Computer components

Date: 8 – 12 February 2021   **Week:** 1
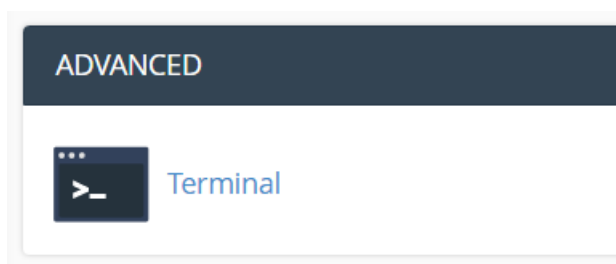

Task I: Tutorial questions

1. Define the four main components of a computer.

2. Explain the difference between a fixed program computer and a stored program computer.

3. What is Gordon Bell's law about the near future of computer class?

Task II: Practical exercises

For this week, we will prepare the Linux environment to be used for the remaining of the module.

For students working in the lab, the machines are dual boot, which means you can boot to Microsoft Windows 10 and also you can boot into Linux Fedora. To boot into Linux, restart your PC and choose option to start Fedora (choose the top option). You will be presented with the login window. Enter your normal user name in a form of your university email address (*e.g. abc3@uni.brighton.ac.uk*) and your normal password. You should be presented with the Fedora Desktop.

For students working at home, there are two options. You may use Brighton.domains's Terminal (located under the Advanced tab).
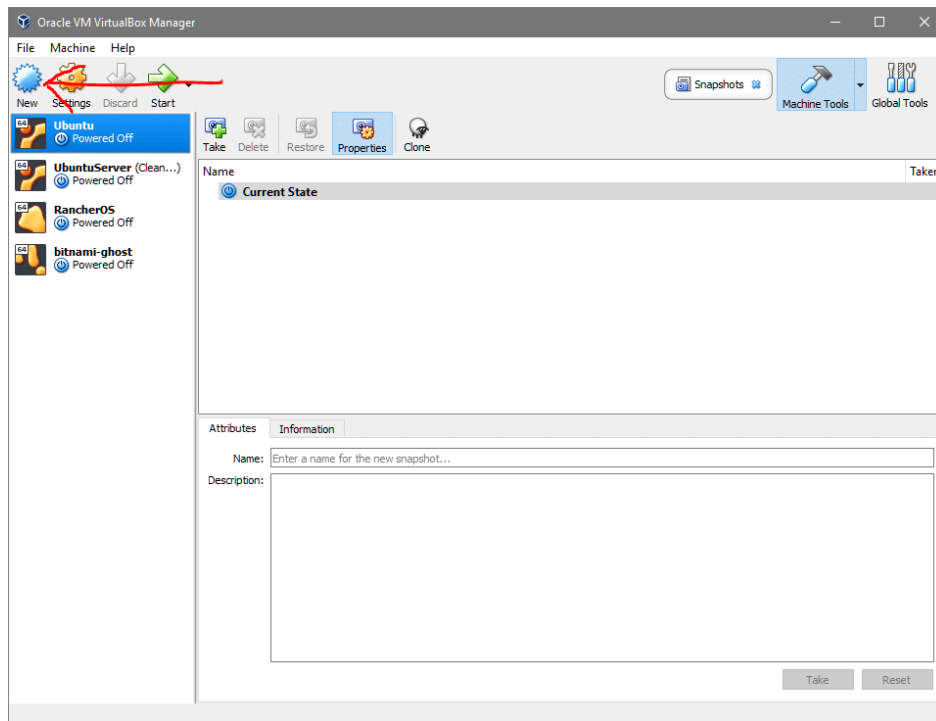

