

Tutorial 1 - Introduction to Linux

Disclaimer: Subject to updates as corrections are found

Version 0.10

Scoring: 20 pts maximum

The purpose of this tutorial is to introduce the Linux operating system and BASH scripting environment. Open source distributions of the Linux operating system such as Ubuntu and CentOS are broadly used in cloud computing as the guest operating system on virtual machines (VMs) and as the host operating system for cloud services. The use of Linux provides cost savings as there are generally no licensing costs involved with launching VM instances in the cloud. This enables tremendous savings when the number of VM instance must be scaled up for application hosting (e.g. 100 VMs). Linux has even become quite popular on the Microsoft Azure cloud.

Recent article describing Microsoft adoption of Linux on Azure cloud:

<https://www.zdnet.com/article/linux-now-dominates-azure/>

To complete this tutorial, first establish access to a Ubuntu Linux environment.

The recommended approach is to install Oracle VirtualBox, and then download Ubuntu 18.04 LTS (iso file) to create a Ubuntu Virtual Machine.

Linux is the preferred environment to work with Cloud provider APIs (AWS, Azure, Google, etc.)

Instructions on installing Ubuntu 18.04 on Oracle VirtualBox are here:

Document:

<https://websiteforstudents.com/how-to-install-ubuntu-16-04-17-10-18-04-guest-machines-on-virtualbox/>

Video:

<https://youtu.be/QbmRXJJKsvs>

When working with Virtual Machines, the base operating system (e.g. Windows 10) on your laptop that hosts the virtual machine is called the **host operating system**. The operating system used by the VM is called the **guest operating system**.

Many people will use the following configuration:

Guest operating system (VM) = Ubuntu 18.04 LTS

Host operating system = Windows 10 or Mac OSX

It is recommended to install the VirtualBox “Guest Additions”. The guest additions provide important features such as sharing clipboards between the host and the guest, as well as file system sharing, and mouse pointer integration. For instructions on installing the guest additions see **Step 3** of the written installation instructions.

Leveraging your newly created Linux VM, please review sections 1 – 12 of the online Linux tutorial:

Linux Tutorial – Learn the BASH command line:
<https://ryanstutorials.net/linuxtutorial/>

While reviewing the tutorial, try practicing some of the commands described. After reviewing the tutorial, complete an online quiz on Canvas that is based on the online tutorial. Those already familiar with Linux may be able to skip the tutorial or review just some portions to complete the online quiz.

Tutorial Sections include:

1. The Command Line
2. Basic Navigation
3. More About Files
4. Manual Pages
5. File Manipulation
6. VI – Text Editor
7. Wildcards
8. Permissions
9. Filters
10. Grep and regular expressions
11. Piping and Redirection
12. Process Management

At the conclusion of the online Linux tutorial, please complete the tutorial 1 quiz on Canvas for TCSS 562.