_Beta-1.3.iso or newer
Internet connection:	Yes

Please note that this installation is based on the beta version of Fedora 38. However, by the time our book is published, the stable version 38 or a newer version will likely be available. In that case, we recommend using the latest release of Fedora for optimal performance and stability.

To begin with Ansible Network Automation, it's important to get familiar with the basic Ansible concepts. Ansible was originally developed and integrated into Red Hat Linux, so there's no better place to start than with Linux itself. For this tutorial, we'll be using Fedora instead of Red Hat Enterprise Linux or CentOS 9 Stream. The reason for this is that Fedora offers the latest features that may not have been introduced to RHEL, and CentOS 9 Stream is very similar to Fedora.

RHEL 9, or Red Hat Enterprise Linux 9, is a popular enterprise-grade operating system that's widely used in server environments. It's a stable and secure operating system that's designed for high-performance computing and enterprise-level applications.

CentOS Stream 9 is a free and open-source operating system that's based on the source code of Red Hat Enterprise Linux. It's similar to RHEL, but it's more of a rolling release distribution, which means that updates are released more frequently.

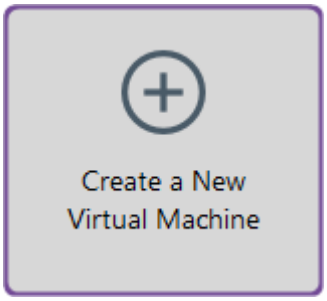
Fedora 38 is a community-driven Linux distribution that's sponsored by Red Hat. It's a cutting-edge operating system that's designed for developers and enthusiasts who want to stay up-to-date with the latest features and technologies.

For this tutorial, we'll be using one of the Fedora servers as the Control node, and all other servers as client nodes, including 1 x Fedora and 2 x Ubuntu clients. Here are the step-by-step procedures to install the latest Fedora 38 server in VMware Workstation 17:

Installation Steps:

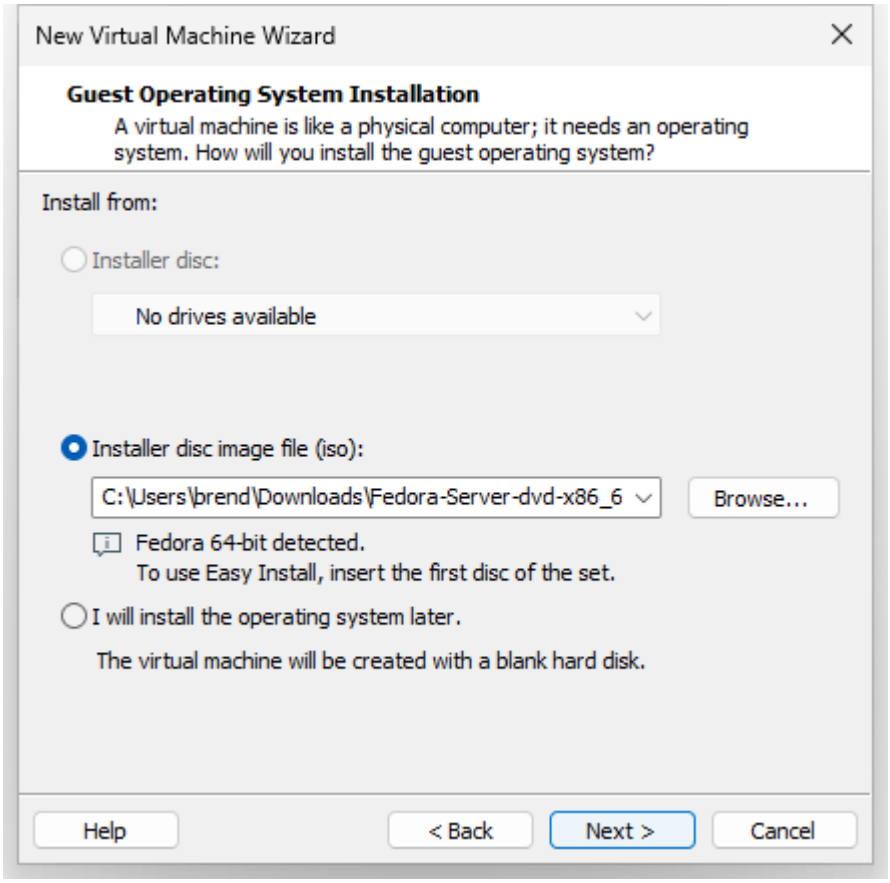
1. First, download the Fedora 38 or latest Server ISO file from the official Fedora website.
   URL: https://getfedora.org/en/server/download/

