`git clone https://github.com/grgsrs/nus_dap.git`

Debugging and Profiling: Setup Guide

For this workshop session, we **strongly recommend** using a Linux installation, as some of the tools might not work with Windows (even on WSL) and/or macOS.

Excluding the time it takes to download Ubuntu, setup should take around **30 minutes**. Other linux distributions should also work, but you should be familiar with your own package manager to do this setup on your own.

Using a Virtual Machine

For Windows users, you can use this guide to install Ubuntu using VirtualBox.

For macOS users, install UTM and use this guide to install an Ubuntu 22.04 virtual machine. Download *Ubuntu Server* for Apple Silicon users, and *Ubuntu Desktop* for Intel users.

Check the Appendix for screenshots and troubleshooting details.

A good amount of memory to allocate (when prompted by the virtualization software) is **4096MB** with **2 cores** and a good amount of storage is **32GB**. Allocating less than that is also fine, if your system can't handle giving up that much resources.

Installation Debugging/Profiling Tools

Try to install as many of the tools as possible. Most of them require only running one command in the Terminal.

If some of their installations fail and you can't figure out why, *that's perfectly fine*, we'll try to troubleshoot during the workshop, or you can skip the hands-on for just that particular tool and just watch.

Tool	**Installation**
Python	Follow the installation instructions at https://www.python.org/ Install the latest version `sudo apt install python python-dev`
C++	Run this command in the Terminal `sudo apt install build-essential`
Boost	Run this command in the Terminal `sudo apt install libboost-all-dev`

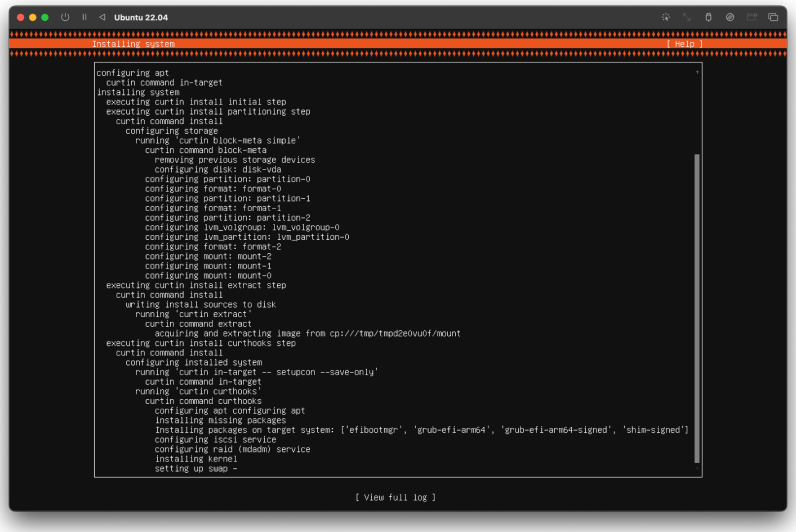
ipdb	Run this command in the Terminal `pip install ipdb`
gdb	Run this command in the Terminal `sudo apt-get install gdb`
pylint	Run this command in the Terminal `pip install pylint`
bandit	Run this command in the Terminal `pip install bandit`
pytest-benchmark	Run this command in the Terminal `pip install pytest-benchmark`
google-benchmark	Follow the installation instructions at https://github.com/google/benchmark#installation
line_profiler	Run this command in the Terminal `pip install line_profiler`
memory_profiler	Run this command in the Terminal `pip install memory-profiler`
py-spy	Run this command in the Terminal `pip install py-spy`
perf	Run this command in the Terminal `sudo apt-get install linux-tools-common linux-tools-generic linux-tools-` ` uname -r ` `

Appendix

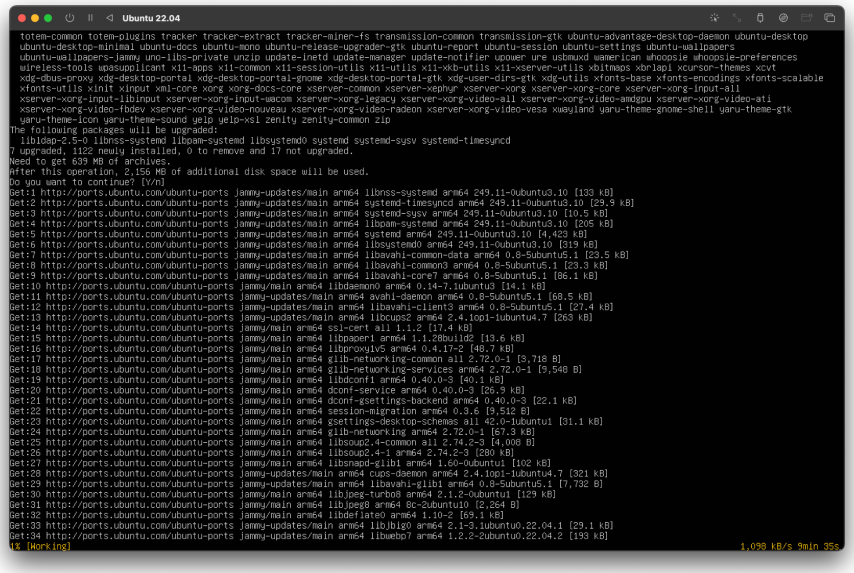
macOS Apple Silicon

For this installation, just keep selecting “DONE” using the arrow keys and pressing enter. If you see a “DISPLAY OUTPUT IS NOT ACTIVE”, just wait for a while.

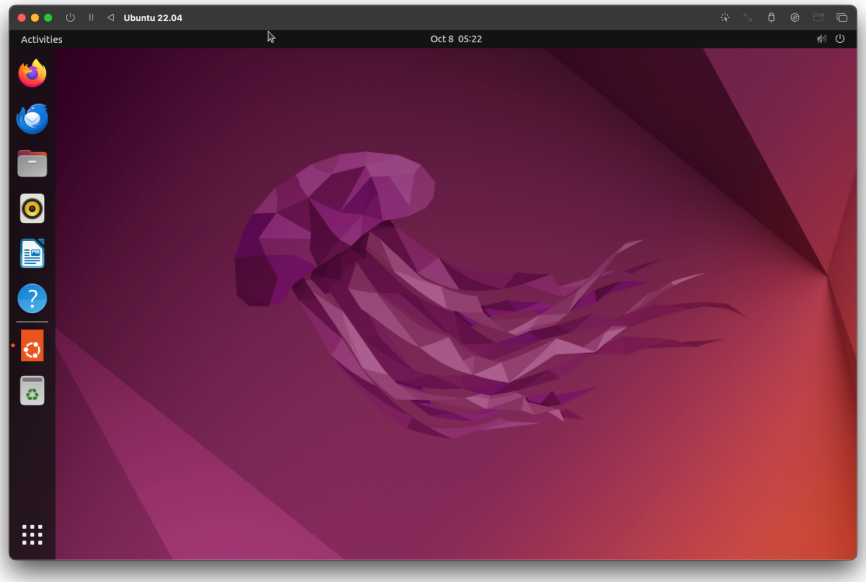
Initial screen



After selecting all the “DONE”s



Installing `ubuntu-desktop`



Installed, and profiting!!!

Can’t access Internet within Virtual Machine

Change to *Emulated VLAN* within settings > network.