

Scotti-BYTE Enterprise Consulting Services

Linux Tutorial: The Flexibility of the User Interface

Virtual Machines are a useful means to provide a way to learn about a Linux Distro. In a prior tutorial, we created an Ubuntu virtual machine (VM) in the Virtual Box hypervisor. In this tutorial, we will learn how to leverage the use of that virtual machine to learn about Ubuntu and also how that VM can be used to test various software and operating system configurations.

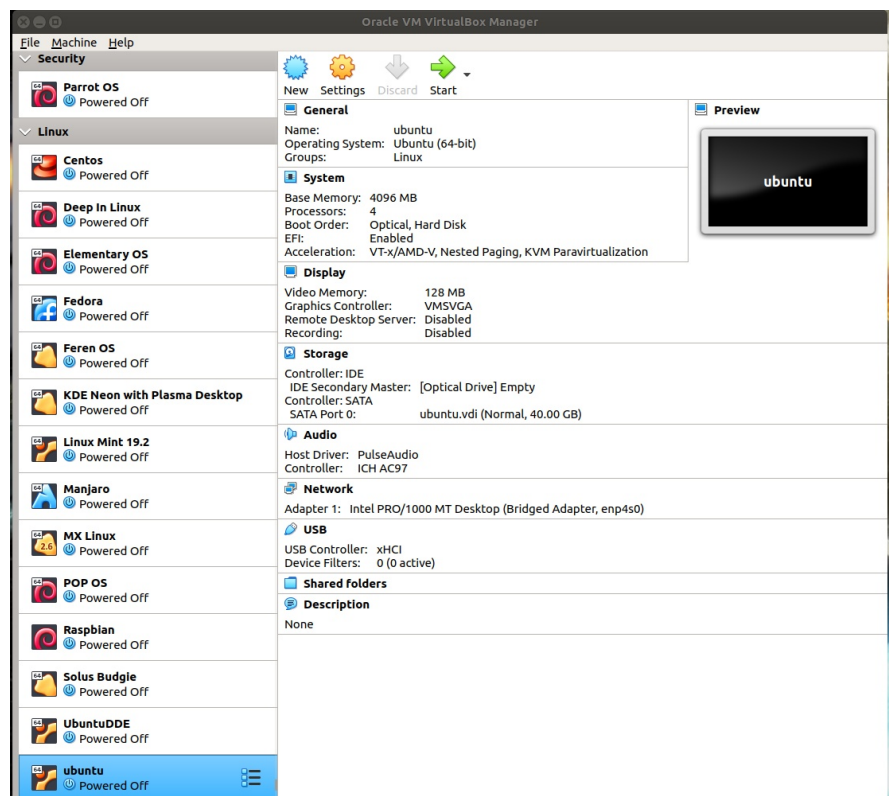
When you start Virtualbox, you will see your list of virtual machines down the left side of the page as in the screen image at right.

Our recently created Ubuntu VM is highlighted in the screenshot. Note that the information pane contains all of the details about the VM configuration.

A very powerful feature of Virtual Box is the ability to create "Snapshots" of a VM. A snapshot is a way to store exactly the way that VM looks at any point in time. You can create as many Snapshots as you want.

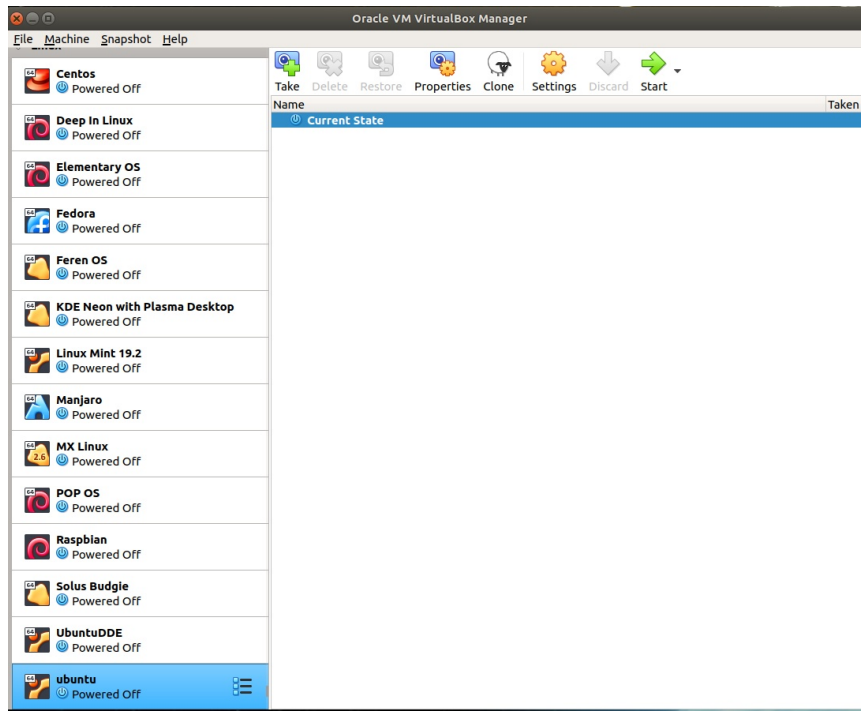
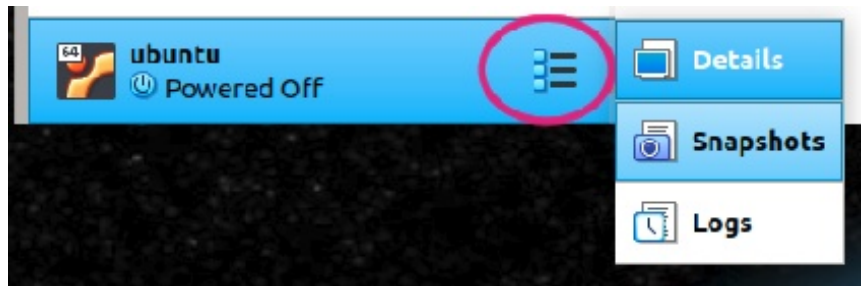
The purpose of creating a Snapshot is to be able to return to a previous configuration after you make a series of changes. For example, you may want to install a particular software to your Ubuntu VM. Suppose that in doing so, you end up issuing the wrong commands or you simply want to undo something that you have done and go back to how it looked before.

Snapshots provide that capability. To the right of the selected "Ubuntu" VM above, you will note a menu icon that is depicted by three horizontal bulleted lines.