2. Launch VMware Workstation 17 and click on "Create a New Virtual Machine".

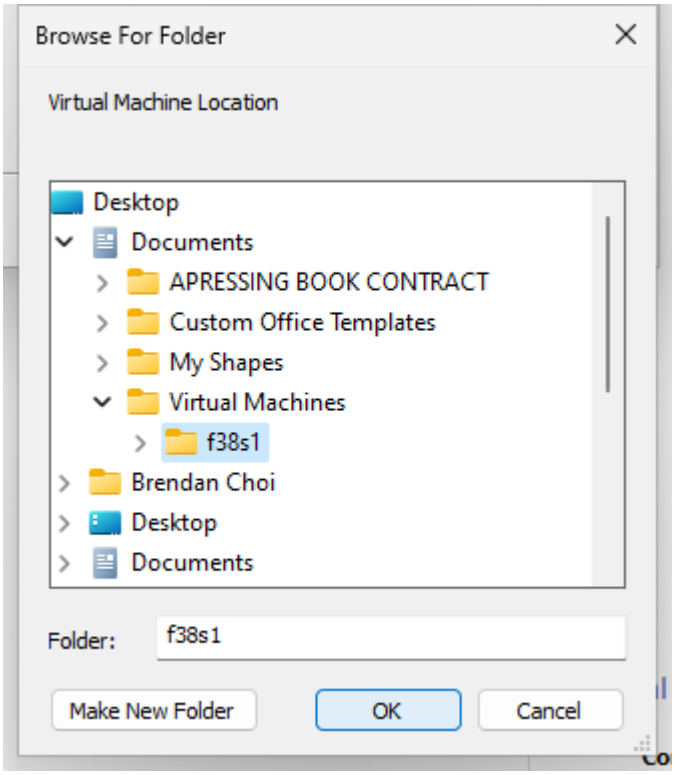


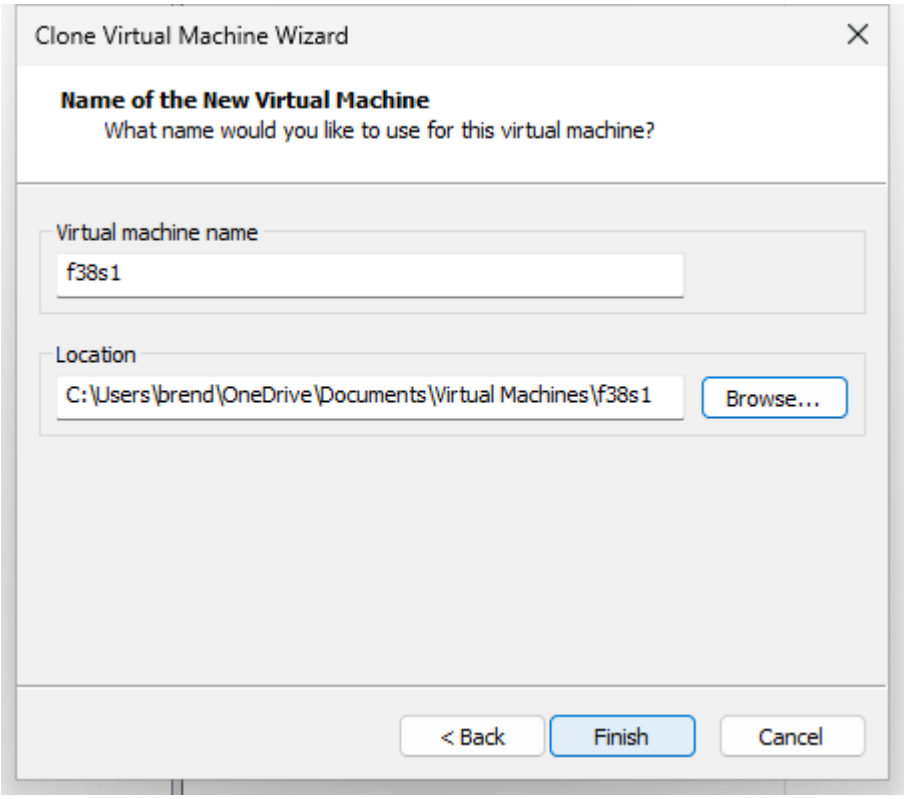
3. Select "Typical (recommended)" and click "Next".

4. Choose the option "Installer disc image file (iso)" and click "Browse". Browse and select the Fedora 38 Server ISO file you downloaded earlier, and click "Next".