Or following the below instructions to install Fedora on Virtual Box (based on LinuxHint.com)
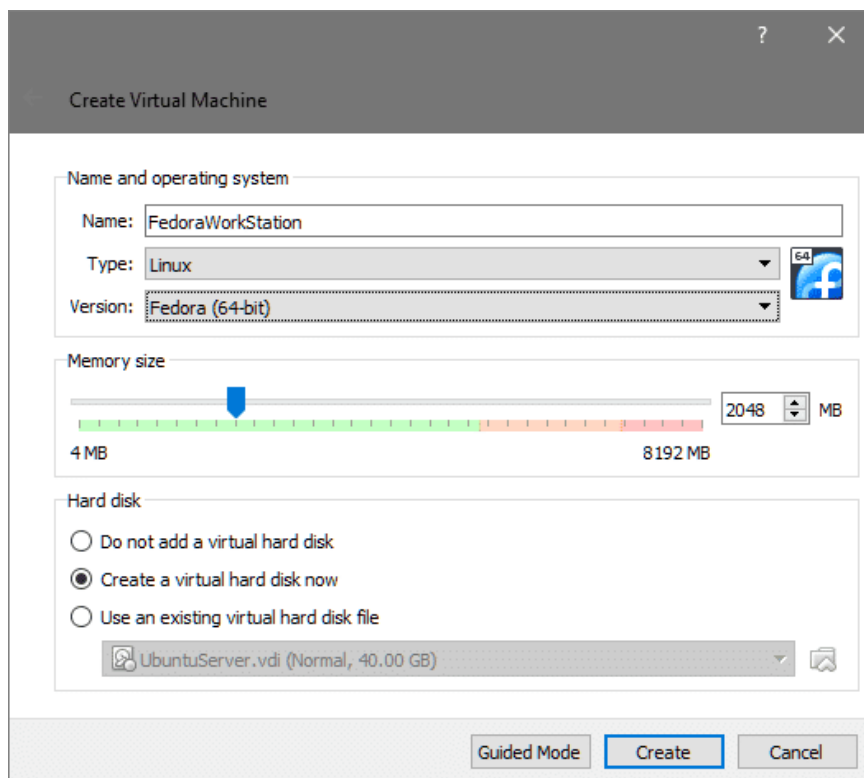
Step 0: Downloading the tools.

- VirtualBox from from https://www.oracle.com
- Fedora iso file from https://getfedora.org/en/workstation/

Step 1: Creating a VM and allocating resources

In VirtualBox, in the upper left corner find an Icon which says "New". This will open up a Virtual Machine setup wizard which will walk us through the process.
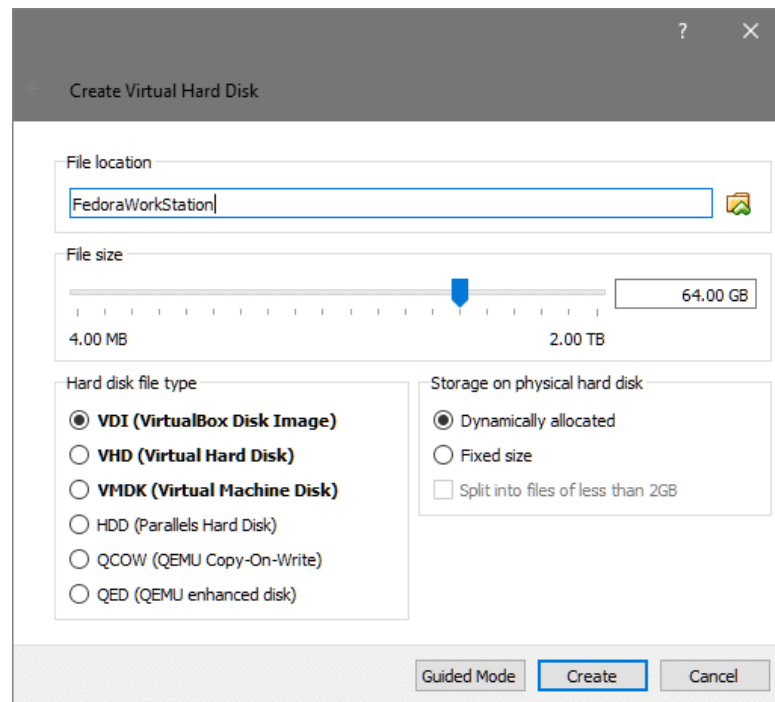
Set the memory to at least 2GB (2048 MB) for a smooth experience, as shown below.

Click on "Create" to move on to creating a virtual hard disk for your VM.