To take a snapshot, click on the menu depicted in the image at the right and select "Snapshots".

The context of the Virtual Box Manager screen will change and a Snapshot manager will be displayed in the right hand pane.



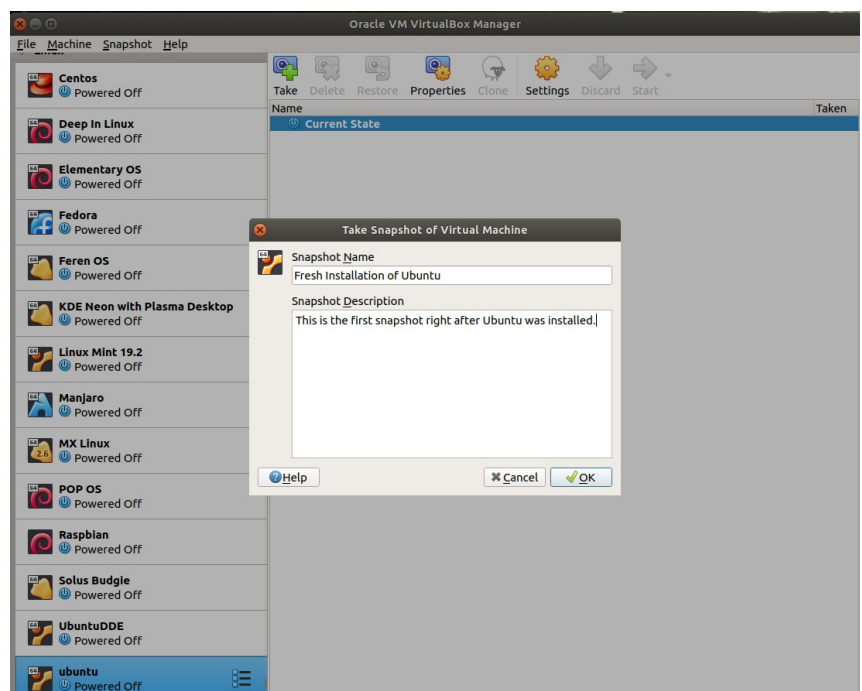
To take a snapshot, click the "Take" button. When the "take snapshot" screen comes up, give your snapshot a name and a description.

Once you type the name and description as shown in the image at right, click "Ok" and the snapshot will be stored.

From this point on, any changes that we make in the virtual machine could be rolled back to this initial state.

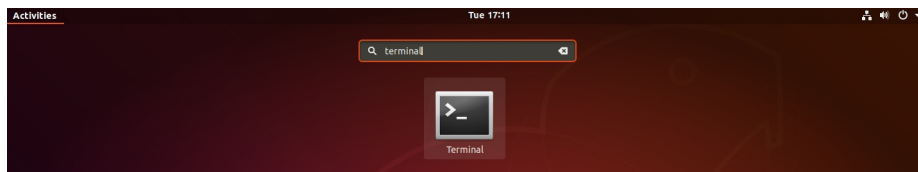
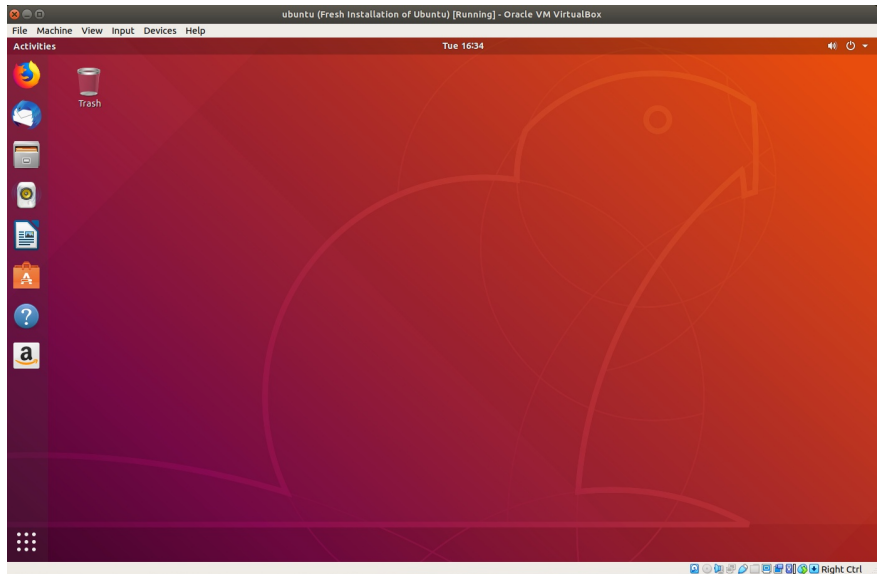
Note if you store any data in the VM and then decide to restore this snapshot, that data would be lost.

As long as you remember that, snapshots will serve you well.



Now start up your Ubuntu VM. As an exercise, we will show the flexibility of a linux operating system by modifying the Ubuntu desktop interface. The goal will be to make the Ubuntu desktop look like the Apple Mac OSX interface.

Open the Firefox web browser and point your browser to <https://extensions.gnome.org>. Next open the "App drawer" and type in terminal and launch terminal.