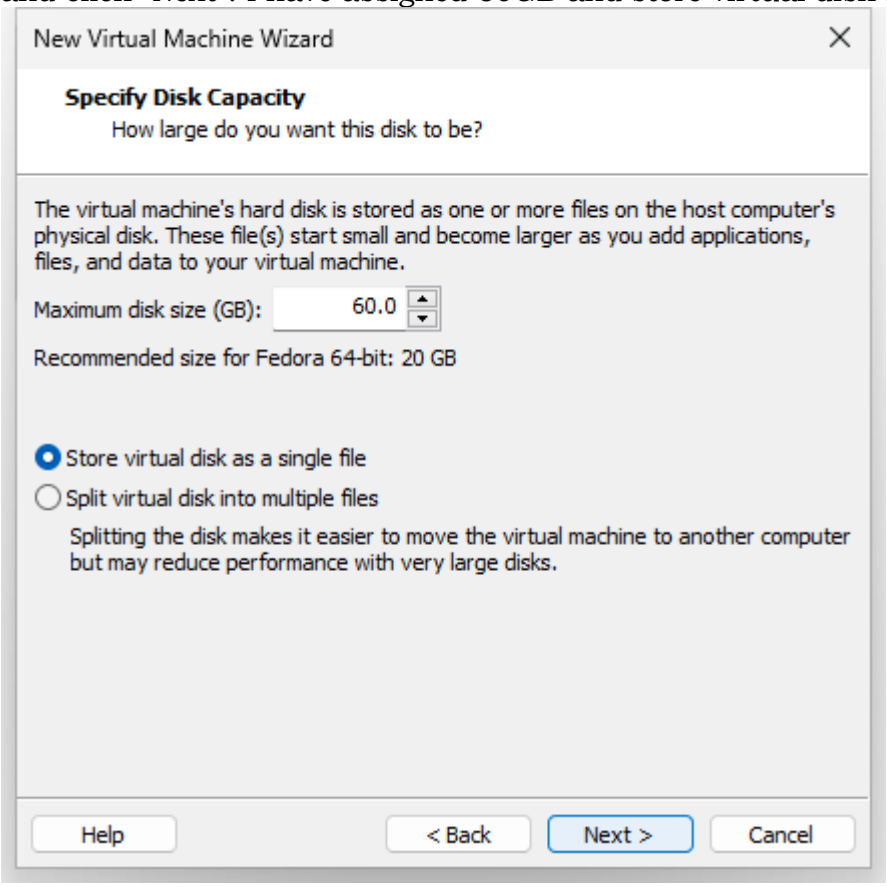


5. Enter a name for the virtual machine and choose a location to save it.



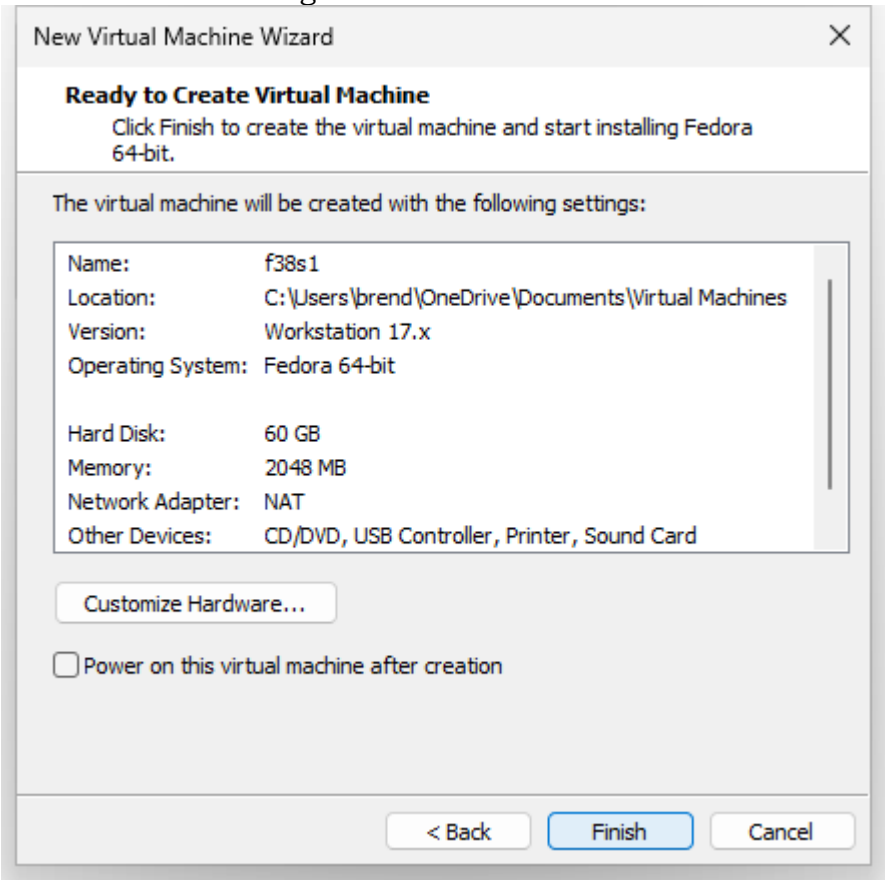


6. Choose the amount of disk space you want to allocate to the virtual machine and click "Next". I have assigned 60GB and store virtual disk as a single file.

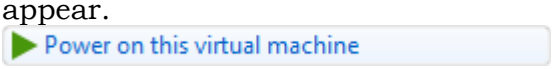


7. Click "Customize Hardware" to customize the virtual machine's settings.

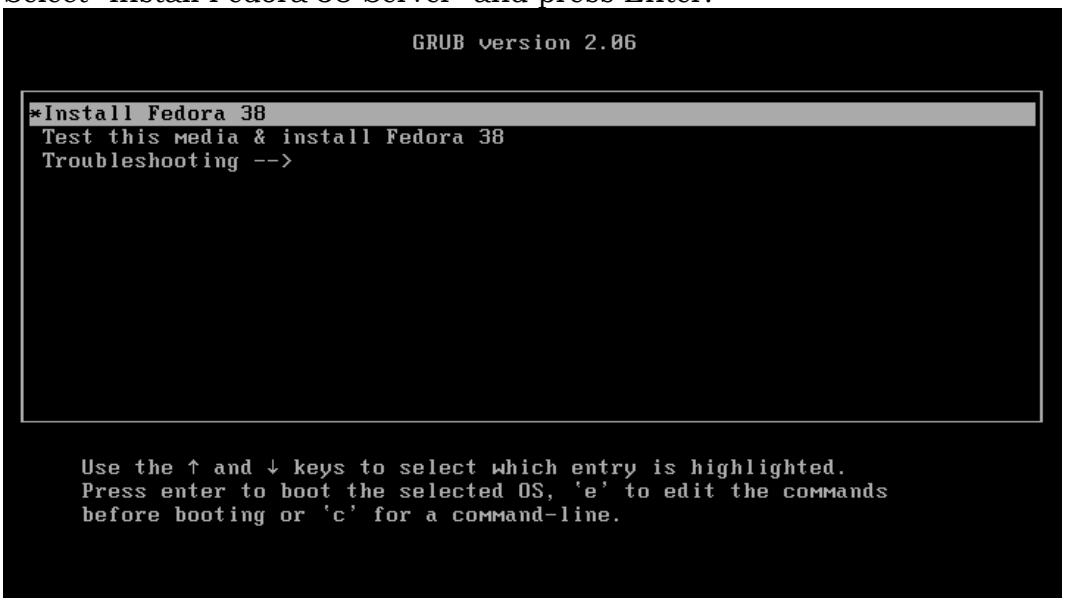
- Increase the RAM to at least 2 GB.
- Create a new network adapter if you need to connect to the internet during the installation.
- Save the changes and click "Finish" to create the virtual machine.



