

INTRODUCTION TO COMMAND LINE AND VIRTUAL MACHINES



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What is Unix / Linux?

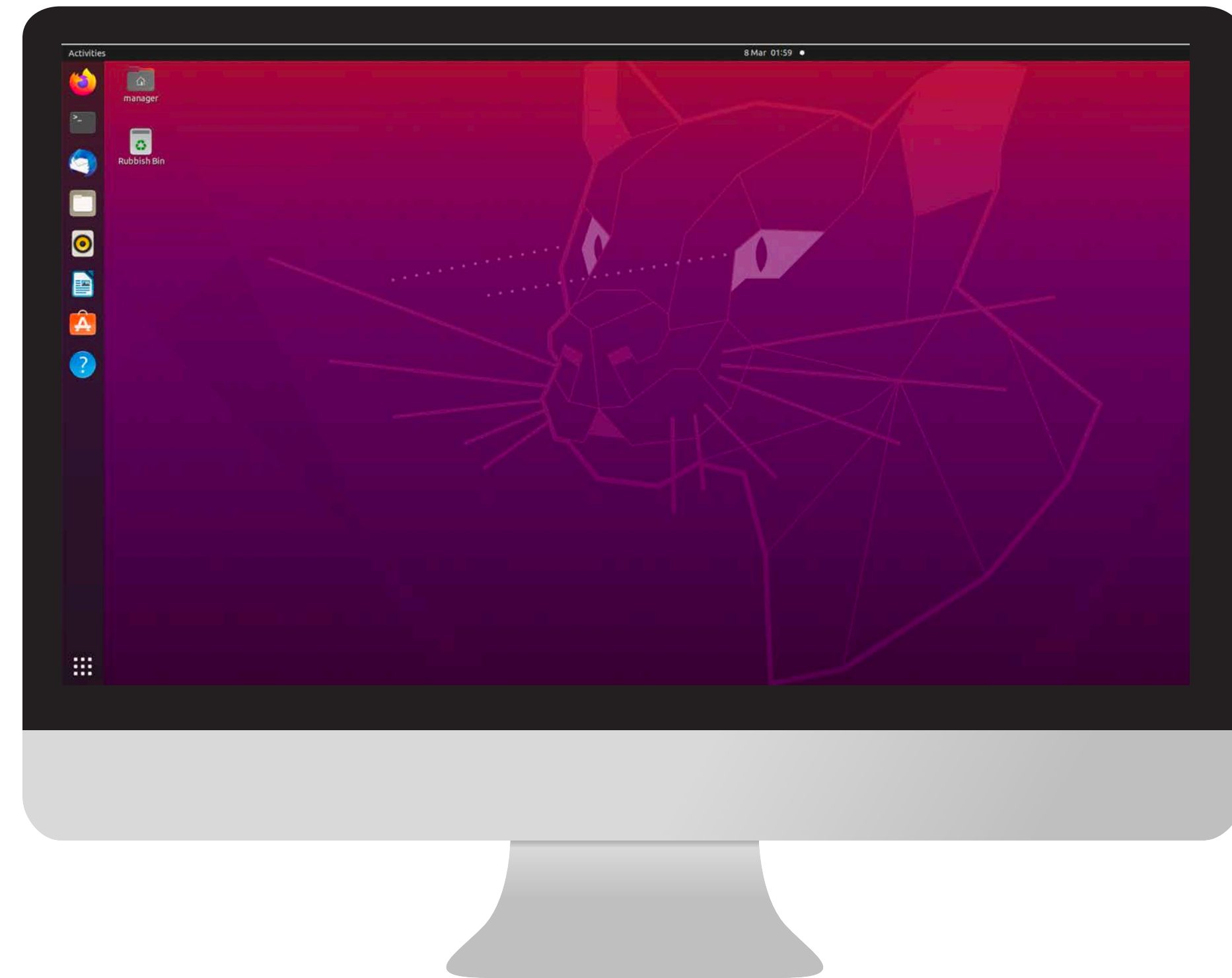
Standard operating system
(alternative to MS Windows, Mac OS)

Provides a way for you to interact
with the computer

Many 'flavors' of Unix, using Linux

- Ubuntu
- Centos
- Debian

Typically free



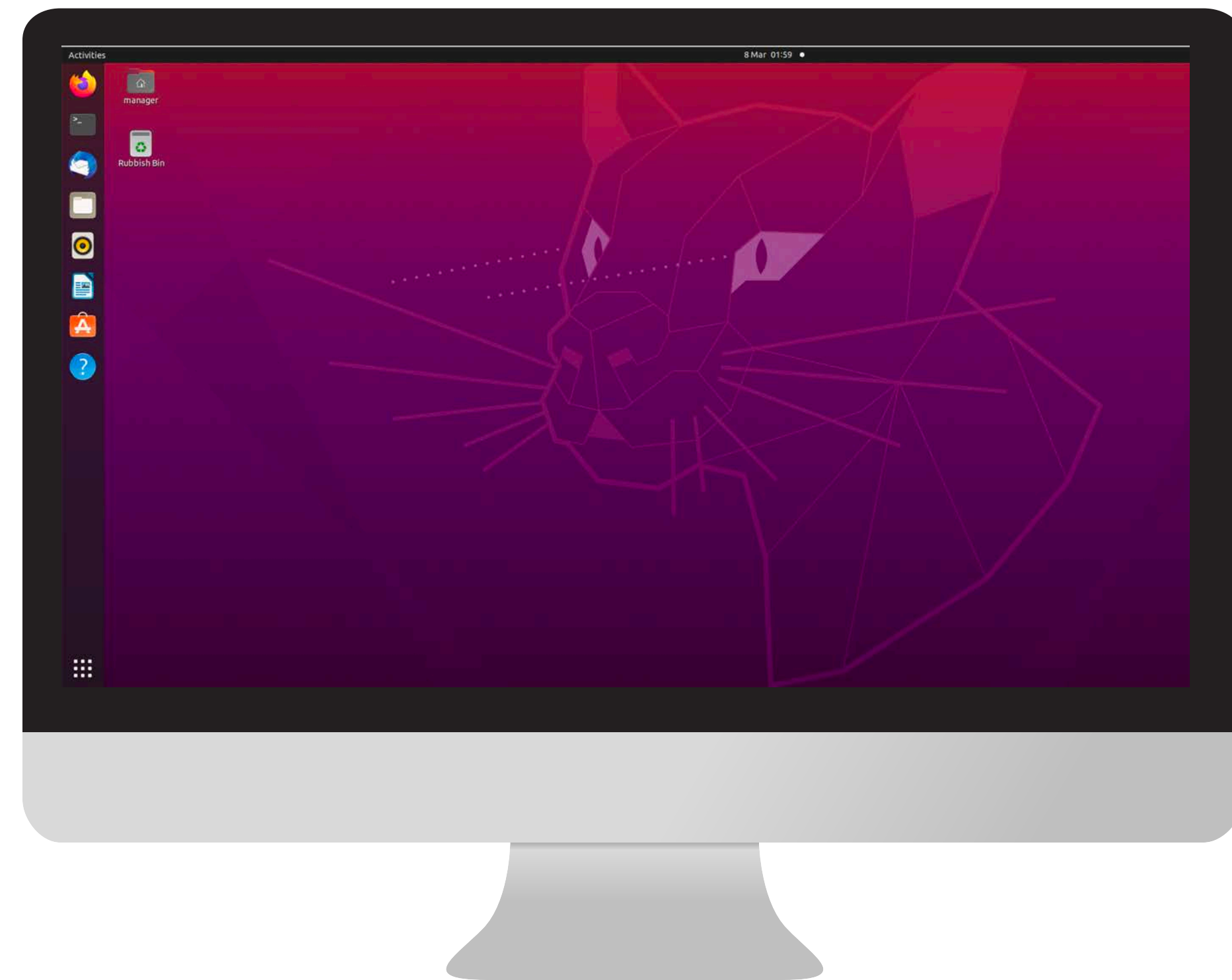
Why use Linux / Unix ?