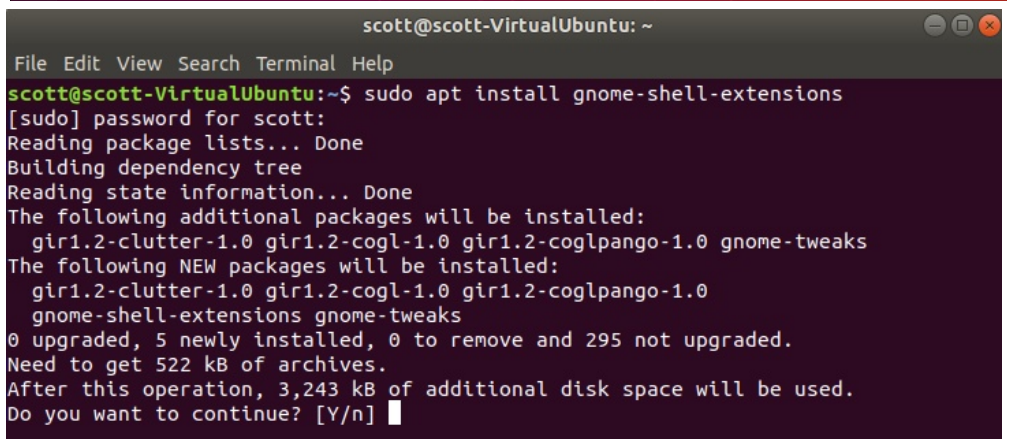
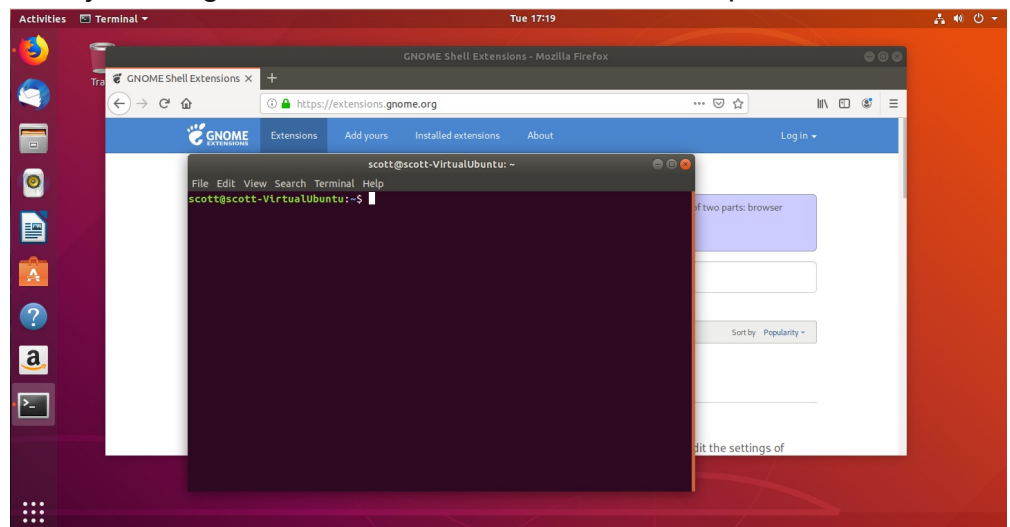


Gnome, pronounced "Gnome" is the graphical desktop shell that Ubuntu and several other Linux distros use as the desktop interface. Gnome

extensions allow you to make major changes in the look and feel of the desktop. Unlike Microsoft Windows, the desktop environment allows you to change virtually everything.

In the terminal window, we need to install Gnome extension support by entering the following command "sudo apt install gnome-shell-extensions". Then enter your password and acknowledge that you want to continue with the installation. After that, also install the chrome Gnome Shell with an additional command in the terminal "sudo apt install chrome-gnome-shell". Exit the terminal.

Now click on the hypertext in the browser



that says "Click here to install browser extension". Click the "continue" prompt and finally the "Add" prompt. Refresh the Firefox web page and you should no longer see any warnings about the Gnome extensions not being enabled.

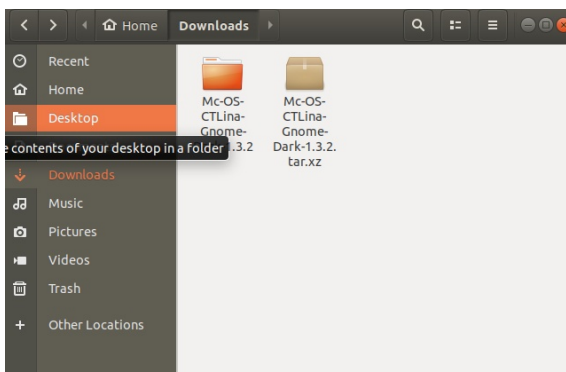
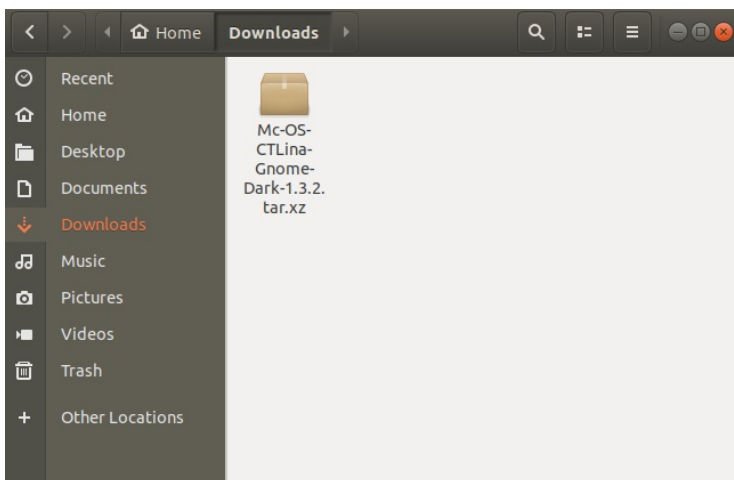
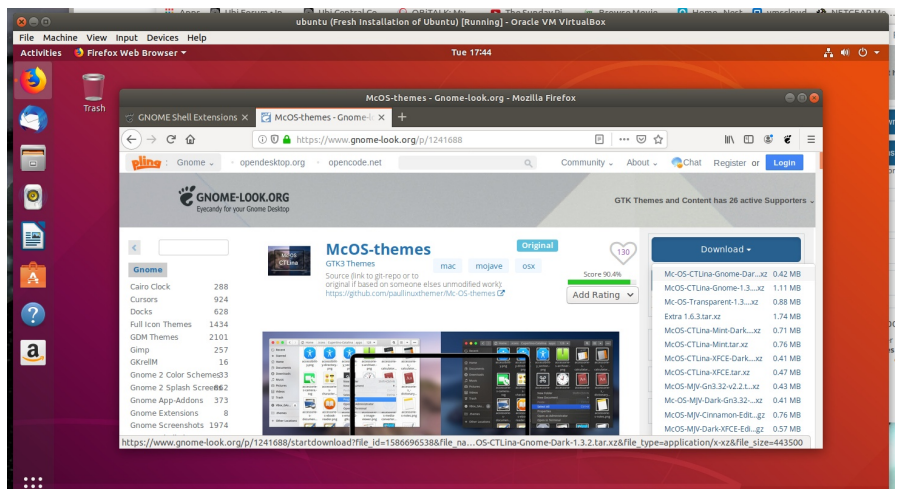
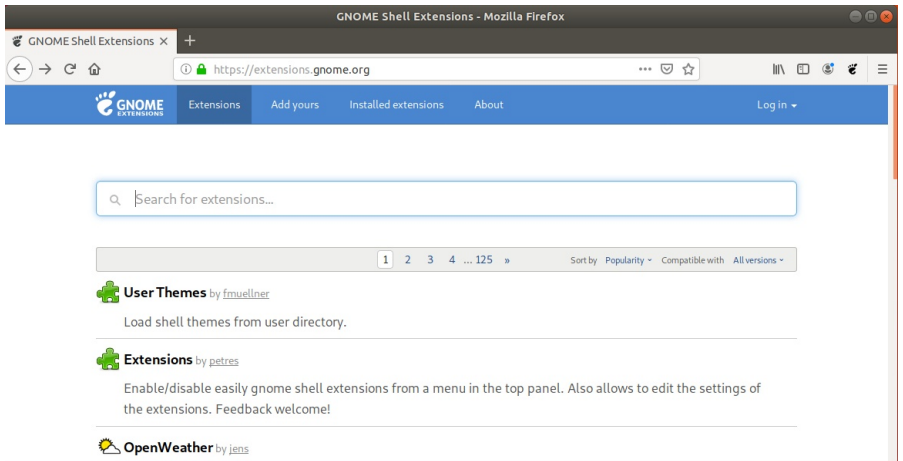
Open another browser tab in Firefox and go to <https://gnome-look.org>. Once there, search for McOS-themes.

