

Lab 1: Linux and You

By: Andrew Danowitz

Background

For this class, we will be learning high-performance programming in the context of the Linux Operating System and POSIX threading (pthreads) frameworks. While a myriad of development environments and threading libraries exist, Linux+pthreads is one of the most commonly used combinations for everything from embedded devices to enterprise grade data centers.

Many SDKs exist to assist in software development (Eclipse, Netbeans, Code Composer Studio, etc.), however, many programmers still rely on a command-line/script-based flow to create and test software. This is the technique we will be using in this class.

Overview

The purpose of this lab is to get you acquainted with the Linux command prompt. You'll be learning in the form of a command-line based game that will require you to use advanced command-line techniques to solve puzzles! Essentially, this is a capture the flag game. The instructions below will get you logged into a VM as user "level0". From there, you'll need to find a file that contains a flag{<username for next level>:<password for username for next level>}. Once you've found the flag, use the username and password to ssh into the next level!

Process

- 1) Download the lab 1 Virtual Machine from Polylearn
- 2) Open the downloaded .ova file with VirtualBox and import the Virtual Machine with recommended settings
- 3) Launch the Virtual Machine and log in with user: management and password: AZMzPkPU3A
- 4) Open a terminal and type the command `ssh level0@localhost` (password: level0)
- 5) Try to find the "flag" which contains the username (level1) and password to ssh into the next level. Hint: when in doubt, always check the level's home directory for a clue.

Deliverables

Write up the solutions finding the flags for level 1-7 (also include the flags) and turn them in on Polylearn. This will be the primary training you'll receive in Linux command line operation and knowledge gleaned here will be heavily used during the rest of the quarter, so please be thorough!