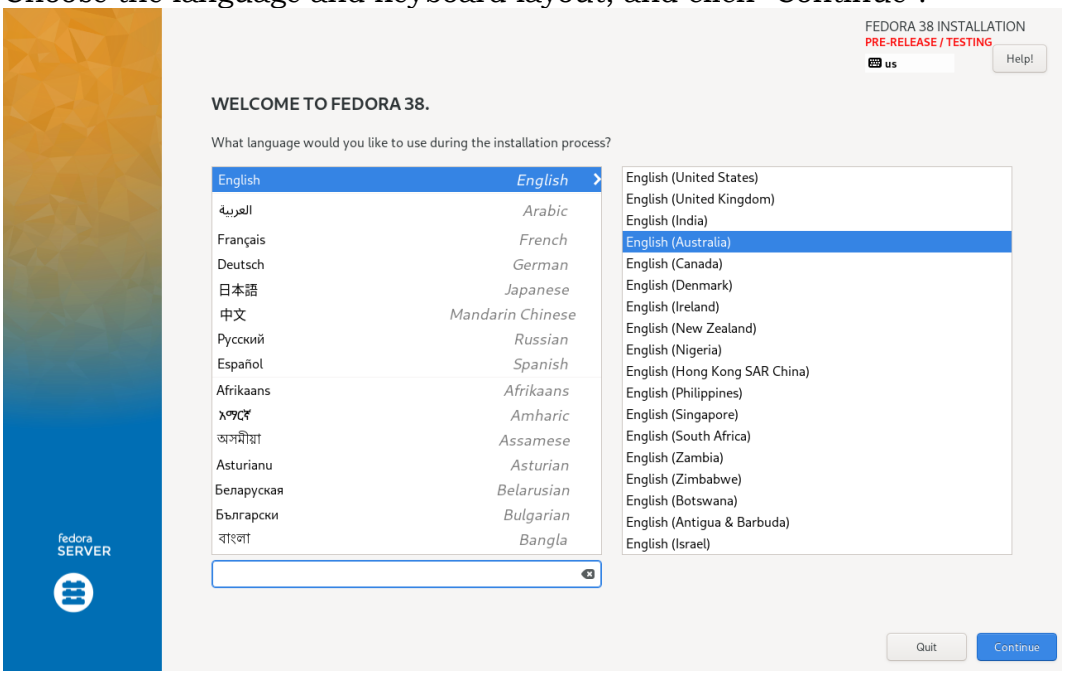
8. Power on the virtual machine and wait for the Fedora installation screen to appear.



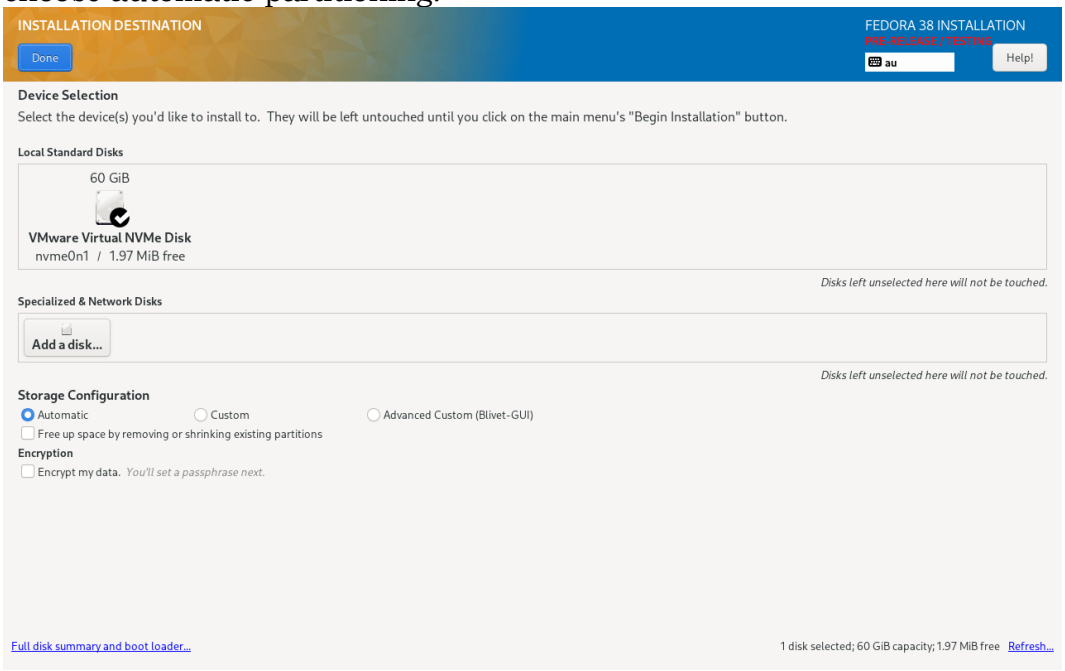
9. Select "Install Fedora 38 Server" and press Enter.



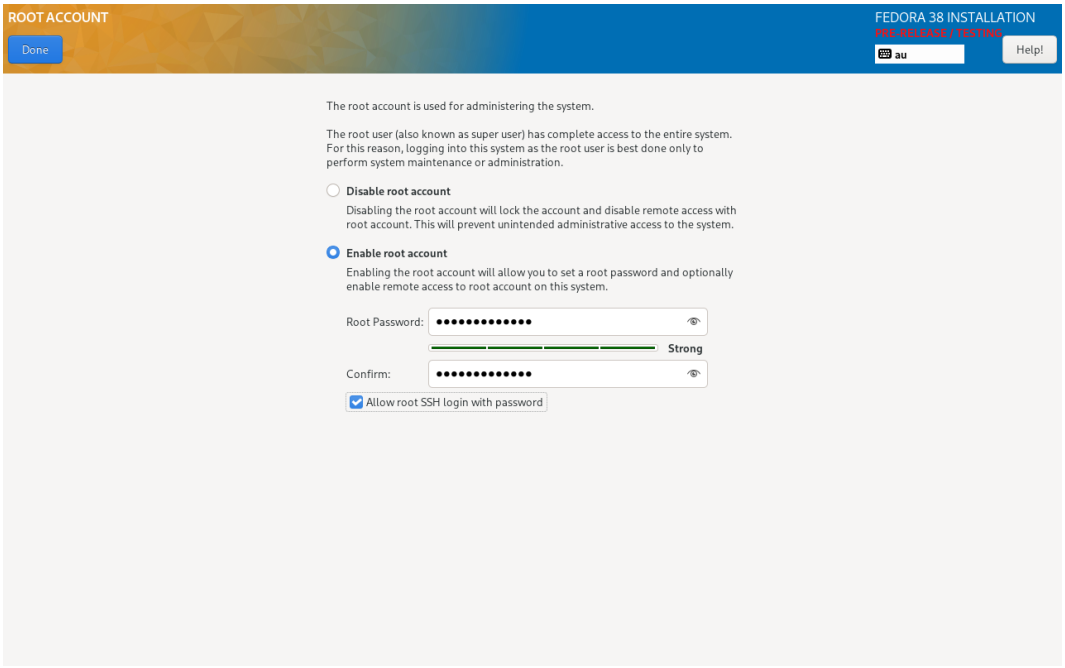
10. Choose the language and keyboard layout, and click "Continue".