Many bioinformatics programs produce outputs that are large text files

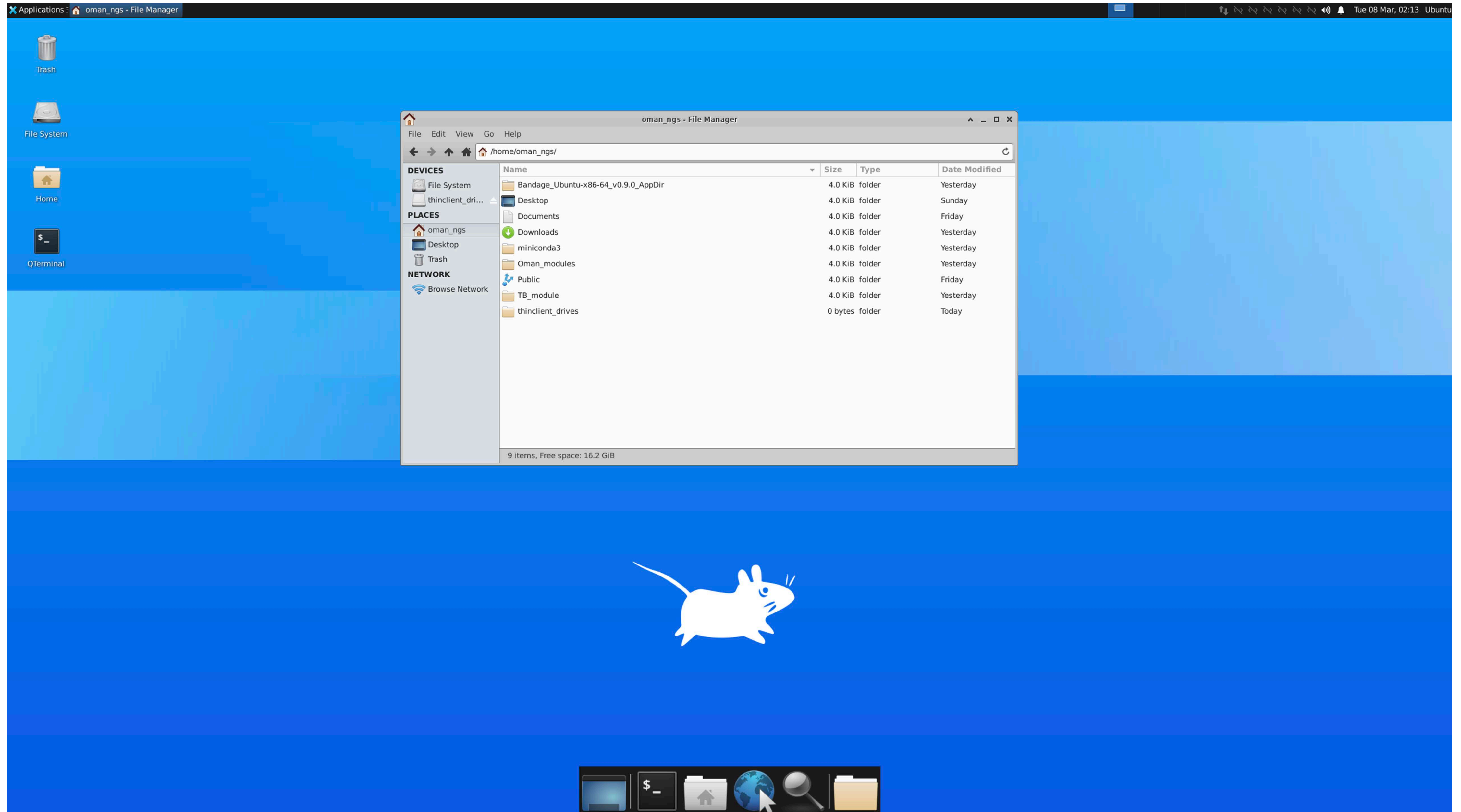
Unix is very suitable for dealing with such files