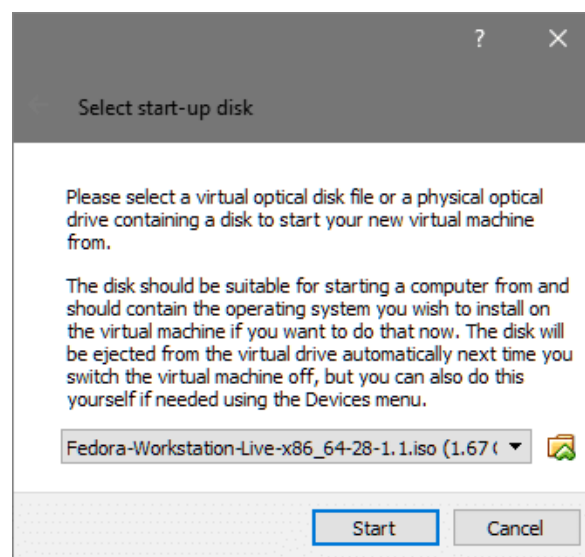CI405 – Computing Technologies (Semester 2)

Select the size for your virtual hard disk along with the format. We recommend at least 10GB of space, as per Fedora's official minimum requirements, and .vdi format which works the best with VirtualBox.

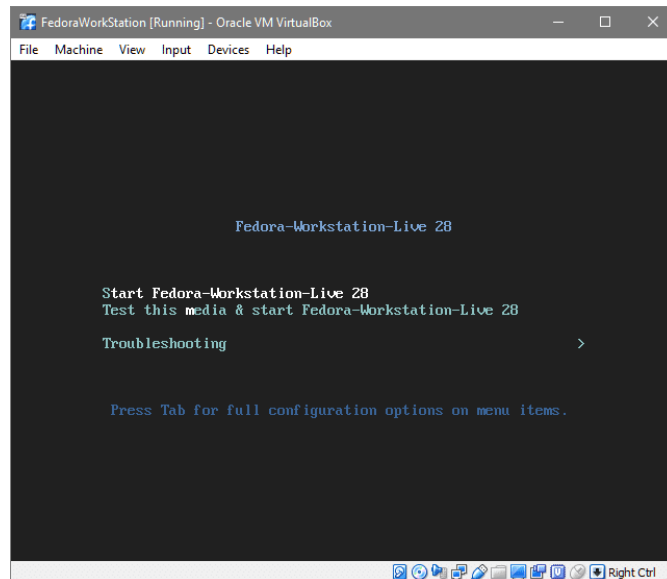Click on "Create" and your Virtual Machine is ready for Fedora.

Step 2: Installing the Operating System.

To start the VM, simply double-click on it from your VirtualBox GUI. Since there's no operating system installed, the virtual hard disk is not bootable. VirtualBox notices that this is the first time we are booting the system so it prompts us to select a start-up disk.
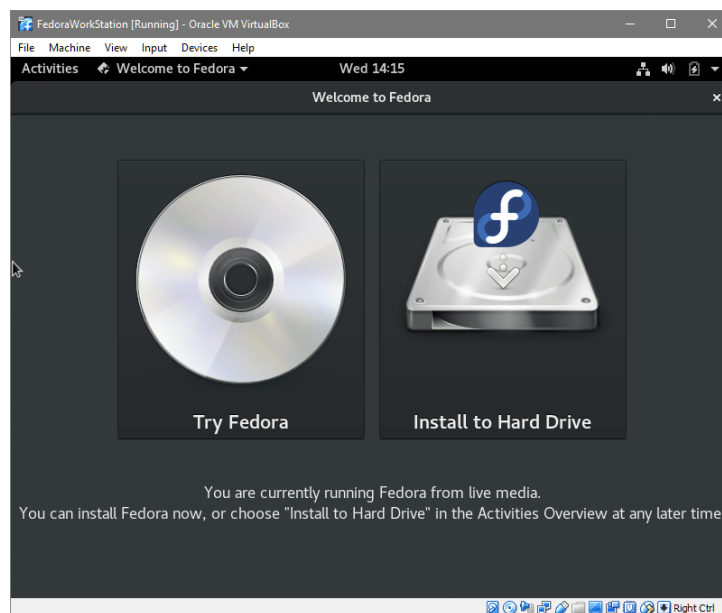
Click on the file icon, and locate Fedora .iso, that you downloaded earlier, inside your file system. Once that is selected, click "Start". Upon this you will be asked what is it that you want to do with this .iso. Since such live media devices are used not only for installation but for system recovery or rescue and troubleshooting.