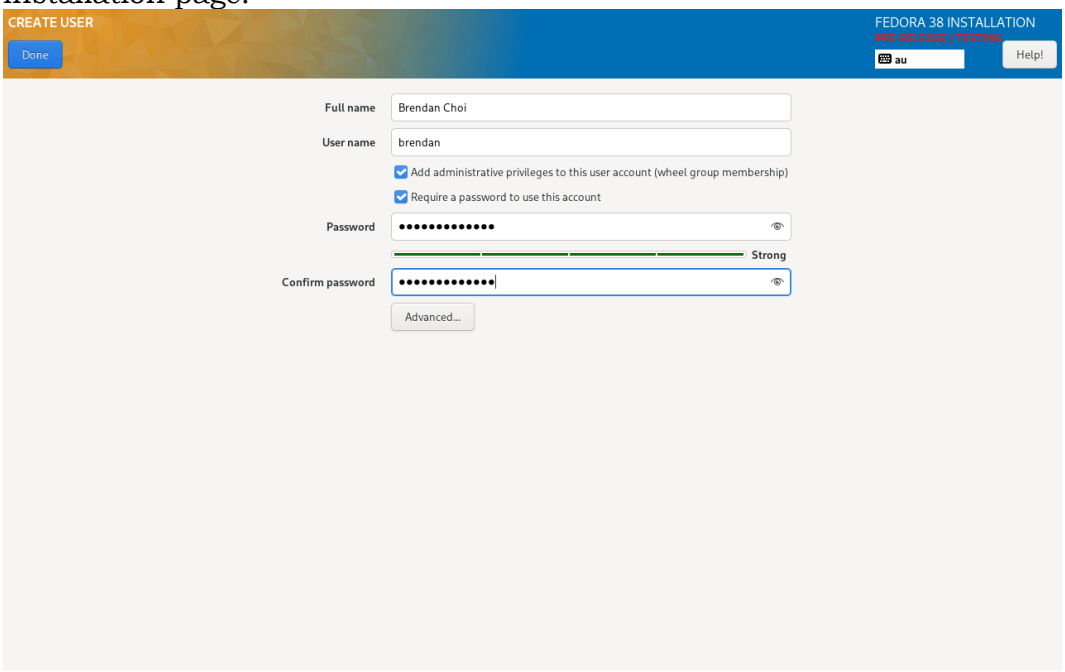
11. Select the installation destination, and click "Continue". Select “Done” to choose automatic partitioning.



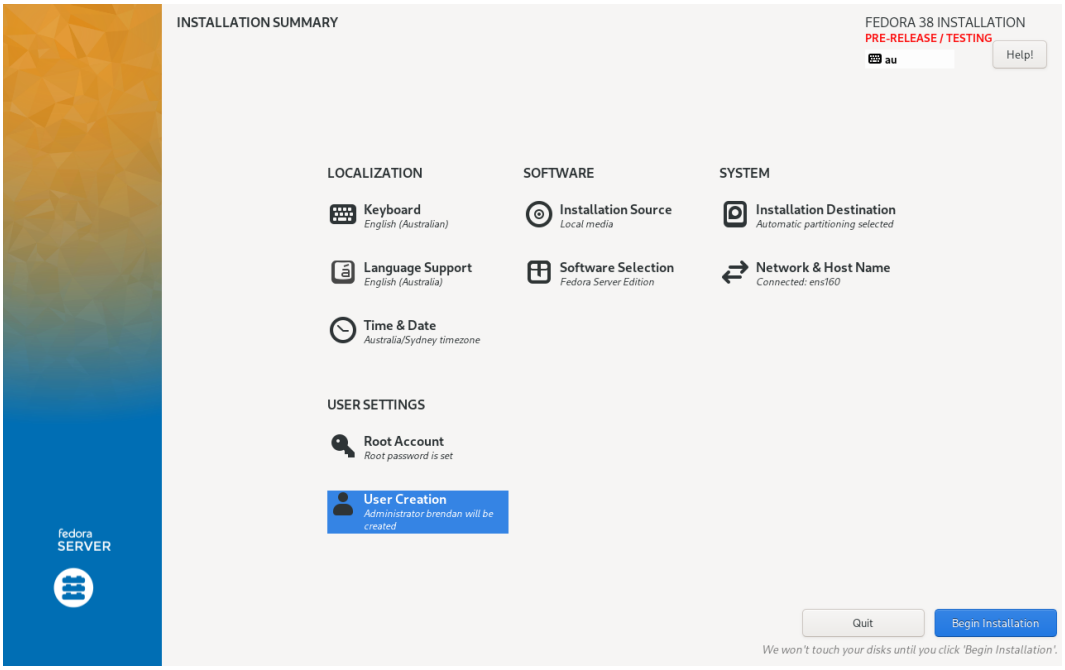
12. Go to “Root Account” and enable root account, then enter a strong password. Since this is our Development machine on our personal laptop, let’s select “Allow SSH login with password”. **WARNING**: If you are deploying a server in the productions, the root user account and root user SSH access should be disabled for security reasons.
Click on “Done” to navigate back to main page.



13. Create a user account while we are here. Select both boxes to add the user as a member of Wheel group, which gives a sudo privilege and password required to use this account. Also, use a strong password for better protection. Click on “Done” button now to navigate back to the main installation page.