Powerful and flexible commands for processing large text files

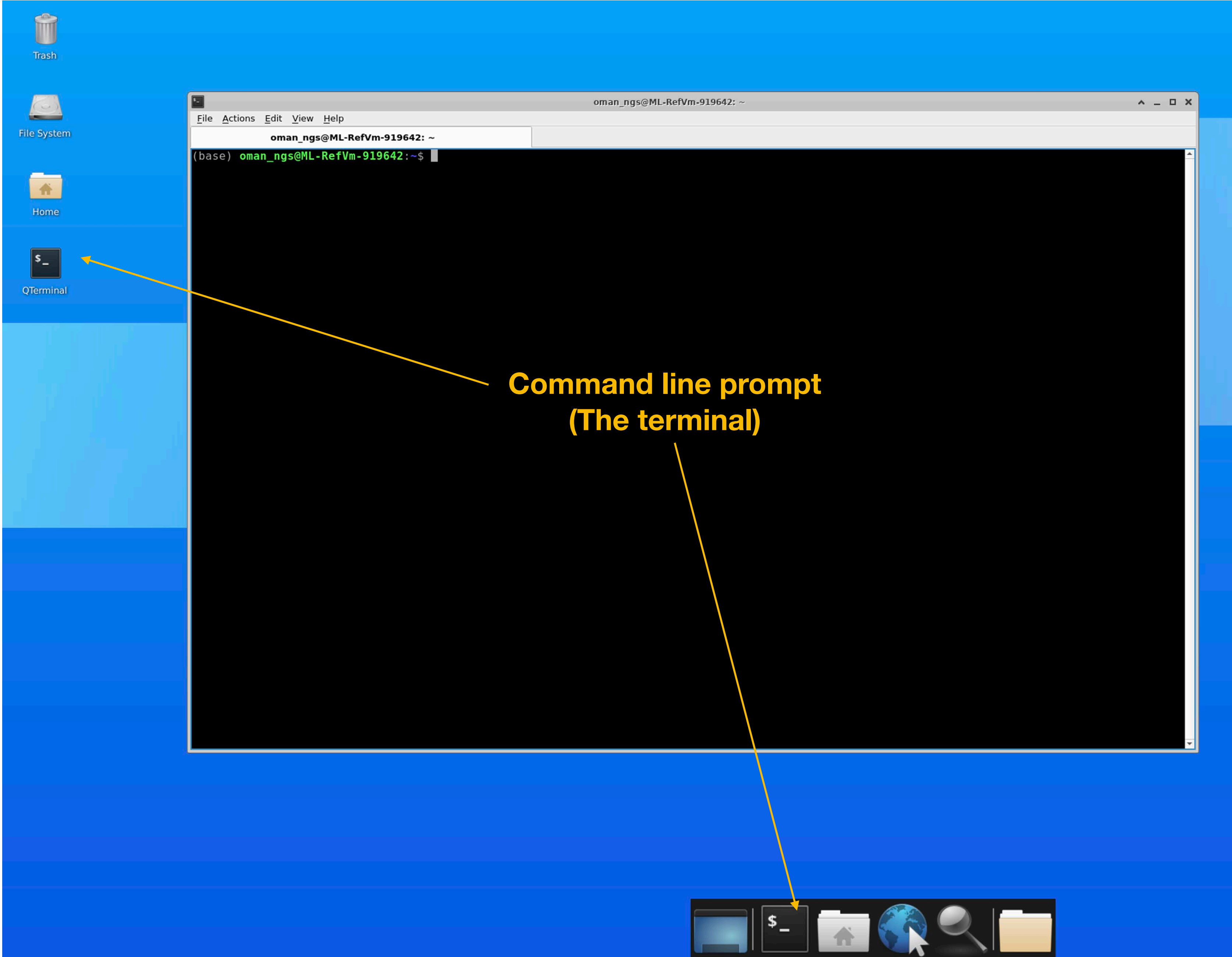
Widely used in scientific community



Using Linux



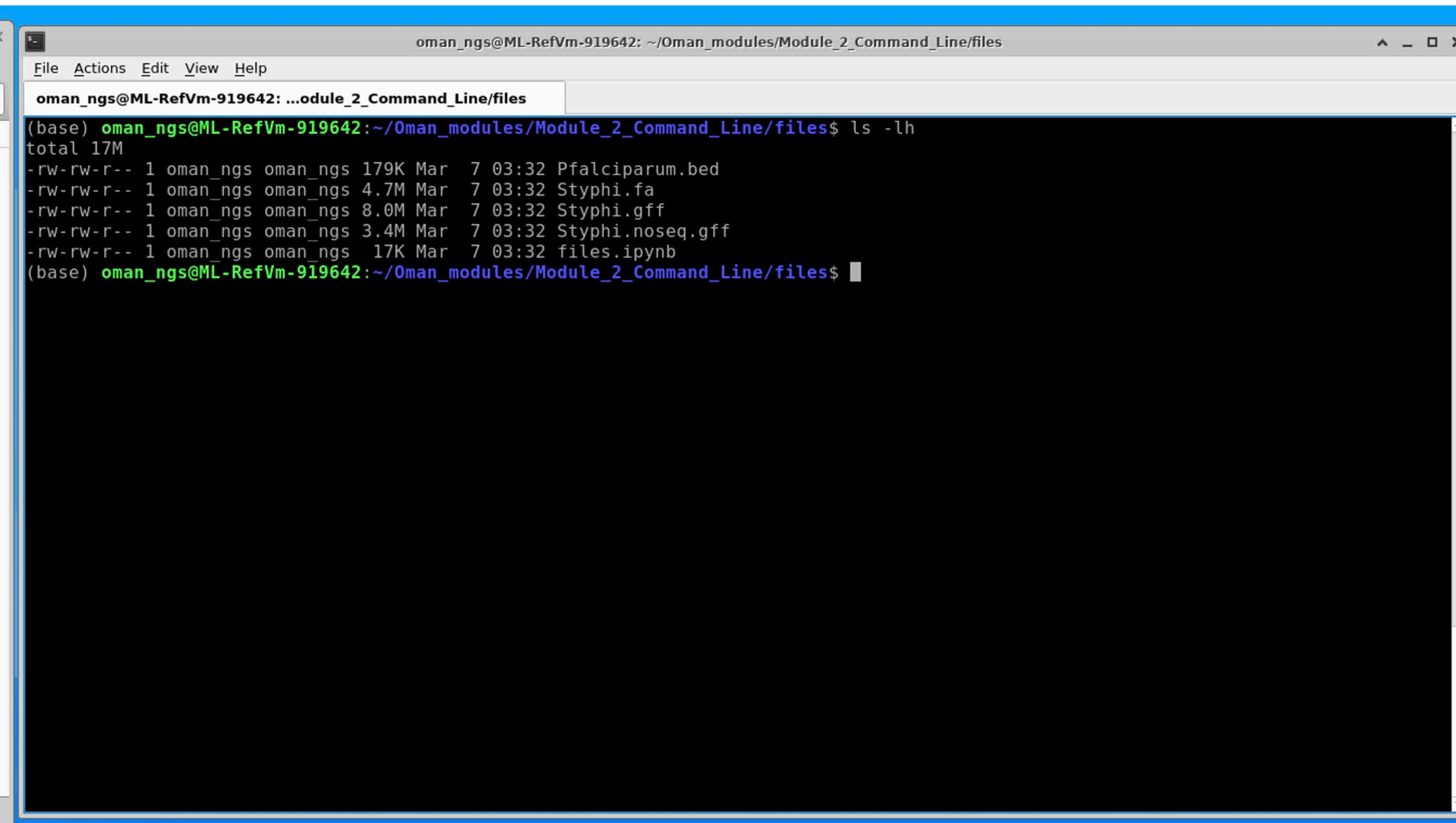
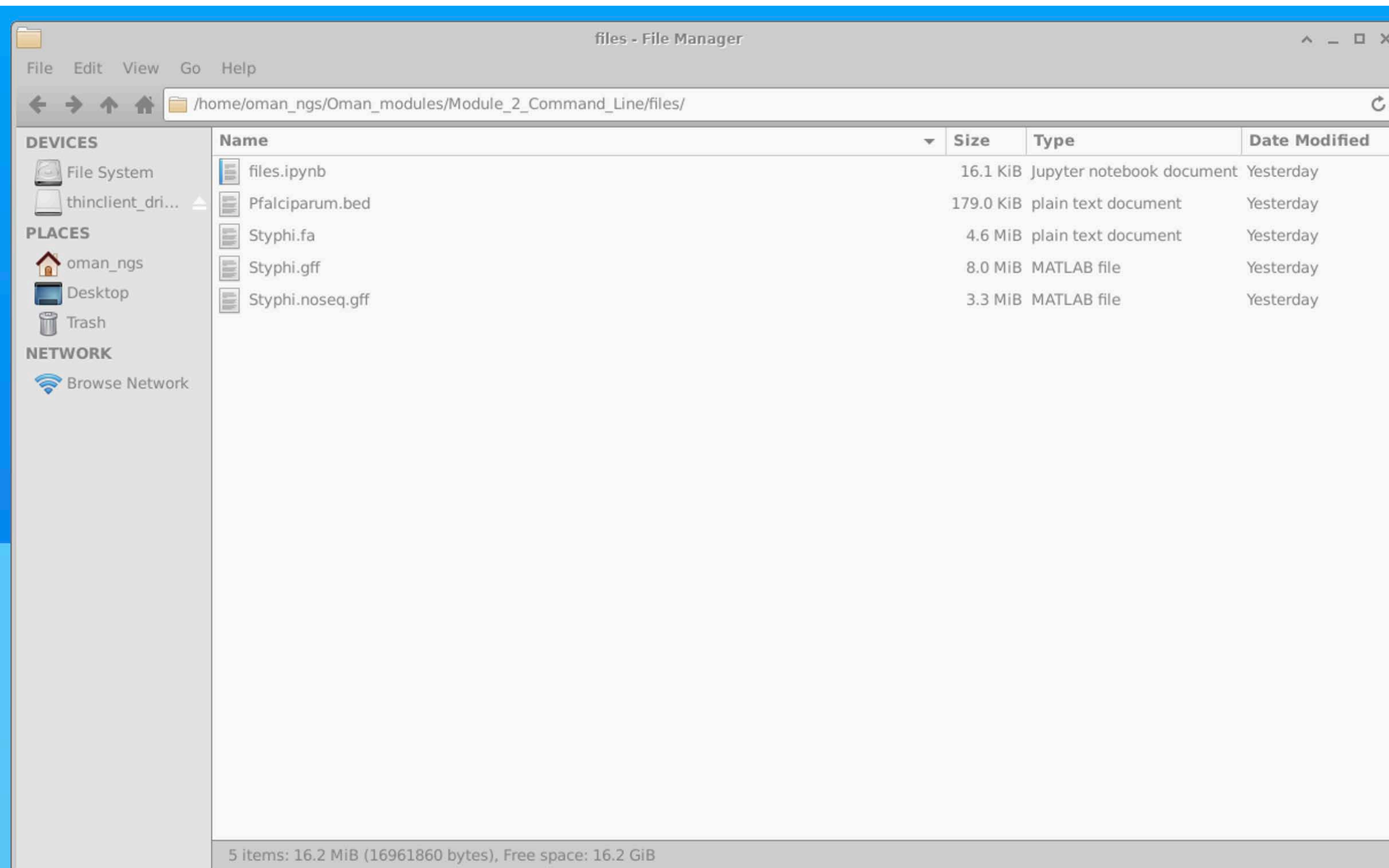
The Command Line



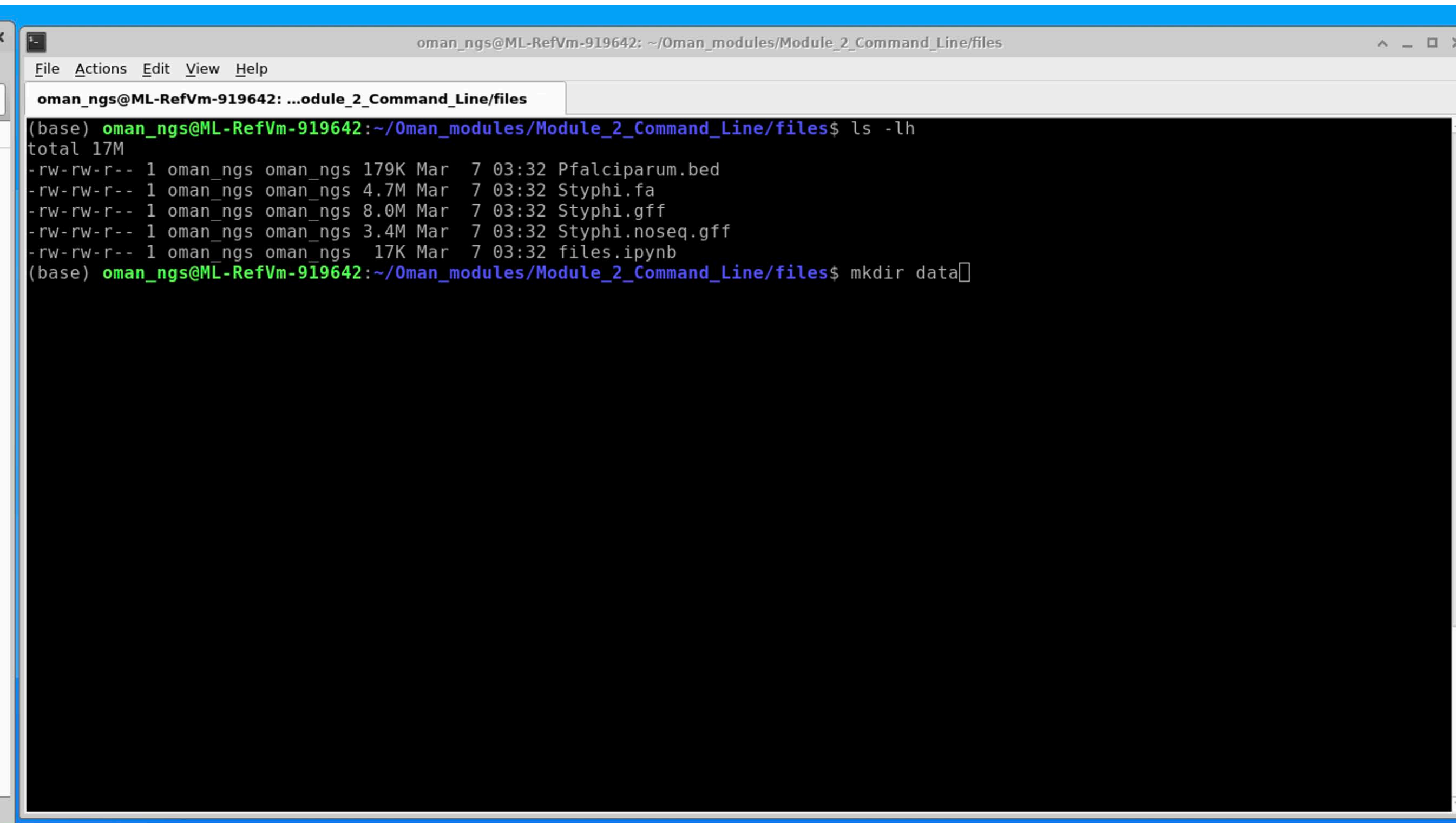
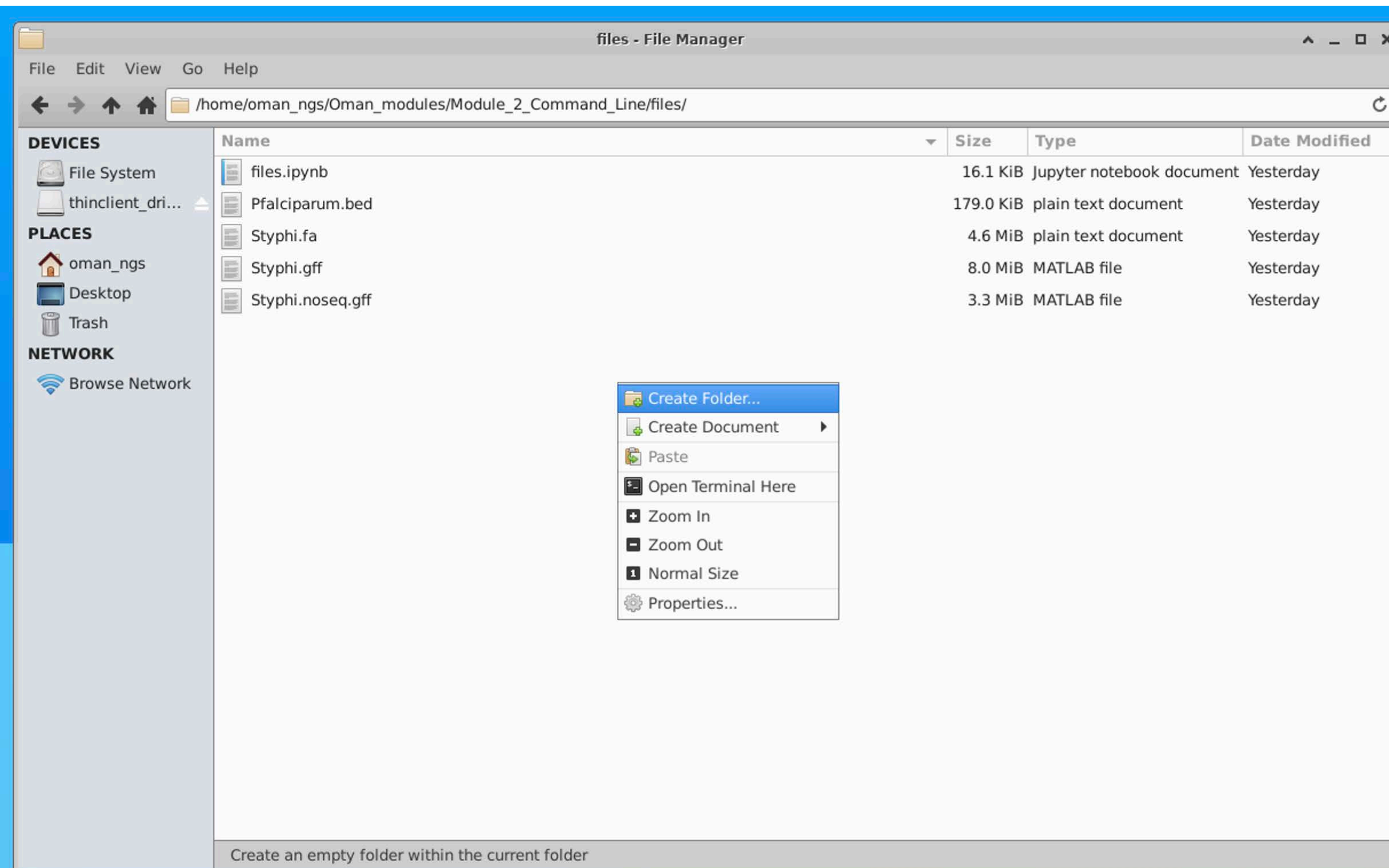
Common Commands