But since we want to install the system we will select the top-most option which says "Start Fedora-Workstation-Live-28". Use arrow keys to go toggle through the options and return key to select the required one.
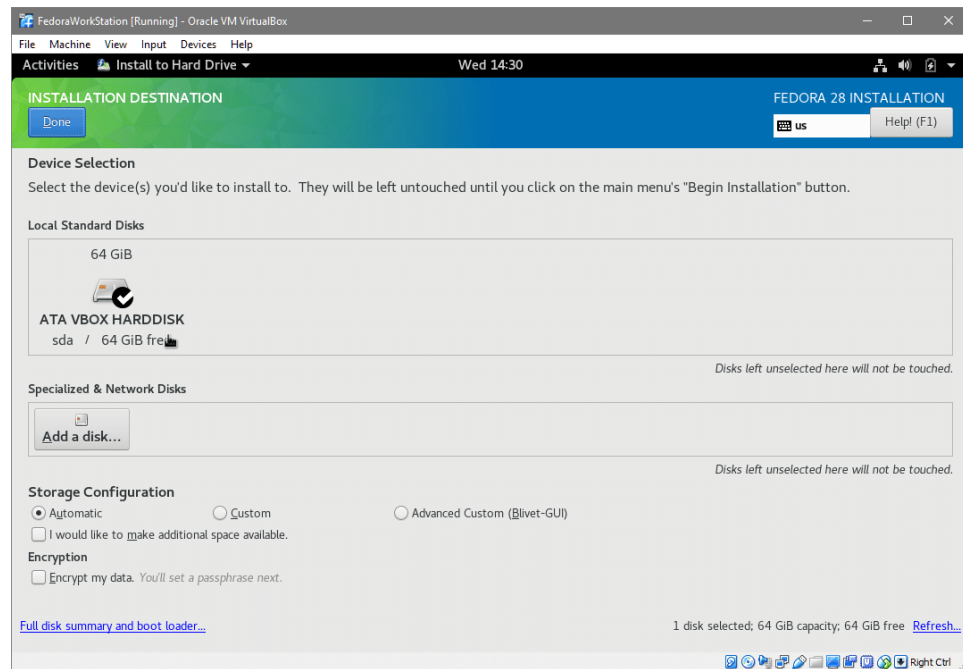

Once the live media is booted, Fedora would help us easily install the operating system on our Virtual Disk. The welcome menu would automatically ask you for that, as shown below:

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Select "Install to Hard Drive". Select your language, we assume English (US , UK or any country of you live in) would be a good choice, since you are reading this.
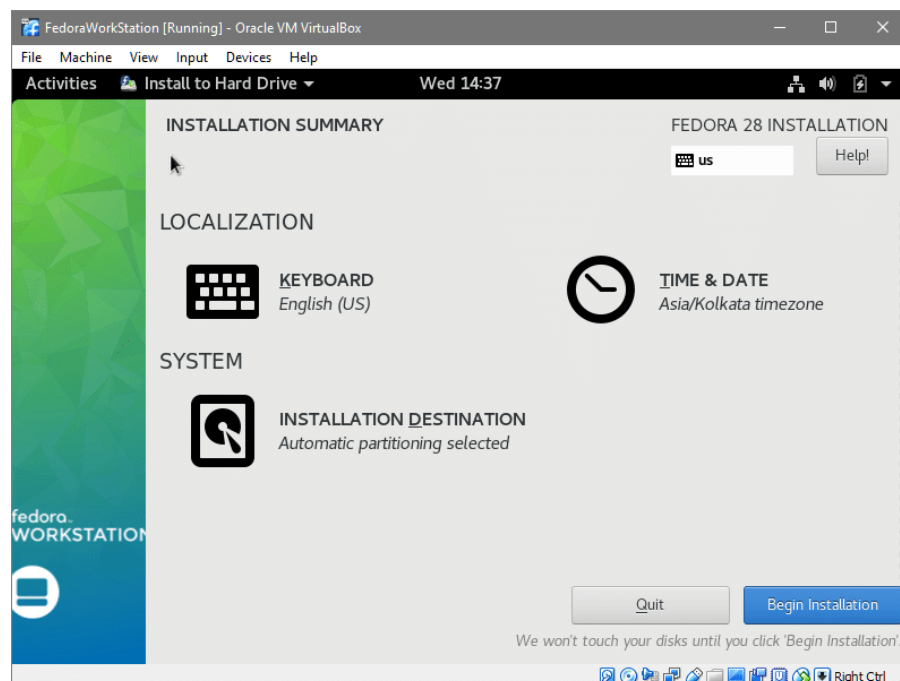
Once that is done, click on the "Installation Destination" so we can pick what device we are going to install Fedora on (in case, you have multiple storage devices attached to your system).

