1: Getting Started

Cedar Rapids Area Homeschools’ 2023 Cyberdefense Team

# Here we go!

We have three goals tonight.

First, we need to get to know each other a little bit, so there will be some talk time at the beginning of our meeting.

Second, after that, is the tricky one. It may actually be the trickiest thing we do all year, but once we know how to do it, it makes it possible to try to do absolutely crazy and ridiculous things without risking any harm to our computers.

Specifically, I want to show you how to install Linux on your laptop so that you can use it for our club. You’ll be able to do this in a *virtual machine* (which is fancy-speak for a *fake computer*) without removing Windows, Mac OS X, Linux, or whatever else your computer is already running. Your homework for this week will be to install Linux in a VM on your own laptop, but hopefully, we will get this done tonight.

Third, if there’s time, I’ll start a “chalk talk” about some aspects of networking without having to get into all of the technical details. We will get into *some* technical details, but just enough to “learn what it is we need to learn.” This presentation is humbly entitled “How the Internet Works.” We will have a quick glance at it so you can look at it over the week and then we will talk about it in more detail next week.

## Getting to Know you

Being a community is important for any team – even a small one. Here are the things you need to know about our little community.

**Normal Communication: Slack**  
You should have received an email inviting you to join our Slack organization. If you did not, please let me know. Slack will be our sole tool for official communication. It can be accessed via a Web browser, a standalone program you can install on your laptop, or an app on your phone.

**Ad-hoc Communication**  
One of our Slack channels is called **#contact-info**. If you want other people in the group (team members, mentors, and parents) to be able to contact you outside of Slack, please put your phone number and/or email address in this channel.

## Installing Linux

<https://kubernetes.io/docs/tasks/tools/>

<https://minikube.sigs.k8s.io/docs/start/>

<https://docs.docker.com/desktop/windows/wsl/> 🡨

VirtualBox is the VM (virtual machine) software we will use this year. Download a copy from <http://192.168.10.27/files/week-01/VirtualBox> . Please. You will find the Windows and Mac installers there. Just grab a copy of the one you need and run it to install VirtualBox.

# Installing CentOS

This year, we are going to use a different “flavor” of Linux than what we’ve used in the past. (Ooh, the excitement!) We will be using CentOS, which stands for “Community Enterprise Operating System.” “Community” means “free to use, and supported by its users.” “Enterprise” means “we can do just about anything with this.” And “operating system” means “this software runs a computer.”

For tonight, see if you can get CentOS downloaded. For tonight, download a copy from <http://192.168.10.27/files/week-01/CentOS> . Please. You will find the 32-bit (i386) and 64-bit (x86\_64) versions there. These are big files, so just grab the one you need.

After you have the .ISO file you need to install CentOS, here’s how to use it:

1. Create a new virtual (fake) computer to run CentOS. I’ll show you how.
2. Stick the virtual CD into the virtual optical drive. Yeah, really, it’s like playing make-believe. I’ll show you how.
3. Start the fake computer by turning on the fake power switch and letting it run the program on the fake disk that’s in the fake drive. Cool, huh? I’ll show you how.
4. The files we downloaded are “Live” images, which means they can be used without installing them. Basically, we’ll just tell our fake computers to run CentOS, and they will do so. I’ll show you how.
5. One disadvantage of using a Live CD is that none of the things you change stay the way you want them – every time you reboot the virtual machine (VM), it runs exactly what’s on the virtual CD, which means it starts with all default settings again.
6. To install CentOS so that it runs more like a “real” computer, you can double-click the icon labeled “Install to Hard Drive” on the CentOS desktop. You’ll need to answer some questions, but not too many. I’ll show you how.
   1. This will install CentOS to your virtual hard drive – the one that is connected to your virtual computer. It will NOT install CentOS on your “real” hard drive. So your computer is safe.
7. In fact, one of the cool things about virtual (fake) computers is that you can’t (very easily) break stuff on your real computer. But I’ll still show you how.

# Where to get files when you are elsewhere

The web server we are getting files from tonight is running on Chris’s laptop. Those addresses (the ones with 192.168.10.27 in them) will not work when you are somewhere else, whether that’s your house, or the library, or even Mars. Actually, they might work on Mars, but unless you’re going there, how would we know?

When you are somewhere else, here are the places you can get those same files. **Do not use these addresses at Chris’s house,** because my Internet provider only gives me a certain amount of bandwidth every month. Please.

**Where to get VirtualBox when you are elsewhere:**

* <https://www.virtualbox.org/wiki/Downloads>

**Where to get CentOS when you are elsewhere**:

* 32-bit: <http://mirror.team-cymru.org/CentOS/6.4/isos/i386/CentOS-6.4-i386-LiveCD.iso>
* 64-bit: <http://mirror.team-cymru.org/CentOS/6.4/isos/x86_64/CentOS-6.4-x86_64-LiveCD.iso>