Command	What it does
<code>ls</code>	List the contents of the current directory
<code>cd</code>	Changes a directory
<code>mv</code>	Moves a file
<code>cp</code>	Copies a file
<code>rm</code>	Remove a file
<code>less</code>	Displays the contents of a file
<code>head</code>	Displays the first ten lines of a file
<code>tail</code>	Displays the last ten lines of a file
<code>cat</code>	Concatenate files together
<code>pwd</code>	Print working directory
<code>mkdir</code>	Make a new directory

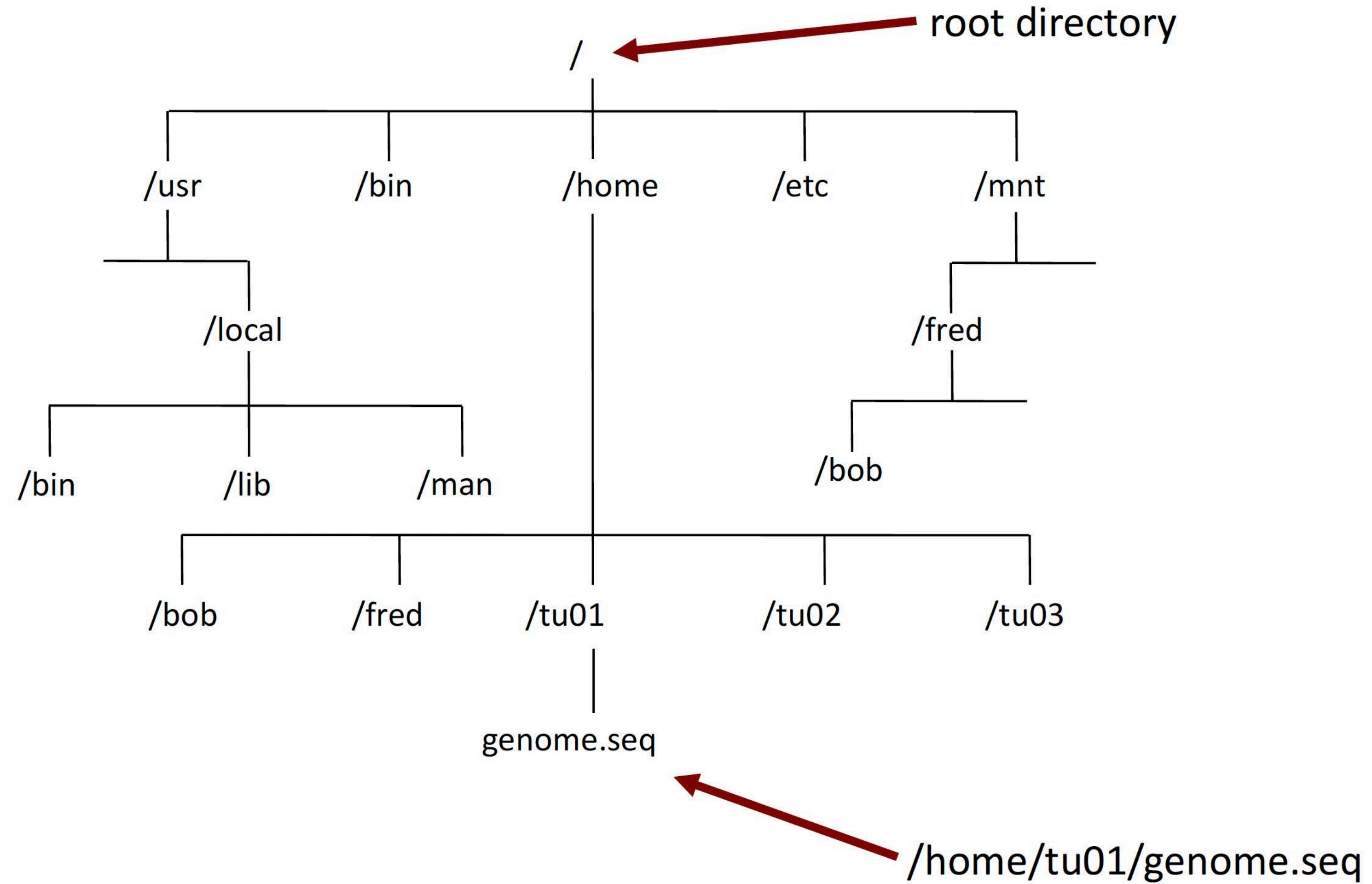
ls command



mkdir command



Directory structures



Unix tips and tricks



Unix is case sensitive

- Typing LS is NOT the same as typing ls

You need to put spaces between

- a command
- the values passed to the command

Unix is not psychic!

- If you misspell the name of command or a file it will not understand you

Error messages are often really informative. Read them carefully

Organization is key!

- File names, directory structure, commands use



VIRTUAL MACHINE



Step 1 : Email invite

Register for Lab - OmanNGS » Inbox x



Microsoft Azure <azure-noreply@microsoft.com>
to me ▾



Sun, Mar 6, 9:42 PM (22 hours ago) ☆ ↶ ⋮



Daryl Domman invited you to the lab: OmanNGS

Register now to access the virtual machines in the lab.