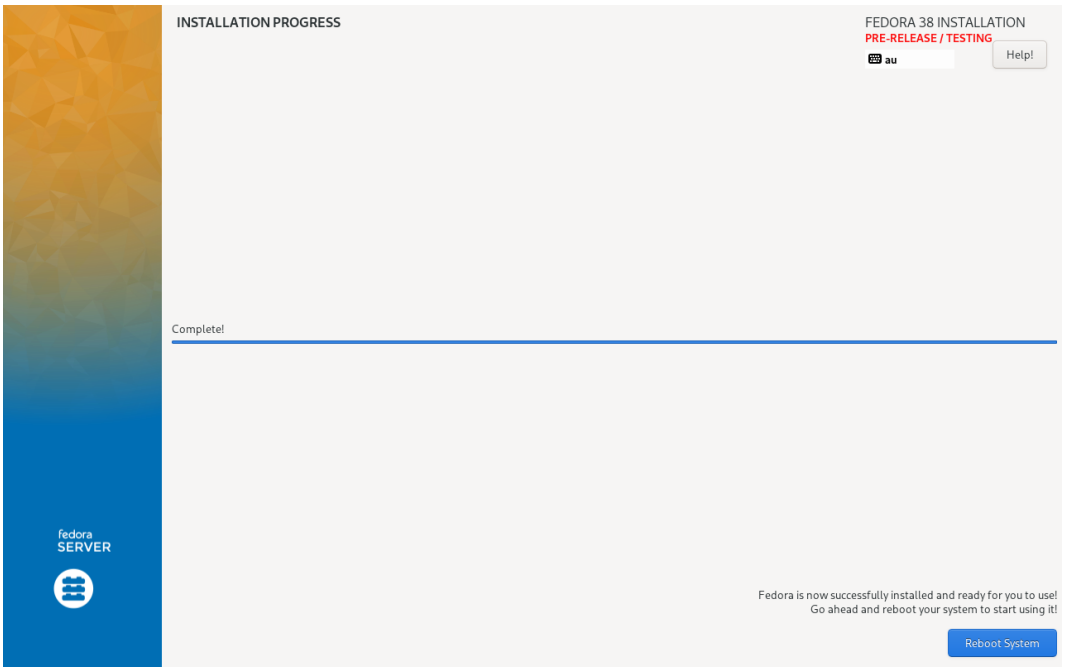


14. Now click "Begin Installation" to initialize the installation.



15. Wait for the installation to complete.

16. Once Installation Process completes, click "Reboot System" to complete the installation.



17. Login with the newly created user account.

```
Fedora Linux 38 (Server Edition Prerelease)
Kernel 6.2.2-301.fc38.x86_64 on an x86_64 (tty1)

Web console: https://localhost:9090/ or https://192.168.127.128:9090/

localhost login: brendan
Password:
[brendan@localhost ~]$ cat /etc/*release
Fedora release 38 (Thirty Eight)
NAME="Fedora Linux"
VERSION="38 (Server Edition Prerelease)"
ID=fedora
VERSION_ID=38
VERSION_CODENAME=""
PLATFORM_ID="platform:f38"
PRETTY_NAME="Fedora Linux 38 (Server Edition Prerelease)"
ANSI_COLOR="0;38;2;60;110;180"
LOGO=fedora-logo-icon
CPE_NAME="cpe:/o:fedoraproject:fedora:38"
HOME_URL="https://fedoraproject.org/"
DOCUMENTATION_URL="https://docs.fedoraproject.org/en-US/fedora/f38/system-administrators-guide/"
SUPPORT_URL="https://ask.fedoraproject.org/"
BUG_REPORT_URL="https://bugzilla.redhat.com/"
REDHAT_BUGZILLA_PRODUCT="Fedora"
REDHAT_BUGZILLA_PRODUCT_VERSION=38
REDHAT_SUPPORT_PRODUCT="Fedora"
REDHAT_SUPPORT_PRODUCT_VERSION=38
SUPPORT_END=2024-05-14
VARIANT="Server Edition"
VARIANT_ID=server
Fedora release 38 (Thirty Eight)
Fedora release 38 (Thirty Eight)
[brendan@localhost ~]$
```

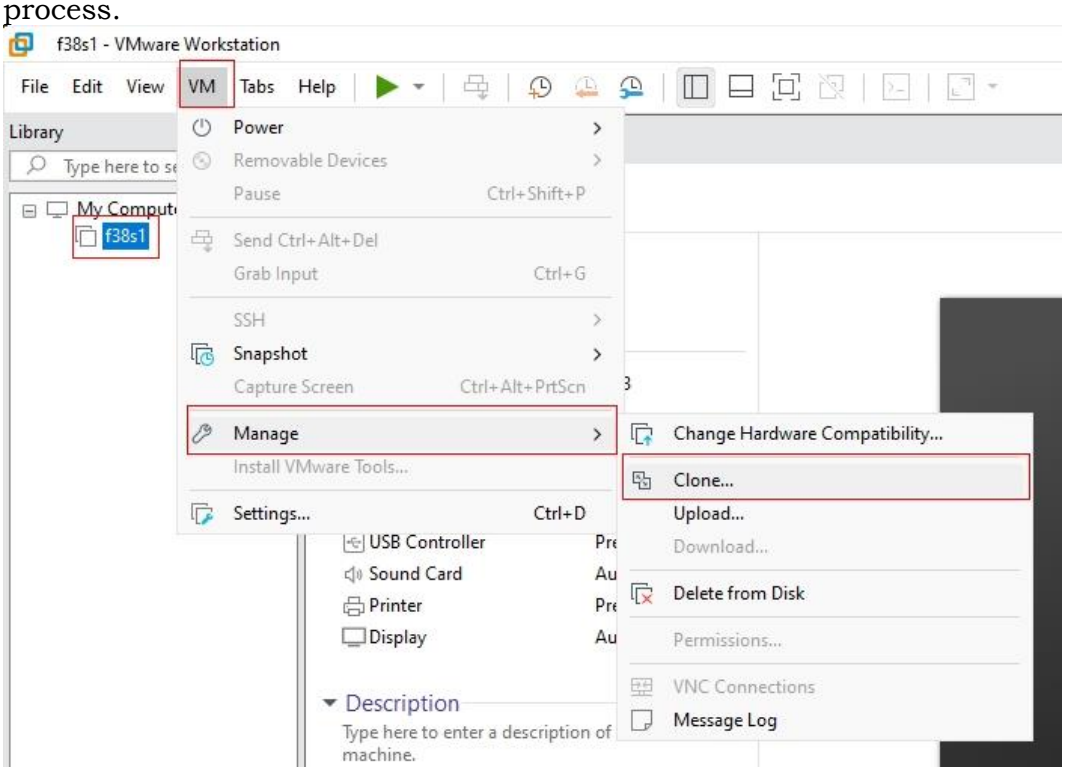
18. Now power off the VM, f38s1, so we can make second Fedora 38 virtual machine to be used as Ansible client machine. We will name this client, f38c1.

