

Homework #0 – Introduction to Linux

Update 2020-08-18: Add Appendix B with info on accessing the videos at LinkedIn Learning; edited Appendix A to note the special ECE 560 VCM directions.

Due date: see course website

Note: this assignment is adapted from ECE250 (Computer Architecture). If you've already completed this assignment in that class, just login to the training and screenshot the already-finished course result.

Note that unlike in ECE250, we will not be using the Duke Linux Cluster (login.oit.duke.edu).

The purpose of this assignment is to build skill in the Linux/UNIX command line, an essential skill in computing. Basic competency with it is necessary to this and many other courses at Duke, and mastery of it will simplify your computing life immensely. To build these skills, you'll be learning the basics right at the start of the course. The mechanism for doing so will be a Duke OIT online course which incorporates video lessons and interactive exercises, as well as a few supplemental tasks later in this document.

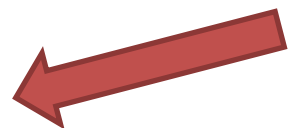
In this assignment, you'll create your own *Ubuntu Linux* virtual machine (VM) in the Virtual Computing Manager (VCM). This can be useful as you have administrator ("root") access on this machine to configure it as you please. You can keep this VM around, as we'll use it in many subsequent assignments, and will refer to it as your "Linux VM".

1. See **Appendix A** below for info on reserving a Linux VM in the Duke Virtual Computing Manager.
2. Find the course materials on the Duke Sakai site:
<https://sakai.duke.edu/portal/site/11745e97-3de0-468d-92e6-310aa6bec126/>
3. Watch the videos and answer the assessment questions.

Note: Since LinkedIn acquired Lynda in 2015, the steps to access the Linux course mentioned on the Sakai Site above are not completely accurate, and one of the playlists linked from Sakai is now retired and no longer available at that link. See **Appendix B** for updated instructions for accessing these LinkedIn Learning (formerly Lynda) playlists.

4. Upon completion, go to the Gradebook view to review your evaluation scores.

Screenap this view and submit it to the Sakai assignment locker for Homework 0.



Appendix A: Reserving a VM with the updated Virtual Compute Manager (VCM)

To reserve an appropriate VCM VM:

1. Visit <https://vcm.duke.edu/>
2. Click “Reserve a VM”:



3. Log in using your NetID if needed.
4. Pick *ECE560 Ubuntu20* (or similar). This VM won't count against your VCM allotment.¹
5. Agree to the Terms of Use.

¹ Updated 2020-08-18. If you already made an Ubuntu 18.04 VM, just trash it and make a new one before you start Homework 1.

6. Your VM is created. Note its hostname:

The screenshot shows the Duke University Virtual Computing Manager (VCM) interface. The browser address bar displays <https://vcm.duke.edu/reservations/791>. The page header includes the Duke University logo and the text "Virtual Computing Manager" along with a welcome message for Tyler Bletsch, Ph.D. and a "Log out" link. The navigation menu contains "Home", "Reserve a VM", "Reserve a Container", "Available Apps", and "Help", along with a search bar.

My Reservations

VIRTUAL MACHINES

- [vcm-292.vm.duke.edu](#)
- [vcm-839.vm.duke.edu](#)

VM Management Tools

- Power on
- Power off
- Take a current snapshot
- Reload from snapshot
- Export this VM
- Reload original image
- Create an alias
- Transfer ownership
- Delete this reservation