[Register for the lab >](#)

[f](#) [t](#) [v](#) [in](#)

[Privacy Statement](#)

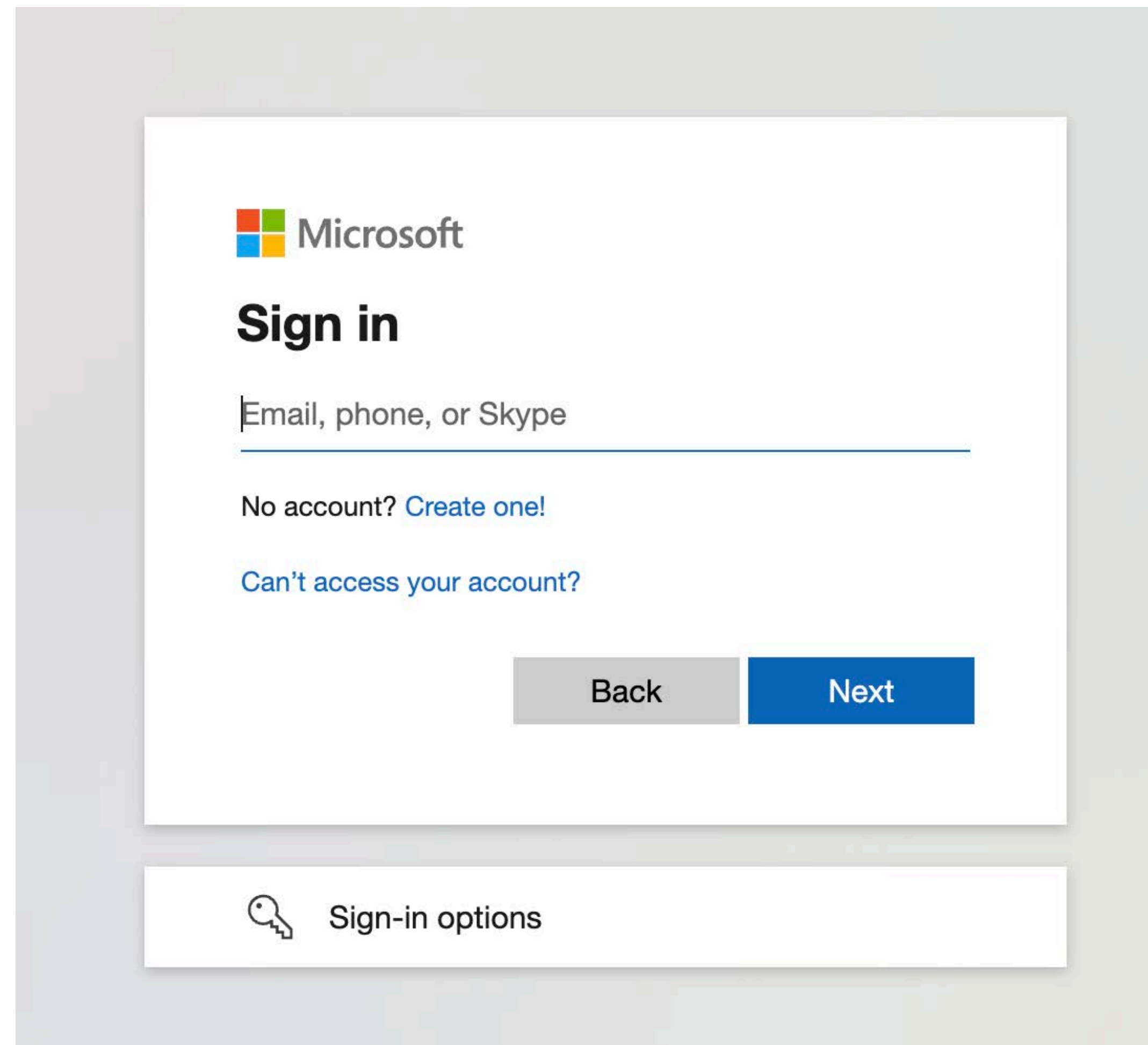
Microsoft Corporation, One Microsoft Way, Redmond, WA 98052



↶ Reply

↷ Forward

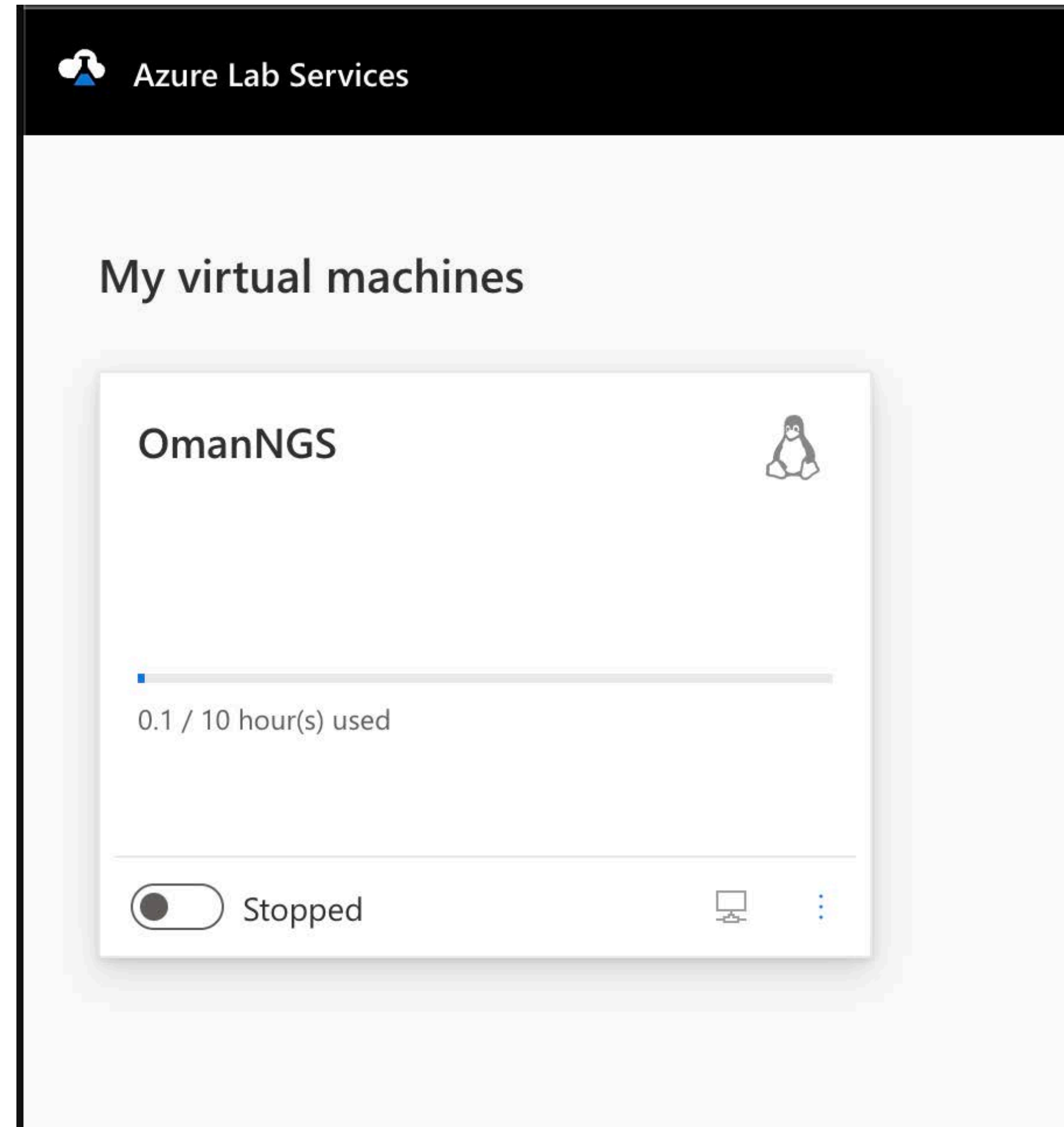
Step 2 : Microsoft Account



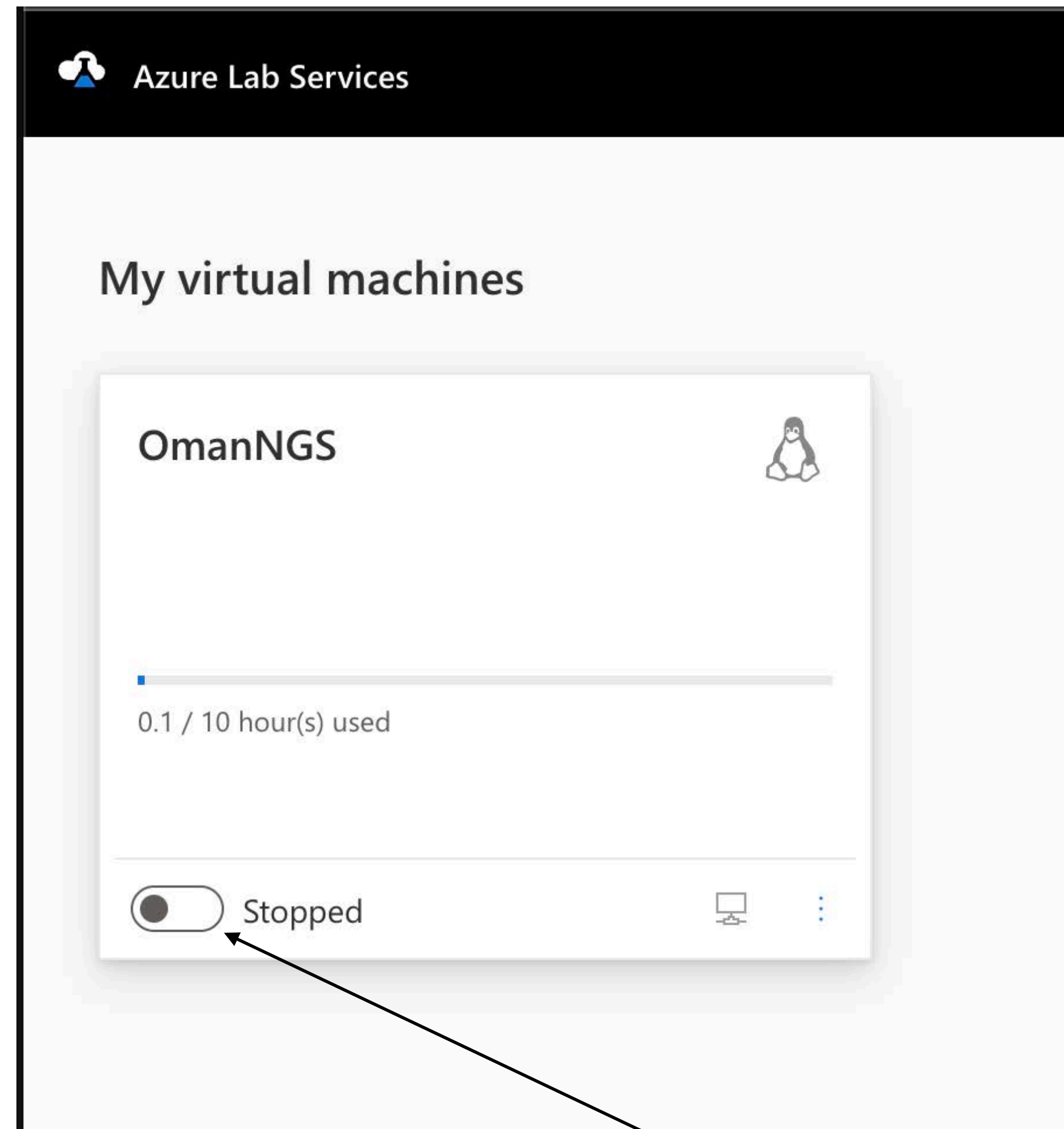
The screenshot shows the Microsoft sign-in interface. At the top left is the Microsoft logo. Below it is the text "Sign in". A text input field contains the placeholder text "Email, phone, or Skype". Below the input field are two links: "No account? Create one!" and "Can't access your account?". At the bottom of the sign-in area are two buttons: "Back" (grey) and "Next" (blue). Below the sign-in area is a "Sign-in options" link with a key icon.