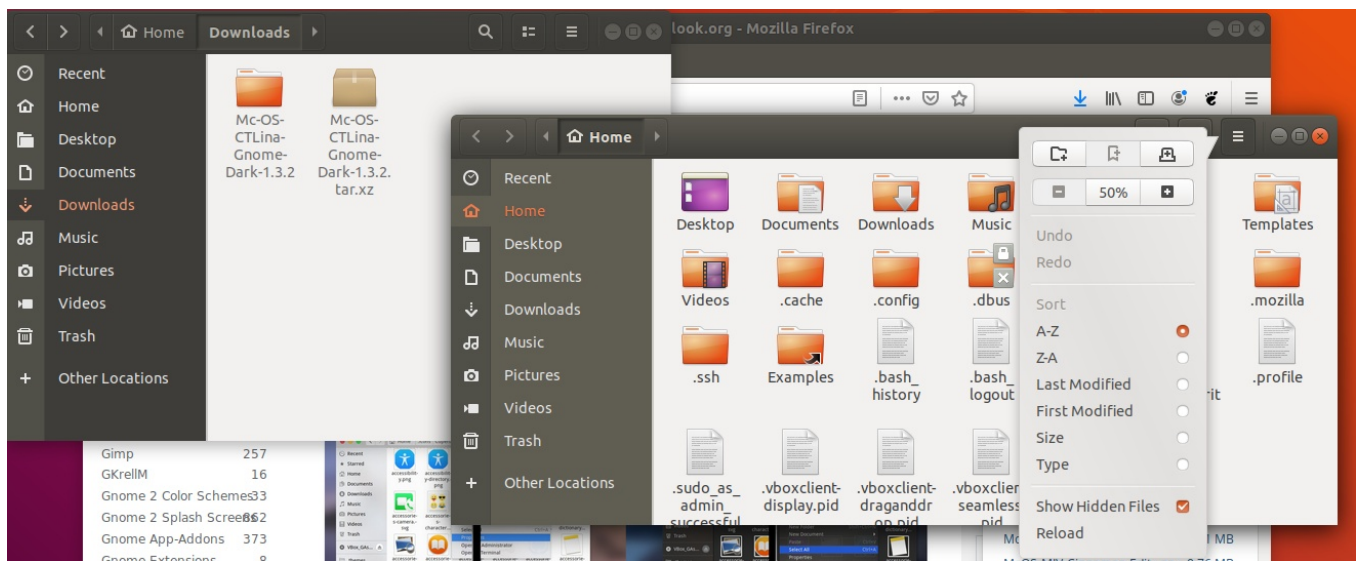
Click the "Download and select the first theme. Be sure to select the "Save File" option. You should be saving a file called "Mc-OS-CTLina-Gnome-Dark-1.3.2.tar.xz" which will be stored in your Downloads folder.

Open your "Files" app from the Unity menu and you should see the downloaded file.

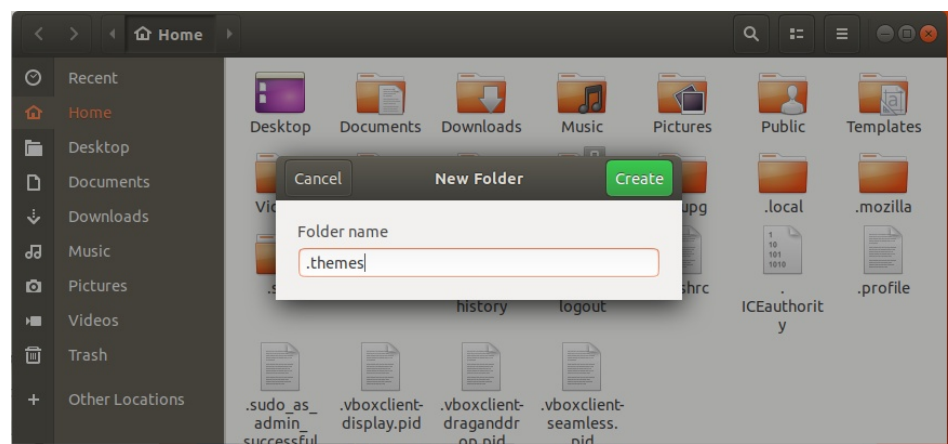
Double click the downloaded file archive and you will be in the archive manager. Choose to extract the archive and it will be extracted into the download folder.

This is how your Downloads folder should look now.





Open another "Files" window by right clicking the "Files" icon in the Unity bar and choosing "New Window". When this new file window opens, change it to show "Hidden Files" as shown.