Let everything stay at its default value, and Fedora will handle the storage and partitioning for you. Unless you have a specific use case in your mind, in which case, feel free to experiment.

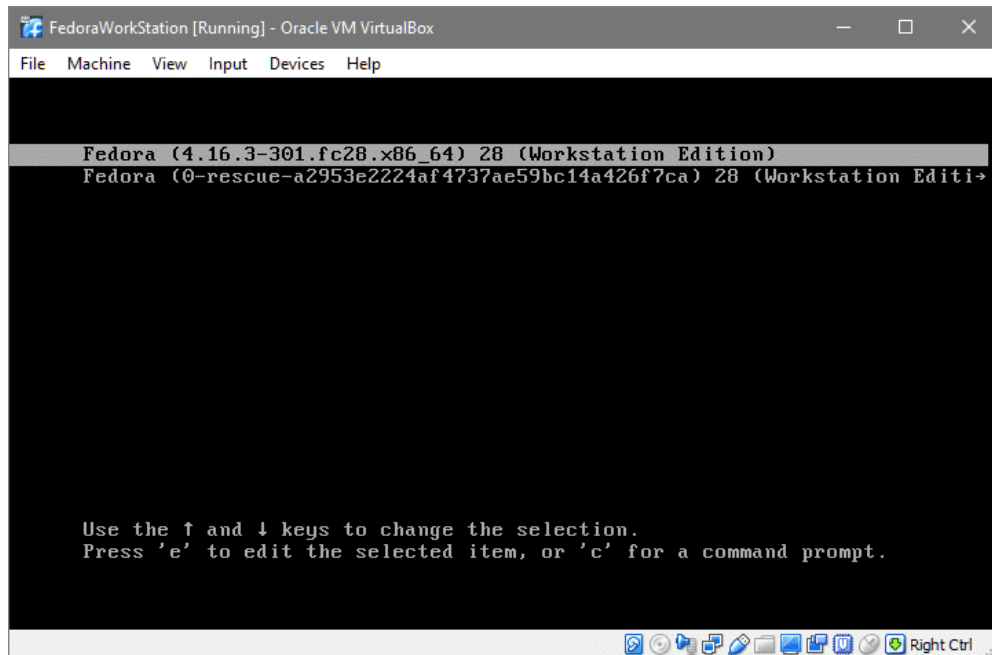Click "Done", on the top-left, once you have verified the destination (or configured it).

You will notice that the "Begin Installation" button, which was greyed out earlier, is now highlighted. Click on it and Fedora will start OS installation.

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This will take a while but requires no further assistance or intervention until it finishes installing the OS and boot manager. After the installation is complete, we shutdown the system to remove the installation media.

Step 3: User accounts and system updates.

Start the system. The boot menu will pop up, select Fedora and not the rescue option.

Now Fedora will greet you with a Welcome screen where it will ask you for permissions for collecting user data and crash reports, and if would you like to sign up using one of your many email or social media accounts. You can skip through these, if you like, and then you will come to the part where you set up a username and password.

Update your system by opening up a terminal and running the following commands:

$ dnf check-update

$ sudo dnf upgrade

We are done!

Document your answers in the learning journal.

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