For Azure Lab – needs to be same as invite email

Step 3 : Azure Lab main screen




Step 4 : Start Virtual Machine





Click the slider to “Start” the VM

Step 5 : Virtual Machine Starting

My virtual machines

OmanNGS 

0.1 / 10 hour(s) used

Starting...  

Step 5 : Virtual Machine Starting

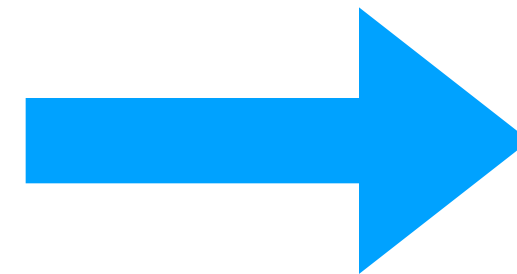
My virtual machines

OmanNGS



0.1 / 10 hour(s) used

Starting...



A few moments

My virtual machines

OmanNGS

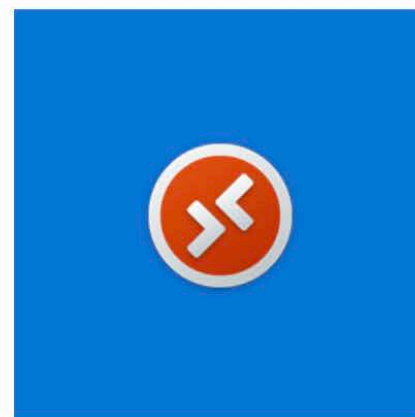


0.1 / 10 hour(s) used

Running



Step 6 : Install Microsoft Remote Desktop



Microsoft Remote Desktop

Microsoft Corporation • Productivity

Use the Microsoft Remote Desktop app to connect to a remote PC or virtual apps and desktops made available by your admin. The app helps you be productive no matter where you are.

More



Free

Get

See System Requirements

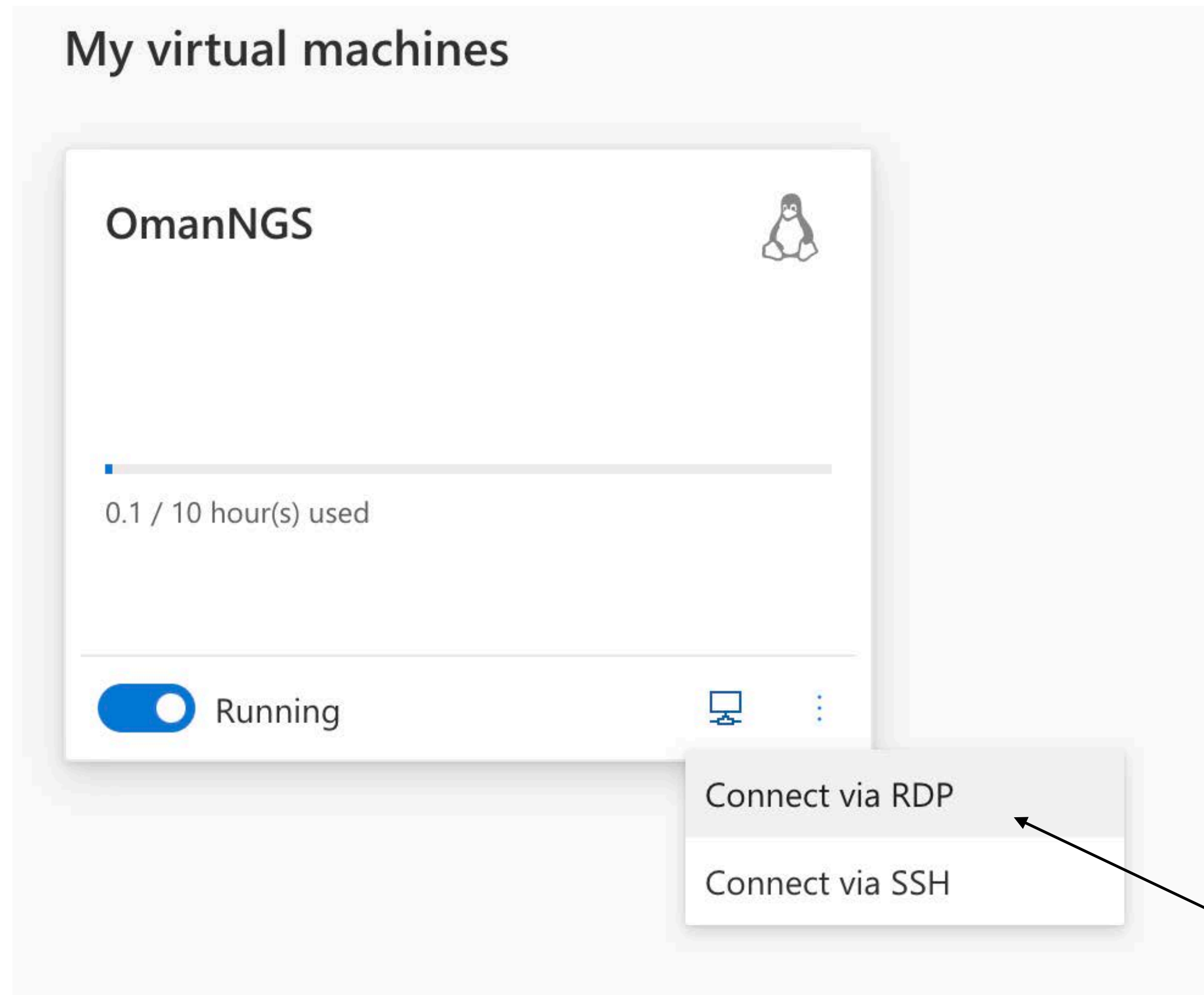
Does not matter what email you use to download !!!

Step 6 : Install Microsoft Remote Desktop (Mac)

The screenshot shows the Mac App Store page for Microsoft Remote Desktop. The search bar at the top left contains the text "microsoft remote des...". The left sidebar lists navigation options: Discover, Arcade, Create, Work, Play, Develop, Categories, and Updates. The main content area features the app's icon, name "Microsoft Remote Desktop", and tagline "Work from anywhere". A blue "OPEN" button is visible. Below this, a row of statistics includes: 77K RATINGS with a 4.6 star rating; AGE 4+ Years Old; CHART #2 Business; DEVELOPER Microsoft Corporation; LANGUAGE EN English; and SIZE 53.5 MB. The "What's New" section, dated 1mo ago, describes updates to connection reliability for Azure Virtual Desktop (AVD) scenarios and provides a link to "Version History" for Version 10.7.6. The "Preview" section contains three screenshots: the first shows the app's administration interface with a list of connections; the second shows a remote Windows 10 desktop environment; the third shows a Windows search interface for "Paint 3D".