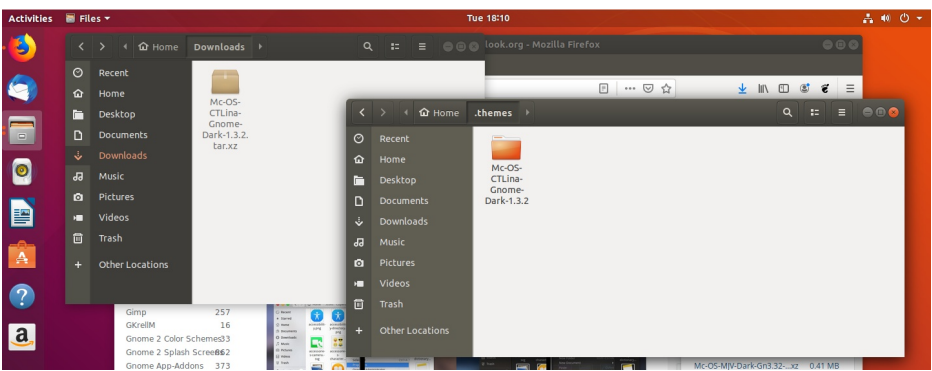


In Linux, any file beginning with a period (.) is a hidden operating system file.

In the new files window, right click on white space and choose to create a new folder. Name the new folder ".themes".

Now move inside of the new ".themes" folder that you just created and drag the folder from the "Downloads" folder that you extracted to the new ".themes" folder.

You should see a display like the one at left now.

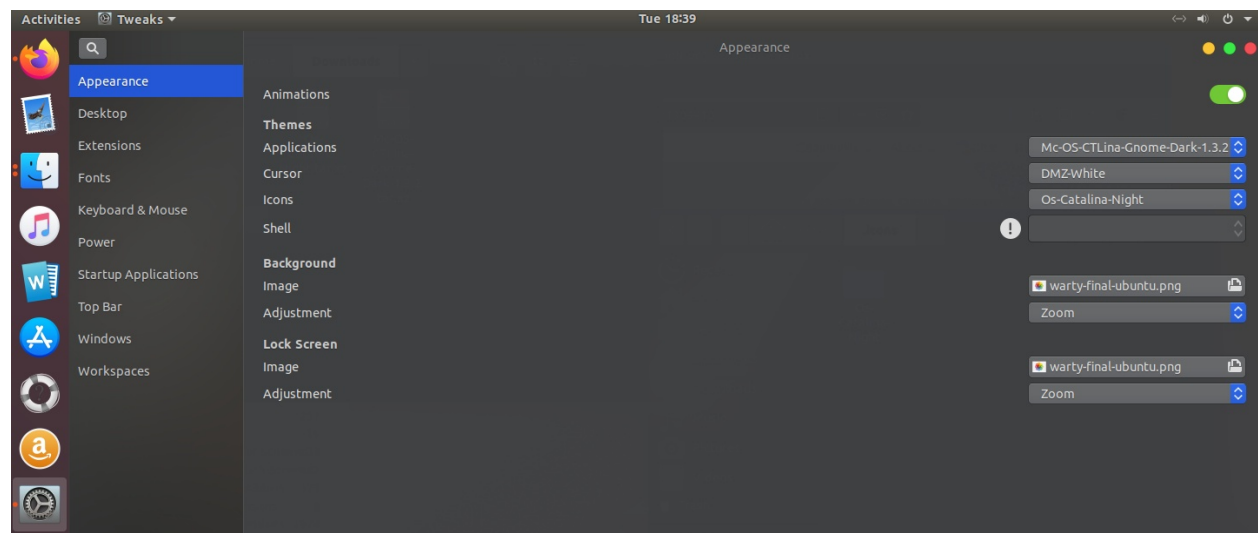
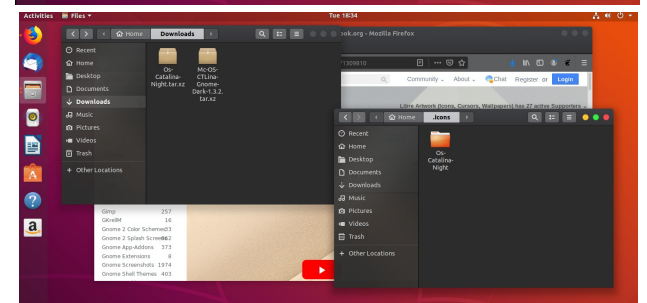
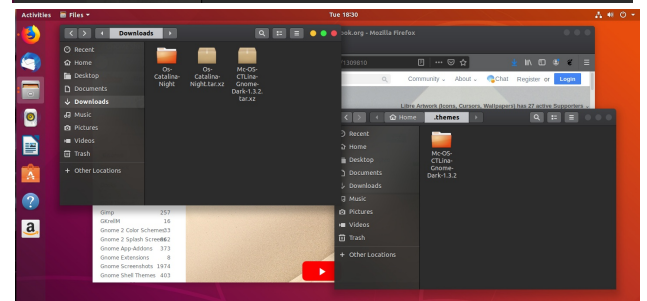
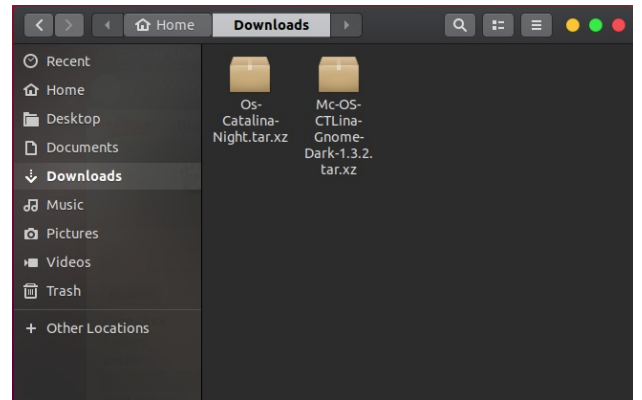


Now go back to your Firefox web browser and go to "<https://www.gnome-look.org/s/Gnome/p/1309810>" and click Download. Choose to download the Os-Catalina-night icons and once again save the file.

