

What is Due and When?

All assignments are due by 11pm on Wednesday, September 6th.

Books used:

1. The Linux Command Line by William E. Shotts, Jr :
<https://www.amazon.com/Linux-Command-Line-Complete-Introduction/dp/1593273894?SubscriptionId=AKIAILSHYYTFIVPWUY6Q&tag=duckduckgo-d-20&linkCode=xm2&camp=2025&creative=165953&creativeASIN=1593273894>
2. LPIC-1 Linux Professional Institute Certification Fourth Edition:
<https://www.amazon.com/LPIC-1-Professional-Institute-Certification-Lpic-1-ebook/dp/B00WWQQ3GA?SubscriptionId=AKIAILSHYYTFIVPWUY6Q&tag=duckduckgo-d-20&linkCode=xm2&camp=2025&creative=165953&creativeASIN=B00WWQQ3GA>

FAQs

- **Q: Do I need to have Linux installed on my home machine for this course?**

A: The lab will be equipped with computers that can run Linux. You will have full administrative rights to these installations and you should have sufficient time to complete all of your work in lab.

You also should consider having access to Linux outside of the classroom for this course. There are a number of ways to use Linux without having to install it on your machine. I will discuss some of these methods in one of this week's video lectures. I recommend using a free tool like Virtual Box to run Linux in a virtual machine on your current computer. You can also install the OS to an external USB drive and run the OS from there or even boot from a "Live" CD when you want to practice. Again, these methods will be covered this week.

- **Q: What Linux distributions (flavors) will we cover this semester?**

A: I will mostly use Ubuntu for all of my examples as it is the easiest distro to use for day-to-day computing. We may also take some time to look at one of the free Redhat based distributions such as Fedora or CentOS. At the core most Linux systems are the same and our goal this semester is to focus on learning that common set of knowledge.

- **Q: What is your (the instructor's) favorite Unix/Linux distribution?**

A: Currently it is Mac OS X! I get all the power of Unix and all the usability and design of Apple. I used to be a heavy Redhat user as I was certified as a Redhat Certified Engineer but as I get older I enjoy the "it just works" environment of the Mac. To be honest, I like using any OS that has a powerful Unix style command line. This used to exclude Windows but even Powershell is starting to become an option and something I might explore more moving forward.

- **Q: Can I use a Mac for the course?**

A: In the early stages, sure. For many of the basic command and bash shell related assignments the Mac OS X terminal is sufficient. At some point we will dive deeper into the core of Linux and you will need to have the OS available at that point.

- **Q: Will we get remote access to a College provided Linux machine for this course?**

A: I am working with IT to see if this is feasible and will keep the class posted if there is progress in getting this configured. Please use the resources below to run a local copy of Linux to complete your assignments.

Watch, Read, & Do

- **Review:** LPIC-1 Introduction pages xxiii through xxviii to learn a bit about one possible Linux Certification path. There are several Linux certifications and the LPI exam tends to be representative of the core knowledge in many of them.
 - **Read:** The Linux Command Line Introduction & Part 1, Chapters 1 & 2
 - **OPTIONAL:** Review a bit about *the History of Unix* if you would like to know more about the background of the OS we are learning.
 - **Read:** The section below discussing the various ways to install and run Linux.
 - **Do In Class (and maybe at home):** Download and install Linux so you have access to the OS this semester. My video lectures for this semester use Ubuntu 12 LTS running in a VirtualBox VM on Mac OS X. I will be grading work on Ubuntu 16 LTS running in a VirtualBox VM on Mac OS X
 - **Watch:** Video lectures for installing Linux and introductory concepts listed below.
 - **Complete: Discussion board assignments DB1 & DB2 found below.**
- Command & Concept Video Lectures**

*****How to install Ubuntu into a Virtualbox Virtual Machine*****

Installing Ubuntu in a VirtualBox VM:

<https://www.youtube.com/watch?v=FonzQyqEH1E&feature=youtu.be>

Path and Command Basics:

<https://www.youtube.com/watch?v=irYWpAZKurA&feature=youtu.be>

Absolute vs. Relative Paths:

<https://www.youtube.com/watch?v=irYWpAZKurA&feature=youtu.be>

Some Linux Distributions

- **Ubuntu** - The version I will use in class and the easiest to get started with.
- **Fedora** - Good to use if your company uses Redhat Enterprise Linux and you want a nice day-to-day desktop Linux distribution.
- **CentOS** - Even better if your company uses Redhat Enterprise Linux as this is a free, community built, version of RHEL. Not a great OS for daily use in my opinion.
- Have a favorite Linux Distribution? Post it to the DB!

Notes

- Our main goal this week is to get Linux up and running on your home computer. We will dive into using the OS next week!

