Preparing for CS472 Labs

Overview

Our lab environment will be using the GNS3 Network Emulator, along with the open source FRRouting software which we will be using to build our virtual routers and configure them using modern routing algorithms

GNS3 – Commercial
Network Emulation
Tooling

https://www.gns3.com/

FRRouting/frr
Open Source Implementation of
Many Routing Algorithms

https://frrouting.org/

Prerequisites

GNS3 is complex to configure, there is a front-end component with implementations for linux, windows and MacOS, but GNS3 requires a backend component that is Linux only. Therefore to run GNS3 you can either run the entire stack on a linux VM (which is what we will be doing) or figure out how to deploy the backend on a Linux machine / VM and then connect the front end

FRRouting is an open source suite of routing algorithms with a router runtime. Its configuration tooling emulates Cisco tooling, however, it also can be a difficult piece of software to deploy and configure. To overcome this, we will be using a pre-built docker container to emulate a fully functioning router.

Prerequisites

To simplify the configuration process, I worked with CCI – IT to create pre-built Ubuntu based VMs that are pre-configured with all of the software that we will need. Drexel CCI uses VMWare / vCenter / vSphere software

Drexel CCIs VMWare instance is deployed in such a way that in order to access it you must either be on Drexel's campus (aka connected to the DragonFly network), or connected into Drexel over Drexel CCIs VPN that uses Cisco Anywhere Connect tooling.

Helpful Links

https://support.cci.drexel.edu/getting-connected/vpn/

This link takes you to Drexels page with information on how to download, install and configure the Anyconnect VPN tooling (if you don't already have it installed). Again, to do this lab you will need to connect to VMWare from Drexels campus network or over the VPN if you are remote

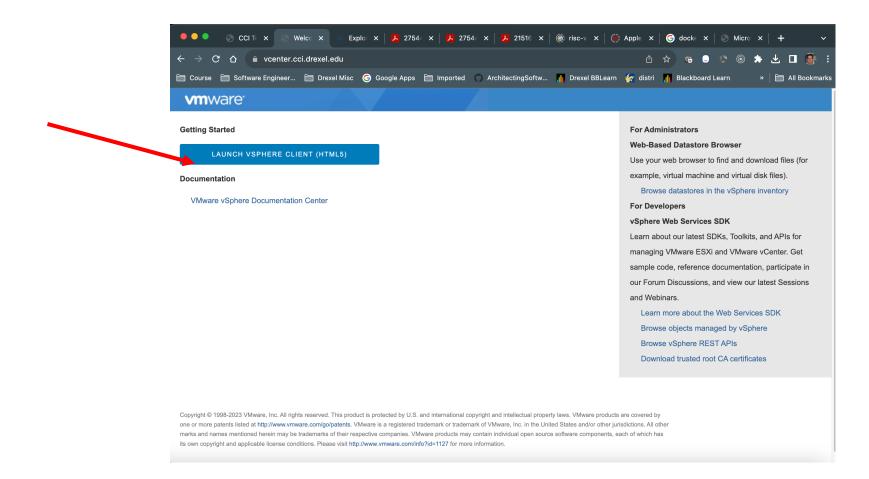**https://support.cci.drexel.edu/cci-virtual-lab-resources/vmware-vcenter-or-vsphere/**

This link takes you to information on how to access Drexel CCI VMWare resources

https://vcenter.cci.drexel.edu

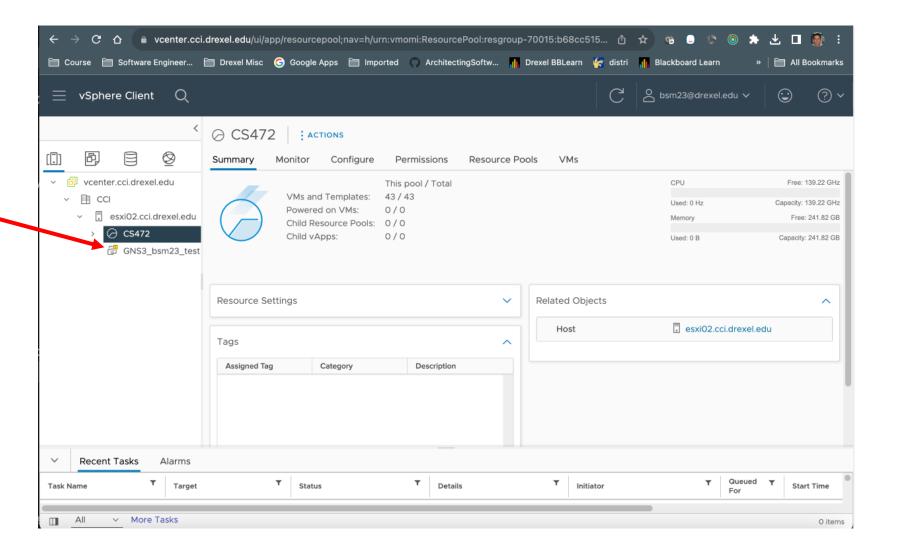This link takes you Vcenter to launch and manage your virtual machine

Connecting to your VM
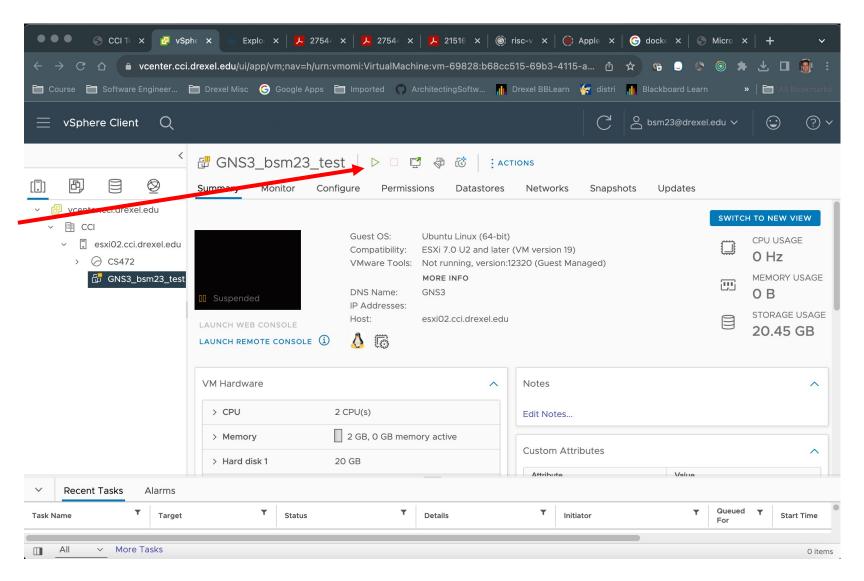
https://vcenter.cci.drexel.edu

Connecting to your VM

Your VM Should Be Here (Click)

Connecting to your VM – VM Start Page

Start your VM (click)

Connecting to your VM – VM Start Page

Start the console (click)