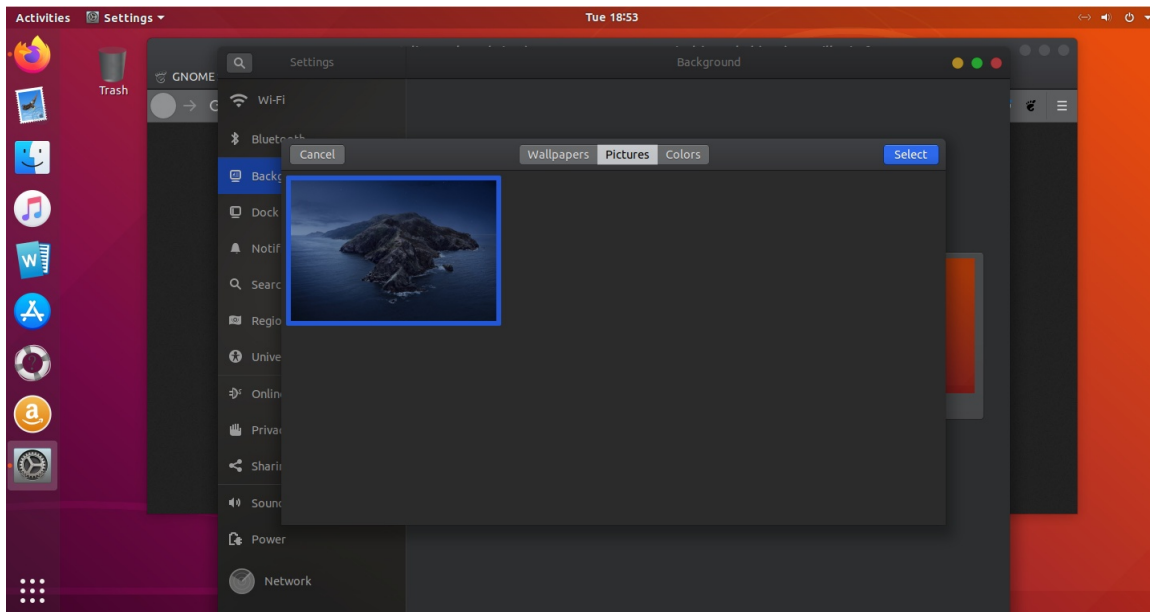
The file will appear in the Downloads folder. Double click and extract the downloaded archive into the Downloads folder.

Your screen should now appear as on the right. In the .themes file window, move up one level to "Home". Create a ".icons" folder using the same procedure to create the ".themes" folder and then drag the extracted icon folder into the new folder.

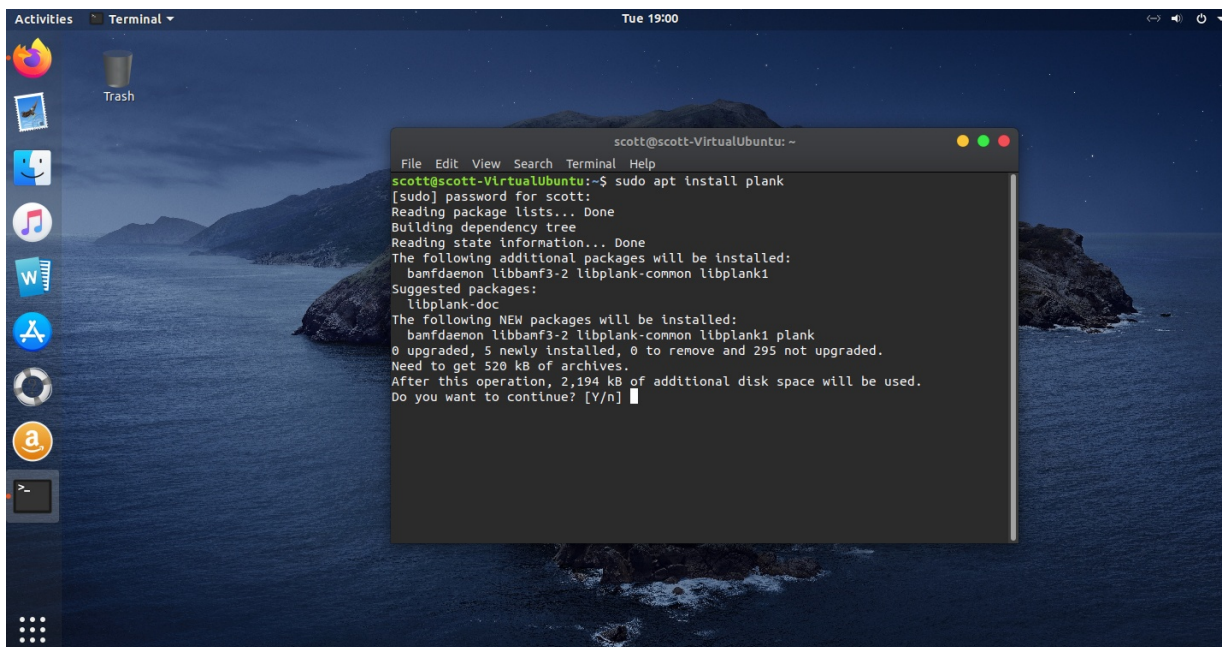
Your desktop should appear as follows. You are probably wondering why my files folders are dark themed now and yours are not. That's because I applied the desktop theme earlier. To make all these changes take effect, you will need to launch the "Tweaks" tool from the app drawer. Make the changes in the Tweaks tool below to apply the new themes.



You can also search for MacOS wallpapers online. When you find one that you like, download and save it to the pictures folder. Right click an empty space on the desktop and choose, "Change



Background". On the following screen, choose "Background". Click on Pictures at the top of the screen and choose your picture.



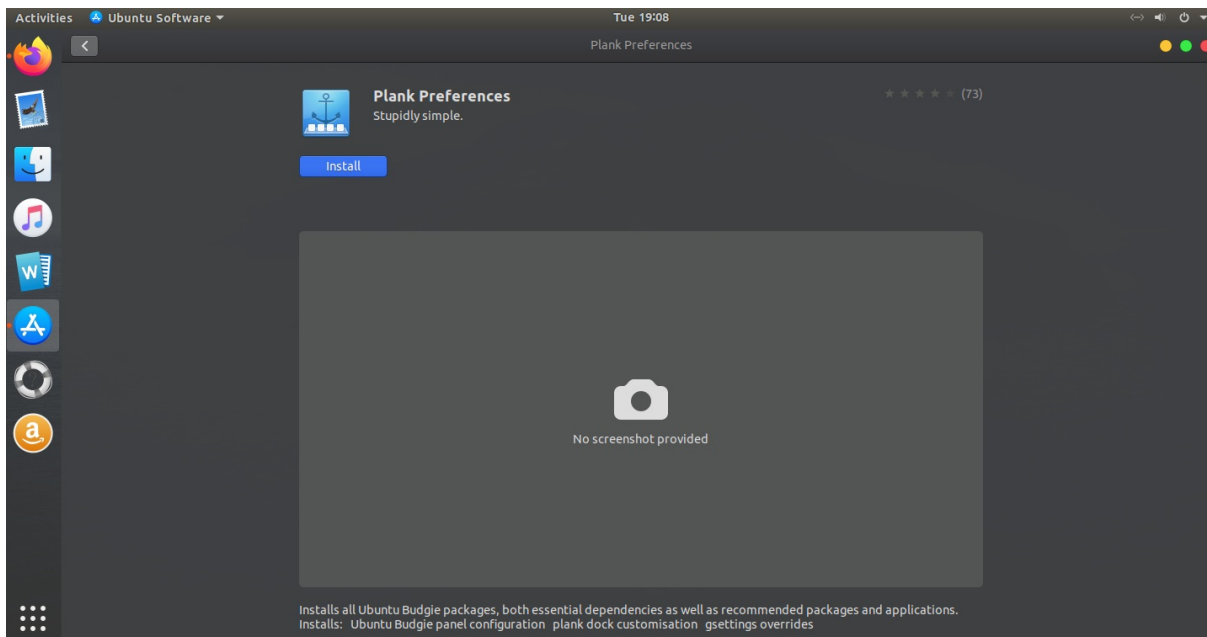
Now we need to change the Dock from the Unity bar to a more traditional Mac style dock. To do so, open a terminal and install "Plank" as seen in the screen above. Type "Y" to complete the installation.