Installing Linux

Installing Linux used to be an arduous task that required a large amount of skill and knowledge of the underlying hardware. Thanks to many advances in hardware and the participation of major hardware vendors in the kernel development process this is no longer the case. Installing Linux is, usually, no more difficult than installing Windows. This discussion assumes you have installed an OS at least once.

Distributions

We will talk a lot about what Linux is this semester. Linux, just like Ice Cream, is a generic term. You can download Linux in many flavors. The flavors of Linux are called distributions. Windows is only made by Microsoft and Mac OS X is only made by Apple but Linux is made by a large number of vendors and comes in many varieties. You are welcome to use any variety you choose but I will primarily use the distribution discussed below.

Technically speaking, Linux is really just the name of the kernel and not the entire OS. We will talk about that later in the semester though.

Download

You will need to download an installation disk image from your distribution's web site to get started. In this class I will recommend using the Ubuntu distribution as it is the easiest for new users to get up and running. Here are some quick instructions for downloading Ubuntu. If you have any questions please post to the Discussion Board.

- [Go to the Ubuntu download page](#) and download the disk image of the version you wish to install. You should select the Desktop version for this course. I would also recommend installing the Long Term Support (LTS) version of Ubuntu as it is the most stable and will require the least maintenance over time. The current LTS version at the time of writing this is Ubuntu 16.04.3. My video lectures and screenshots are from a previous LTS version 12 (and for our purposes this older version does not differ much from the current version).
- Please note that you are downloading disc images and the size of the download will be large. You will need to determine if you need the 32-bit or 64-bit installer. If you have a newer machine you will probably want the 64-bit installer. You shouldn't have a problem installing the 32-bit if you aren't sure which to choose.
- Once your download is complete you will have an ISO file. This is an image of an installation DVD. In the next section we will review ways to use this image to install Ubuntu.

Installation Methods

There are several options for installing Ubuntu for use in this course. If you want to install Linux into a virtual machine you can just leave the ISO file on your hard drive. If you want to do any other type of installation you will want to burn this file to disc or [create a bootable USB installation drive](#).

Here are some options for how to install Linux on your system.

- **Install Linux directly to your hard disk as the only OS.** If you have an old computer and don't care about the data on the hard drive you can replace the existing OS with Linux. This involves putting the DVD you created from the ISO in the computer's optical drive and rebooting. You would then follow the prompts to complete the installation. This WILL destroy all data on your hard drive.
- **Install Linux to your hard disk on its own partition alongside of your current OS.** I haven't done this in awhile so your mileage may vary. This MIGHT be as straight-forward as putting the DVD you created from the ISO in the computer's optical drive and rebooting. There may be some prompts that will allow your disk to be partitioned automatically for the new OS. You would then follow the prompts to complete the installation. Again, I haven't done this in a long time so I don't know if there is an easy way to do this. If anybody is interested in using this approach let's start a thread on the Discussion Board to provide support. *This MIGHT destroy all of the data on your hard drive.*
- **Run Linux by booting from the "Live Installation CD" and never actually install the OS.** This is a great way to get your assignments done without ever having to compromise your existing hard drive's data. You will put the Ubuntu DVD you created from the ISO into your computer's optical drive and reboot. Don't select the option to install the OS, just select the option to run Ubuntu from

the optical disc. This will create a temporary RAM disk as your main work space and not have any effect on your existing hard drive and OS. Be aware that you can still mount and destroy the data on your hard drives if you aren't careful. If you use this Live CD approach you will also need to use a USB drive to save any documents you generate during these Live DVD sessions as all of the data you save in your Linux Live CD session will be deleted when you reboot your machine.

- **Install Linux to an external USB drive such as a hard drive or a USB flash drive.** This process is similar to installing directly to your hard drive mentioned previously, just be sure to select the appropriate external drive during the installation process. In most cases this will delete all of the data on your external drive. Again, you may be able to partition the external drive during this process but that discussion is outside the scope of this document.
- **Install Linux into a virtual machine such as VirtualBox. This is my recommended solution.** This allows you to install Linux in a virtual container that runs inside of your existing OS. You would boot Windows or Mac OS X as you do normally and then launch the virtual machine software which then allows you to run Linux inside of a window in a fashion that keeps your main OS secure. This is the process I'll describe below. If you do some Googling you may even find VirtualBox images of Ubuntu already configured but I wouldn't trust these from a security stand point.

Installing Ubuntu Using VirtualBox

- You can download VirtualBox from this web site.
- You can watch my video lecture on how to install Ubuntu into a VirtualBox VM.
- Ubuntu has some nice instructions on how to install the OS using VirtualBox under Windows. The process is the same for Mac users. Please use these directions to help create a virtual machine and then return here for the next step.
- Make sure the VirtualBox software is running and that you can see the VM Manager window.
- Select your Ubuntu VM and press the start button.