Your Vm is ready

General Information

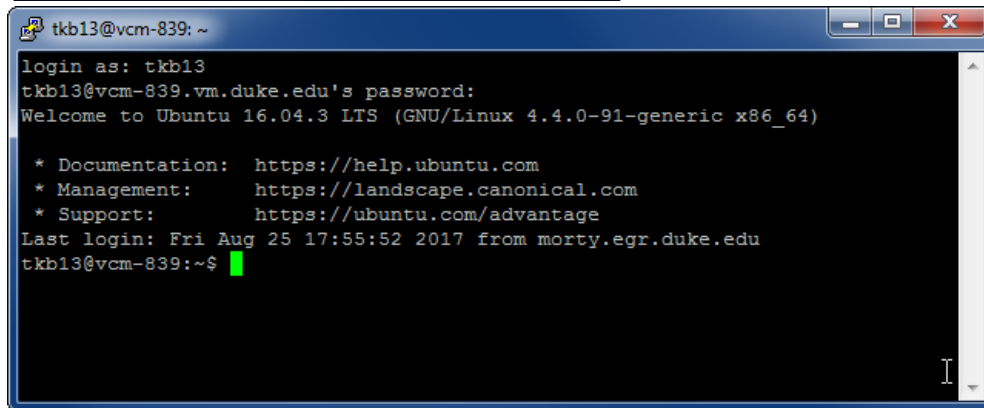
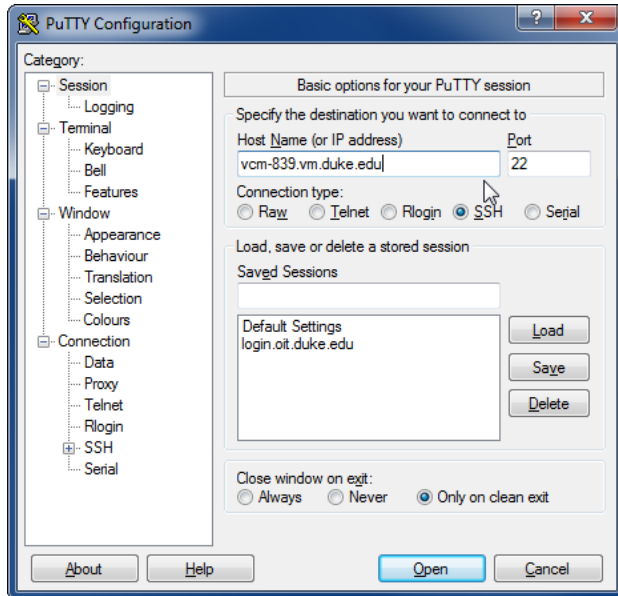
- Hostname:** [vcm-839.vm.duke.edu](#)
- Operating System:** Ubuntu 16.04
- Base memory:** 2 GB
- Processors:** 2
- Extra info:** Created by clockworks (on behalf of (colab2)) at 2017-08-25 12:06:16 -0400
- VM Status:** complete

Users

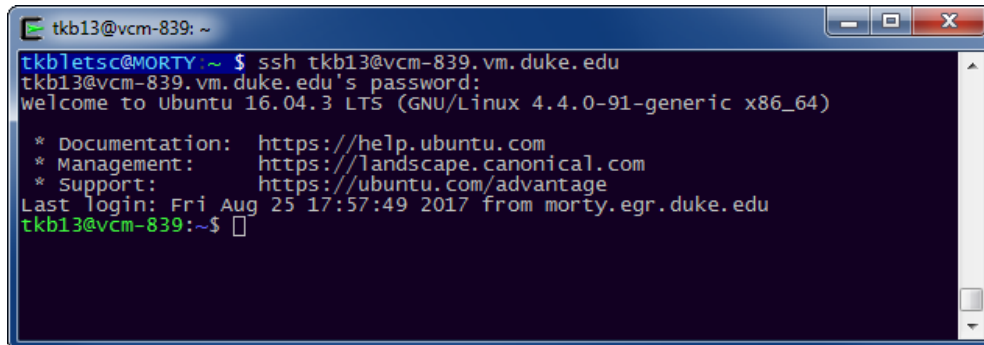
- User:** tkb13
- Admin user:** vcm
- Admin password:** [View password](#)

7. Connect to the given hostname using PuTTY (for Windows) or ssh (for Mac). Login with your NetID. You do not need to worry about the “admin password” shown in the web interface.

Windows example:



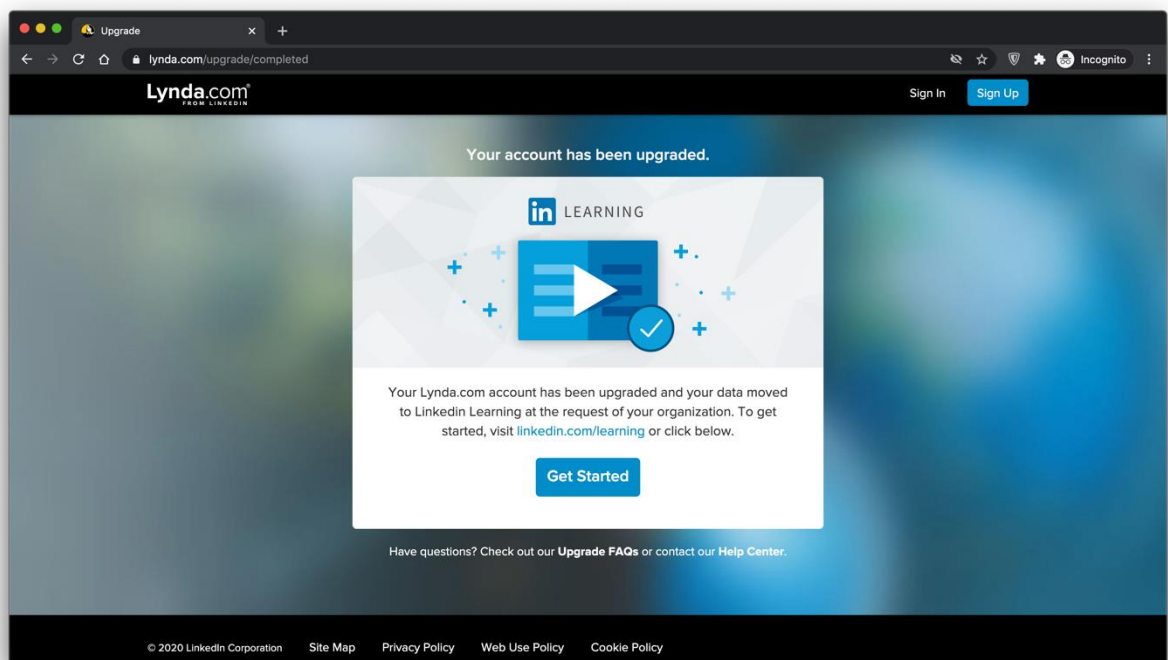
Linux/Mac-style example²:



² Technically this is on UNIX-style terminal I have on my Windows machine, but it works the same way.

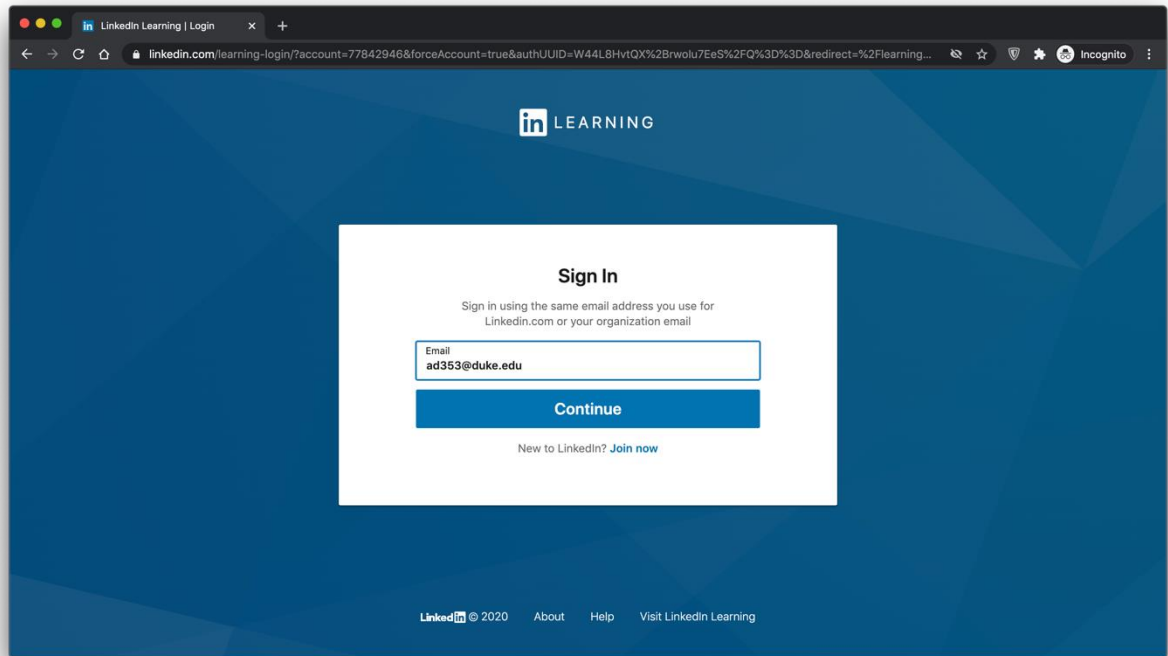
Appendix B: Updated Instructions (2020) for Accessing LinkedIn Learning (Formerly Lynda) Playlists

1. If you haven't accessed LinkedIn Learning using your Duke Net ID before, go to the following link to connect your Duke account with your LinkedIn account:
<https://shib.lynda.com/Shibboleth.sso/InCommon?providerId=urn:mace:incommon:duke.edu>
If you want to be safe, you can still safely navigate to that link regardless of whether or not you've connected your Duke and LinkedIn accounts previously.
2. You should see the following screen telling you that your account has been upgraded:

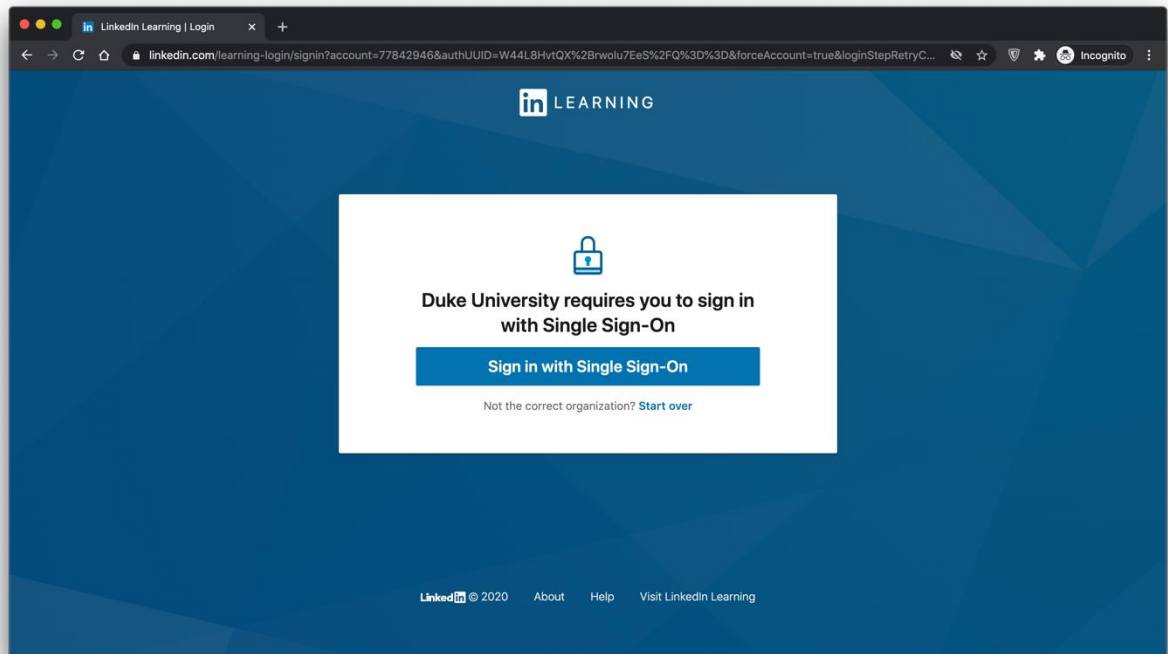


Click on "Get Started" and continue to the next step.

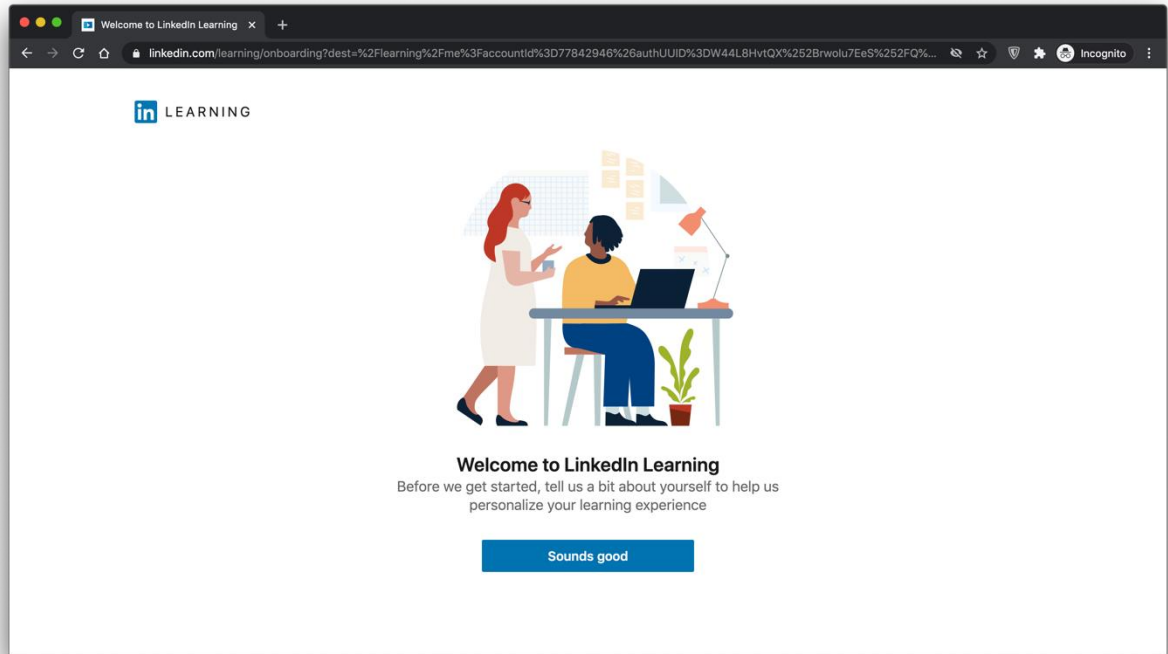
- You will now be asked to sign in. Use your Duke email address (any alias is OK, but try to use netid@duke.edu just in case) to sign in:



- You will now be told that you're about to be redirected to Duke's SSO page as shown below. Click on the "Sign in with Single Sign-On" button, and you'll be taken to the familiar Duke Shibboleth.

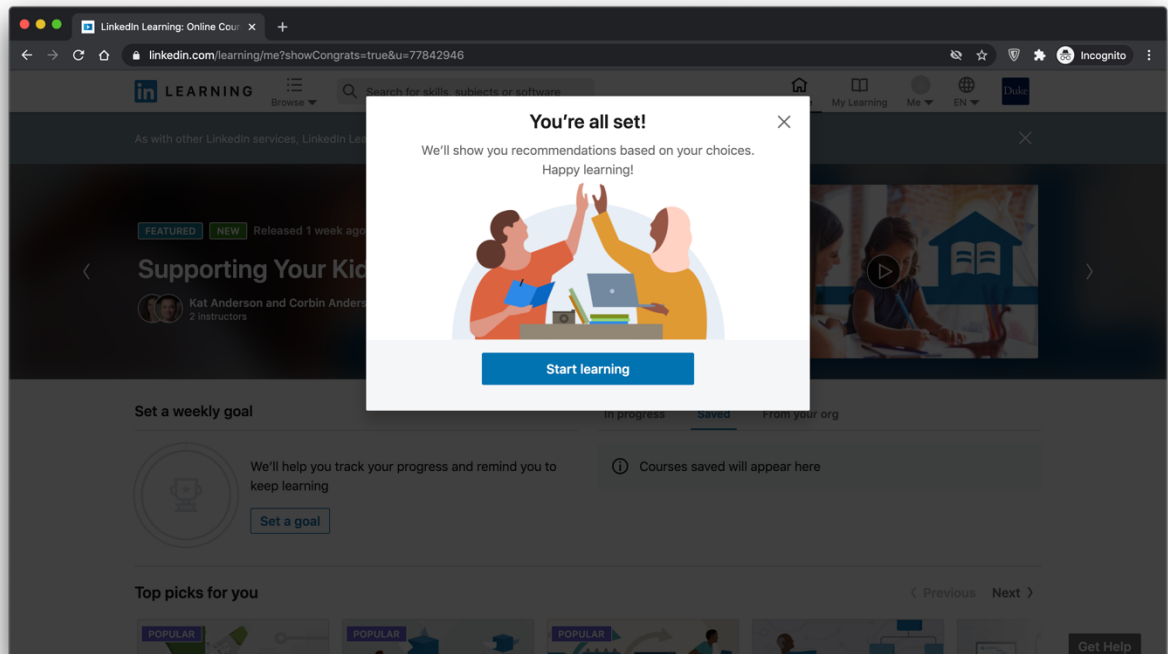


5. You should now see this welcome screen. Click on “Sounds good” to continue.



You may be asked to click on a few topics so that LinkedIn can recommend courses to you. It may or may not let you skip some of these “Let’s get to know you better” questions, but you’ll get to the Linux courses that we care about regardless of how you answer these.

6. You should now see a screen saying you’re all set!



Note that not all links on the Sakai site are still active, specifically the “Learning Linux Command Line” course. Try the following links instead:

- Learning Linux Command Line: <https://www.linkedin.com/learning/learning-linux-command-line-2>
- Learning SSH: <https://www.linkedin.com/learning/learning-ssh>
- Learning Bash Scripting: <https://www.linkedin.com/learning/learning-bash-scripting>
- Multitasking at the command line: <https://www.linkedin.com/learning/linux-multitasking-at-the-command-line>

If any links on the Sakai site refer to “playlists” instead of courses, that just means you need to find a subsection of the current course (i.e. a playlist) on that topic. You’ll still use one of the four links above to get to any of the playlists you need for this course.