Plank is not available in the Ubuntu Store and so we needed to install it the terminal.

You can close the terminal now. Go to the app drawer and run plank.

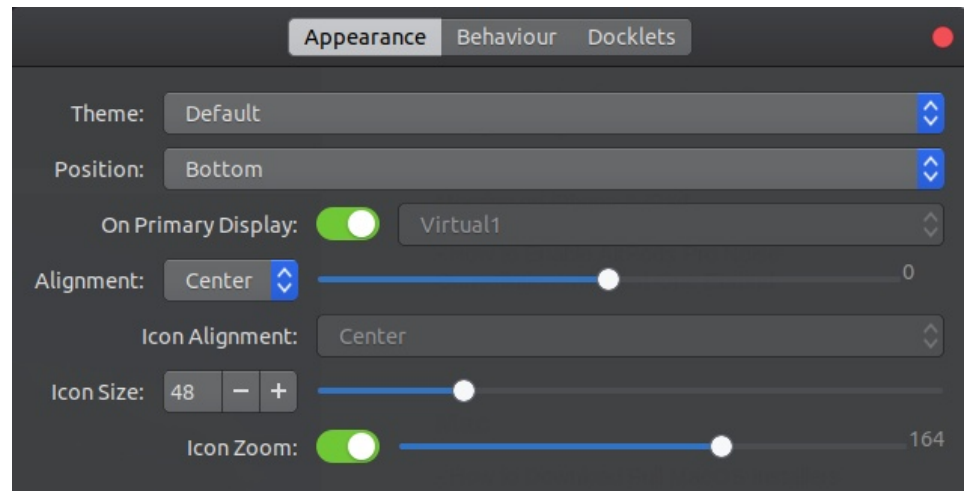


Your screen should now appear as above. Note that we have both the "Plank" dock and the Unity Dock. Now we need to turn off the Unity dock.



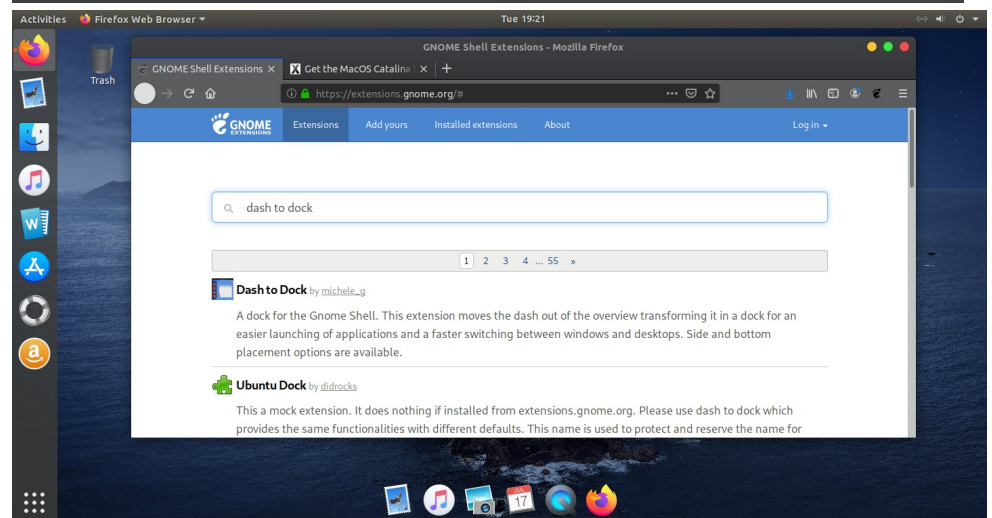
Open the Ubuntu Store, search for and install "Plank Preferences" as indicated above accepting the defaults. Launch the plank preferences and turn on icon zoom so that the dock enlarges the icon in focus like on a Mac desktop.

Your Plank Preferences should be set as on the right.



Install the dash to dock Gnome extension as shown on the right.

Turn it on and accept the defaults.



Your Ubuntu Desktop will now look like the screen on the right. You can still get to the App drawer and the unity bar if needed by clicking Activities in the upper left hand corner of the screen.