That's it! You should now have the latest Fedora 38 server installed and running in VMware Workstation 17.

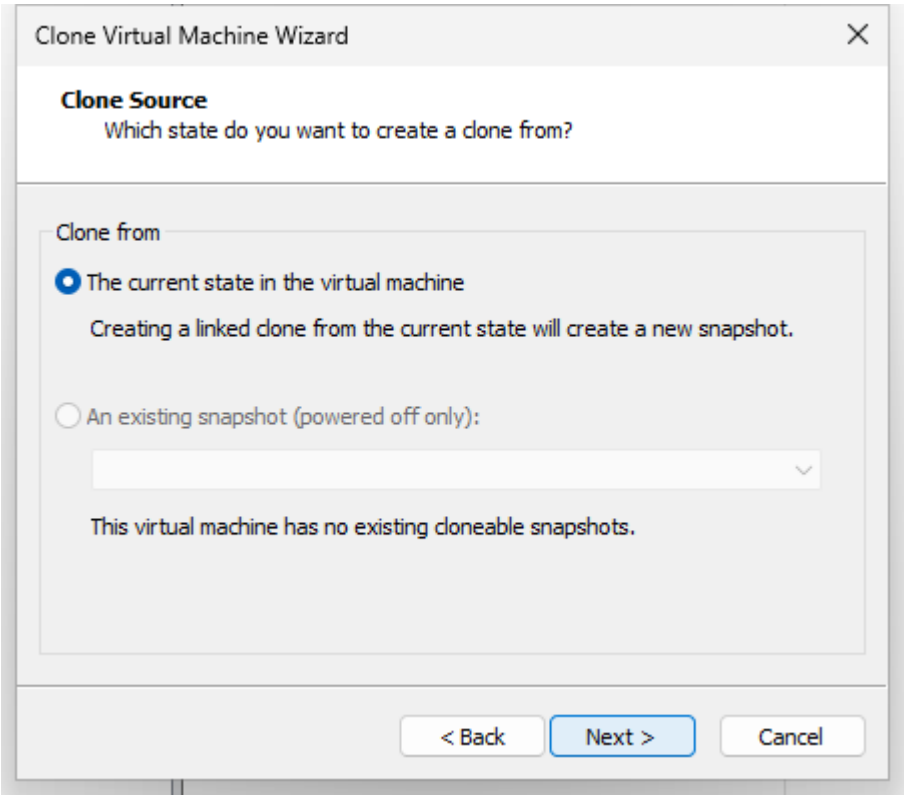
Cloning a VM

Here are the step-by-step instructions for cloning a Fedora server named f38s1 on VMware Workstation 17 and creating a client named f38c1:

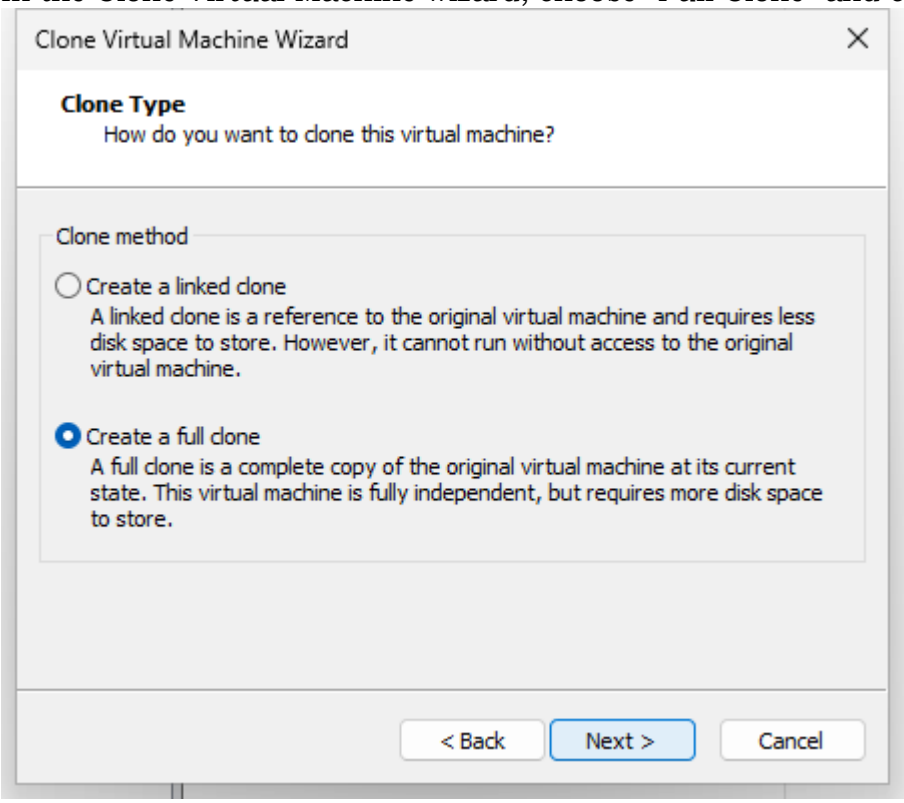
1. Open VMware Workstation and select the Fedora server virtual machine named f38s1 from the list on the home screen.
2. Select "f38s1", navigate to VM > Manage > Clone… to start VM cloning process.