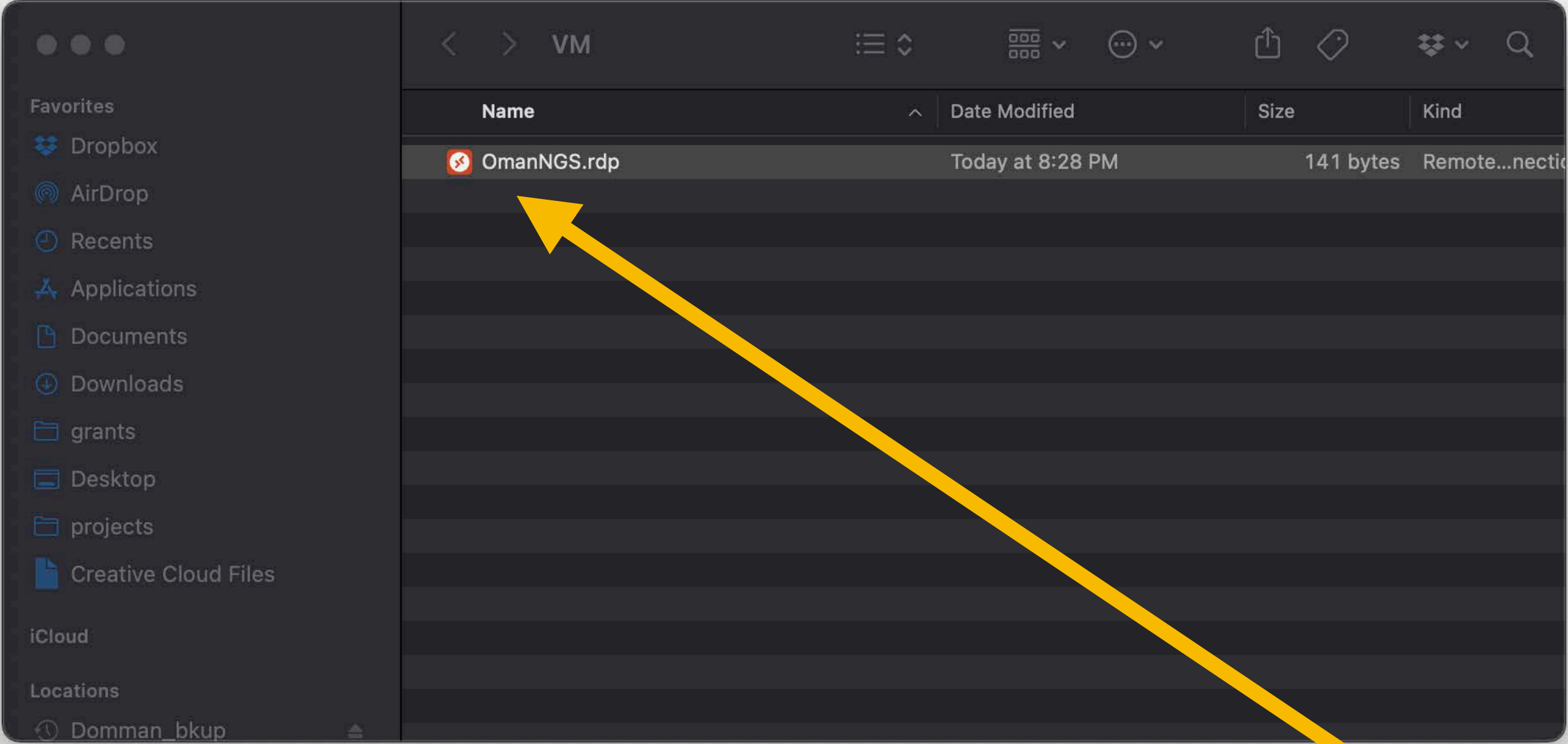
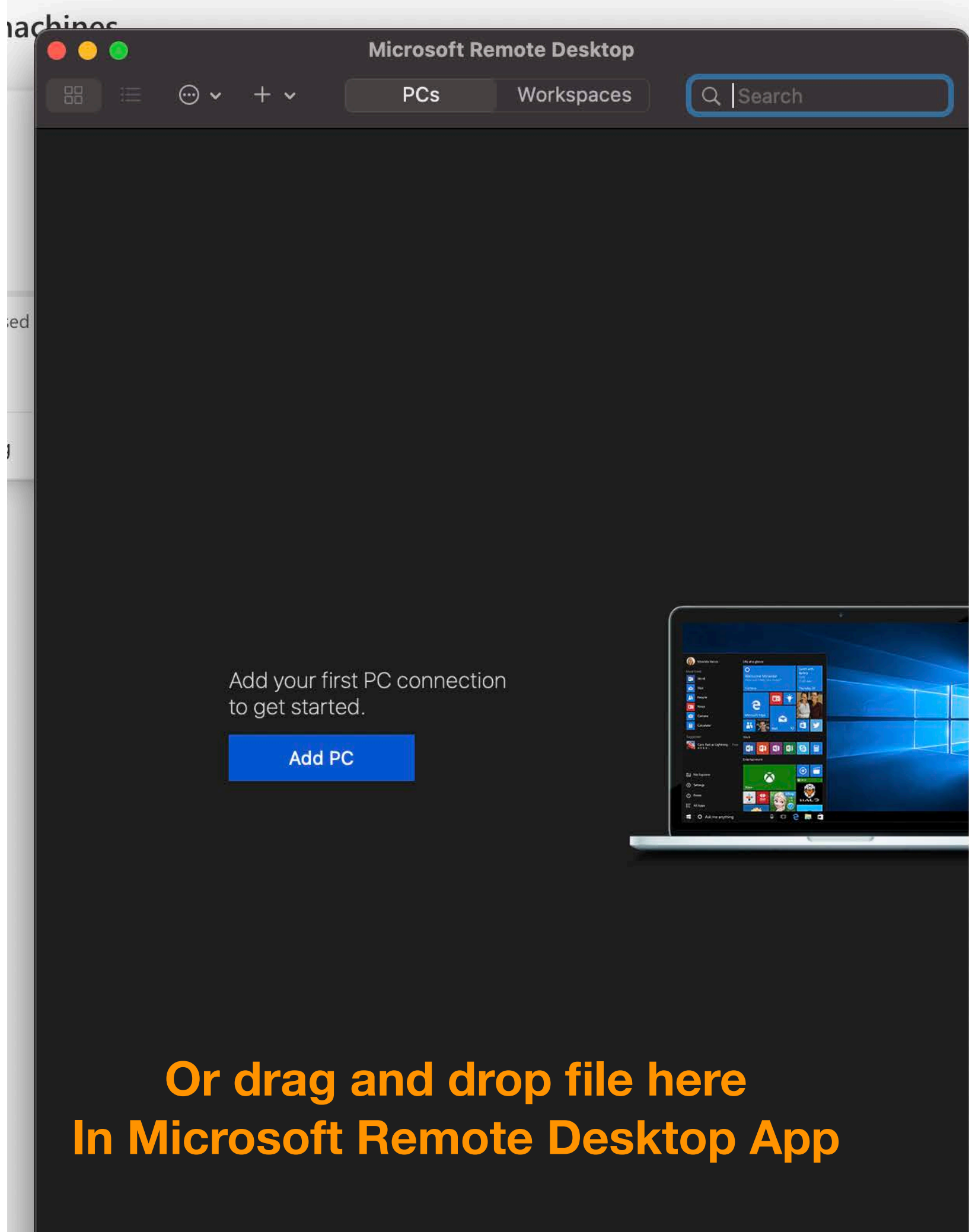
Download in App Store