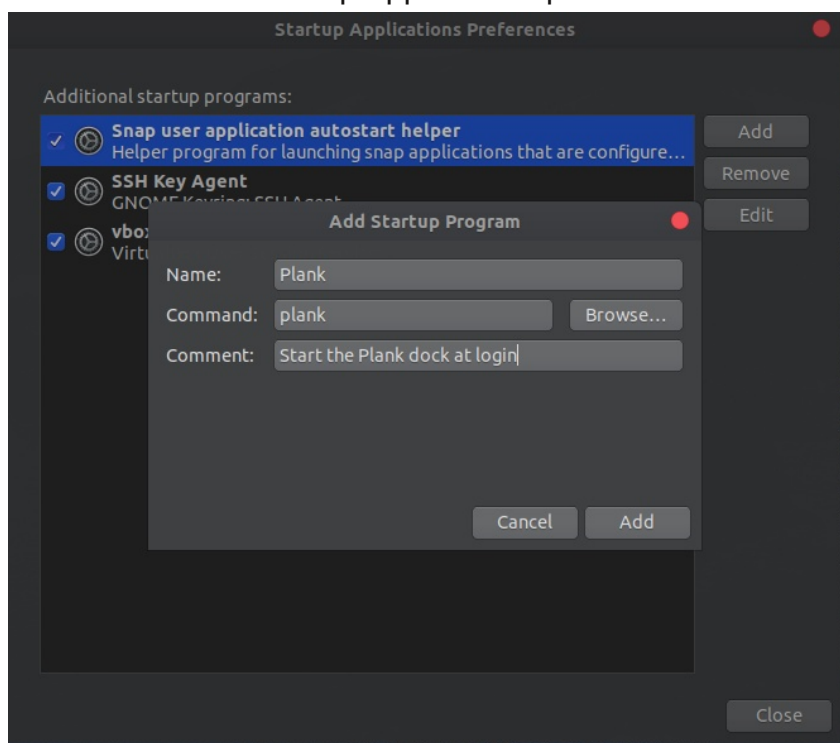
If you log off and back in, you will notice that the Plank Dock goes away.



To fix this, click on "Activities" in the upper left of the screen and then open the app drawer. Type "startup" in the search field. Launch the "Startup Applications" with the gear looking icon.

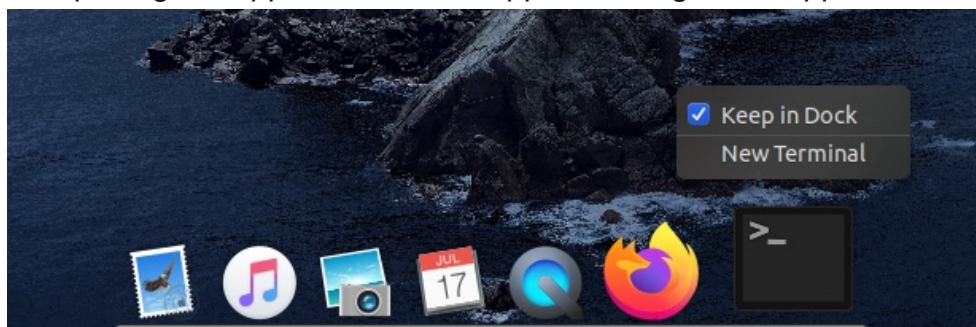


Click "Add" in the Startup Applications preferences and enter the fields as follows.



Now click "Add" on the screen above and then close the Startup Applications Preferences screen. Log off and then back in. The Plank dock will be visible and the Unity dock will not be visible.

Note that you can launch any program from the app drawer still by starting with the "Activities" button on the top panel and then opening the app drawer. If an app is running, it will appear in the "Plank" dock. You can right click its icon as shown on the right and select keep in dock. Similarly, you can also uncheck the keep in dock to remove an app from the dock.



Here is how the completed screen looks.

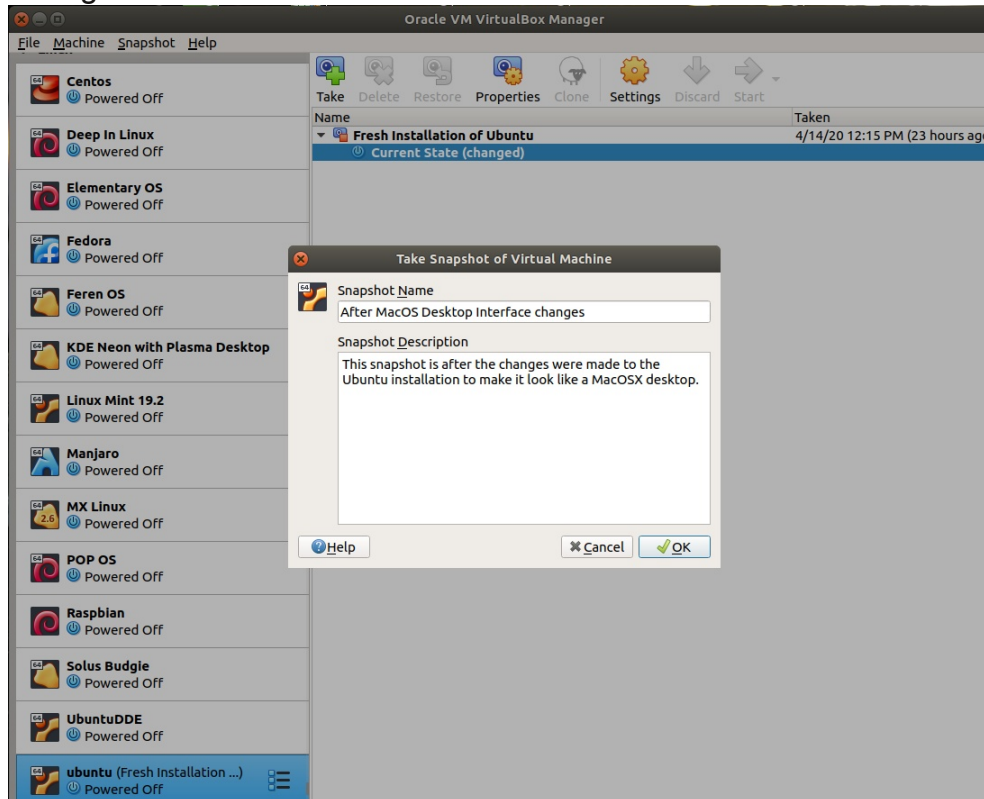


Below is an actual MacOSX screen.



You can see that there are differences, but this tutorial was intended to show how easy it is to make major modifications in the user interface of Ubuntu or any Linux Distro. You could take this further by adding the trash can to the Plank and modifying the top bar to look more like MacOSX.

Now, shutdown your Ubuntu VM. and click on the "Take" button at the top of the VirtualBox Manager screen to take a screenshot of our modified VM.



After you click OK in the above screen you will have both the snapshot after the initial installation and also the Snapshot after the user interface changes. You can use these snapshots to return the VM to the state of when the snapshot was taken.

This is one of the great powers of VMs. The ability to capture and restore a point in time configuration.

If you had a "bare metal" installation of Ubuntu not in a virtual machine, there is a system configuration change tracking mechanism in Linux called "TimeShift". Timeshift does not track user data, but only tracks changes to the operating system files. This allows a point in time restoration of a bare metal operating system without affecting user files.