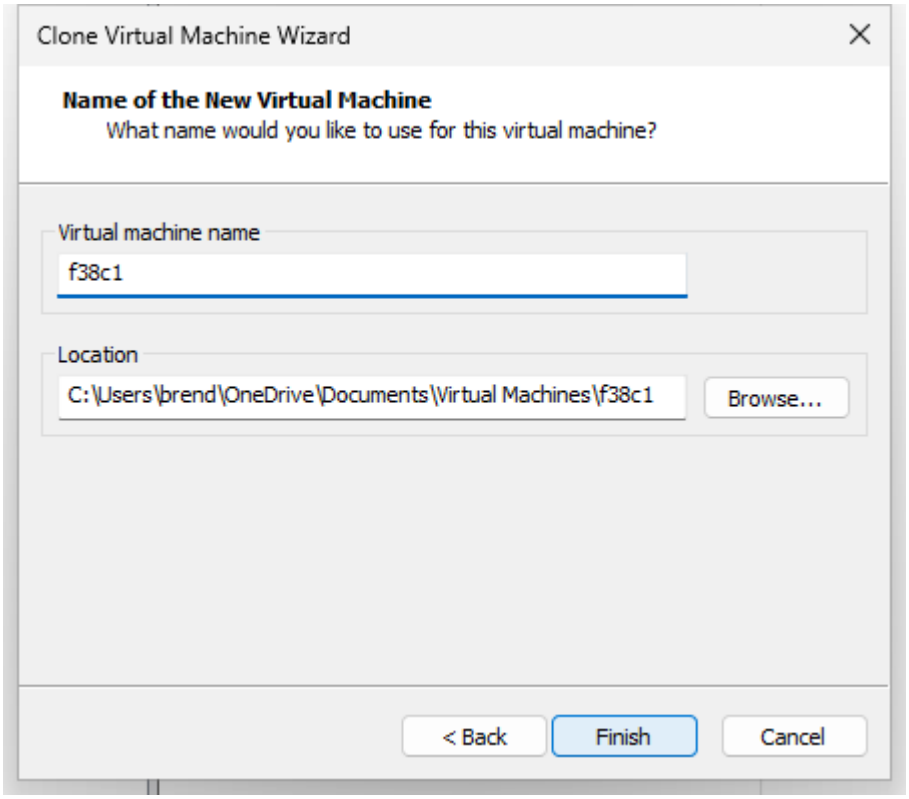
3. Choose "The current state in the virtual machine" as the Clone Source, and click on "Next".



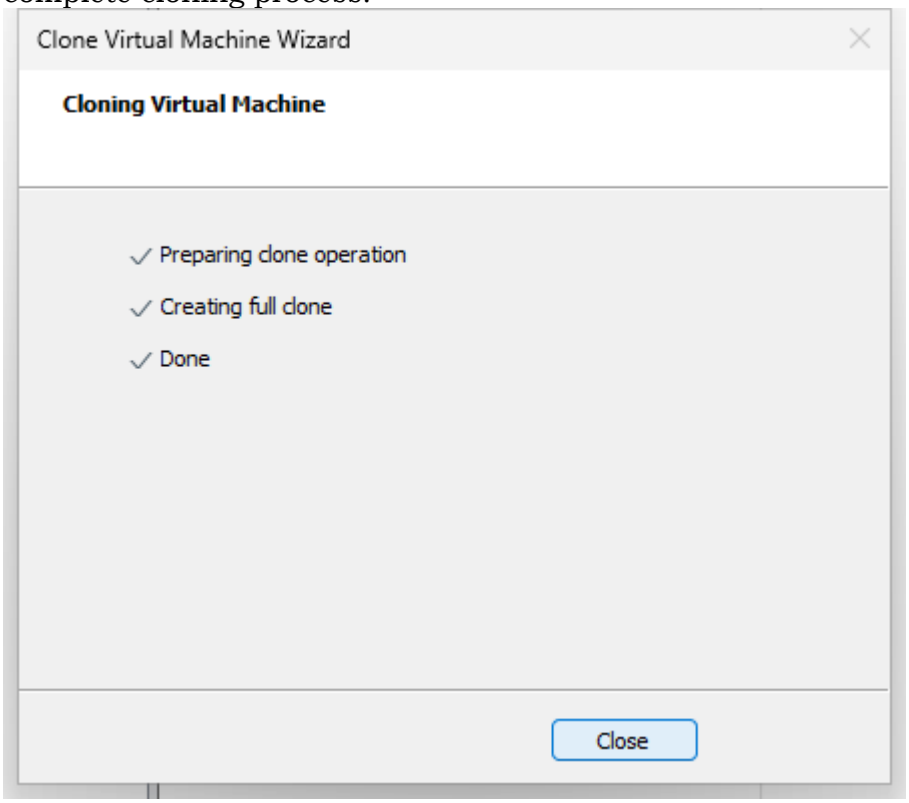
4. In the Clone Virtual Machine wizard, choose "Full Clone" and click "Next".



5. Specify a name and location for the new virtual machine. In this case, we'll name the new virtual machine "f38c1" and choose to store it in the same location as the original virtual machine. Click "Next".



6. Click "Finish" to start the cloning process.
7. The cloning process may take some time, depending on the size of the virtual machine and the resources available on your computer. Close the Wizard to complete cloning process.



8. Once the cloning process is complete, the new virtual machine named f38c1 will appear in the virtual machine list in VMware Workstation.
9. Power on the new virtual machine f38c1 and wait for it to boot up.
10. Once the cloned virtual machine boots up and you can login with the same credentials, **power off the VM to free the resources while building the Ubuntu VMs**.
11. **The next step would be to change the hostname and assign a static IP address, which we will cover in the book.**

Congratulations! You have completed the cloning process for a Fedora server named f38s1 and created a client named f38c1 using VMware Workstation 17. These machines will be utilized as our Ansible Control Host and a client machine, respectively. In the next document, "4_Create_Ubuntu_VMs_v1.0.pdf," we will follow a similar process to create Ubuntu client machines. Stay tuned!