Step 7 : Connecting to VM



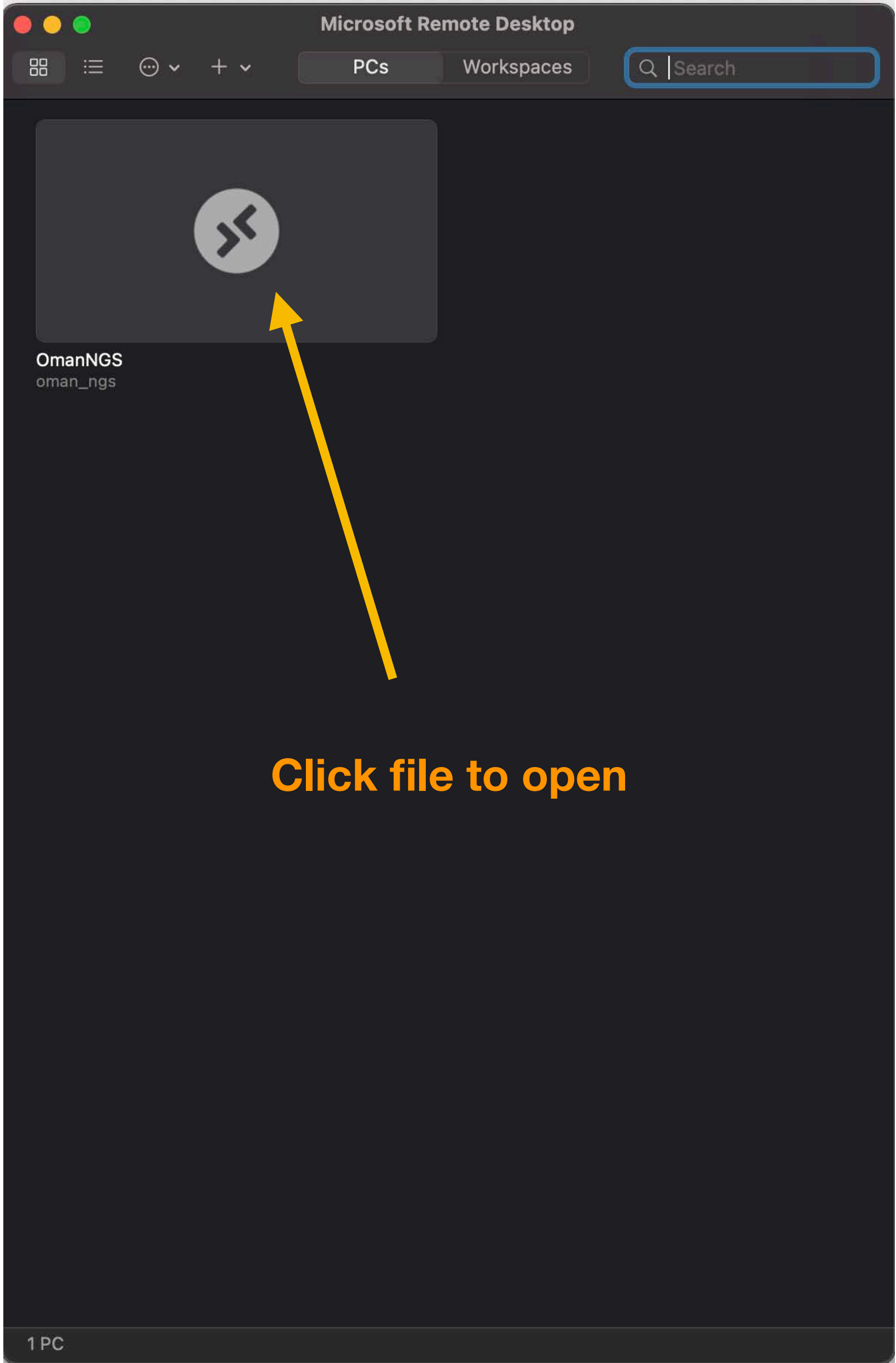
**Click "Connect via RDP"
Save file**

Step 8 : Open RDP file

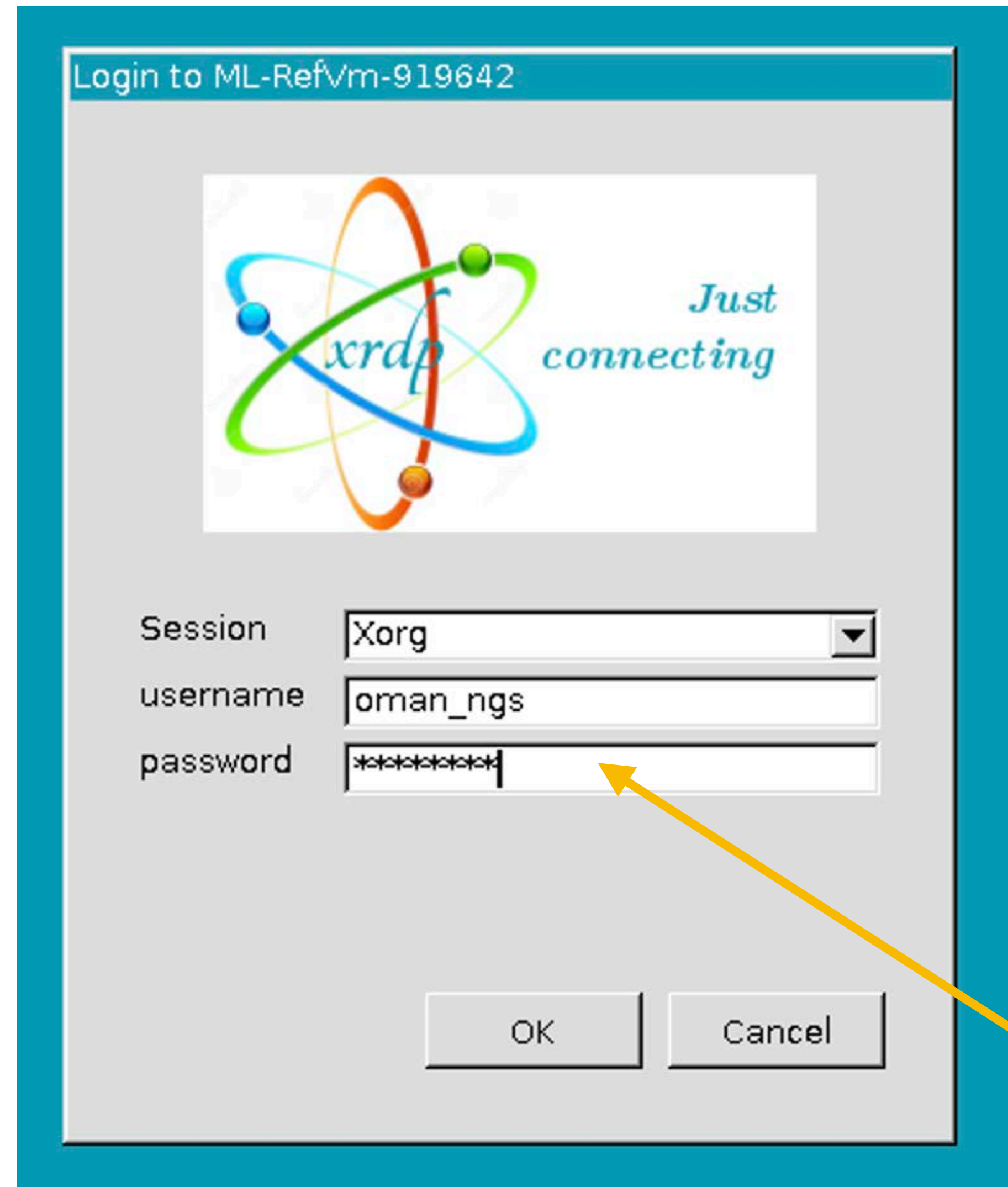


Open by clicking

Step 8 : Open RDP file

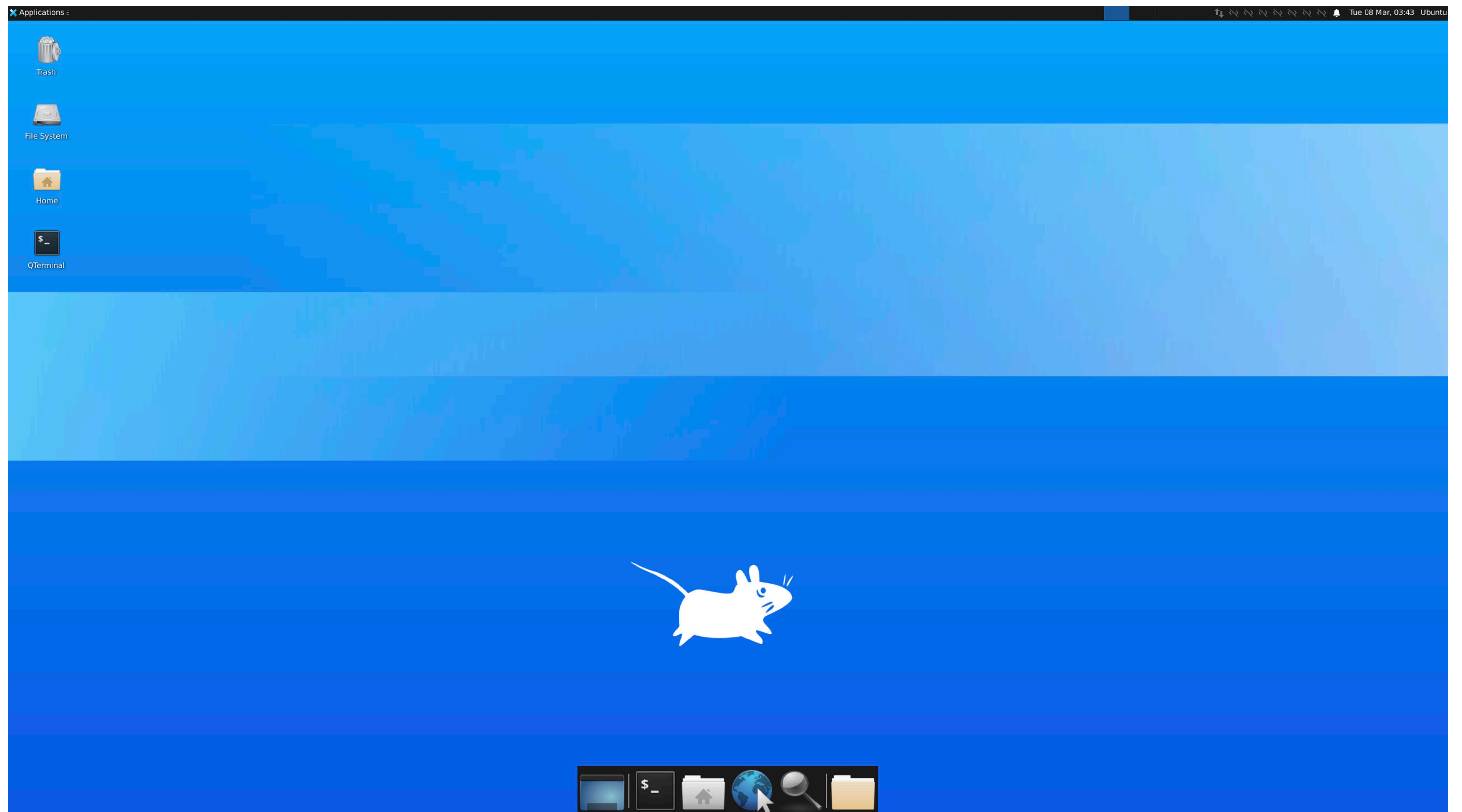


Step 9 : VM Start Screen



This is password you used to set up VM from email

Step 10 : Have Fun !!!



Shutting Down the VM

Applications ▾

Trash

File System

Home

QTerminal

Tue 08 Mar, 03:48 Ubuntu

- Lock Screen
- Switch User
- Suspend
- Shut Down
- Log Out...

Click 'Ubuntu' in top right corner
Select "Log out"

Log out Ubuntu

Log Out Restart Shut Down

Save session for future logins

Cancel

Shutting Down the VM

My virtual machines

OmanNGS



1 / 10 hour(s) used



Stopping...



Stop the VM here !!!!