

CSE/CEN 598 Hardware Security & Trust

VM Setup

<https://ascslab.org/courses/CSECEN598/index.html>

These directions describe how to set up a VM image that includes the tools necessary for CSE/CEN 598. The provided VM includes a setup script to install the required dependencies for FPGA synthesis and RTL simulation tools in addition to a standard environment for software-based projects.

1. System Requirements

To ensure a smooth installation process, please ensure your system has the following:

- Intel or AMD CPU
 - Minimum 4 cores dedicated to the VM
- 8 GB of RAM
- $\approx$ 50 GB of free storage

If you are running an M-series Apple Silicon device or your system does not meet the above specifications, please make an appointment with the TAs to discuss a workaround.

2. Installation

Step 1: Download the VM Image

Download the VM image from the following link. You may need to be signed in to your ASU account to access the OneDrive link. Because it includes all of the tools we will use this semester, the download is approximately **4.3 GB**. We recommend downloading it on-campus.

https://arizonastateu-my.sharepoint.com/:u:/g/personal/jjahns_sundevils_asu_edu/IQCQ2dW2gG9tQaT-woFeoctcAaQSWBtqZCQ5emIX0jTsiqQ?e=2prXrM

Step 2: Install VirtualBox

Download VirtualBox and follow the installation instructions. VirtualBox is available on Windows, macOS (Intel only), and Linux.

<https://www.virtualbox.org>

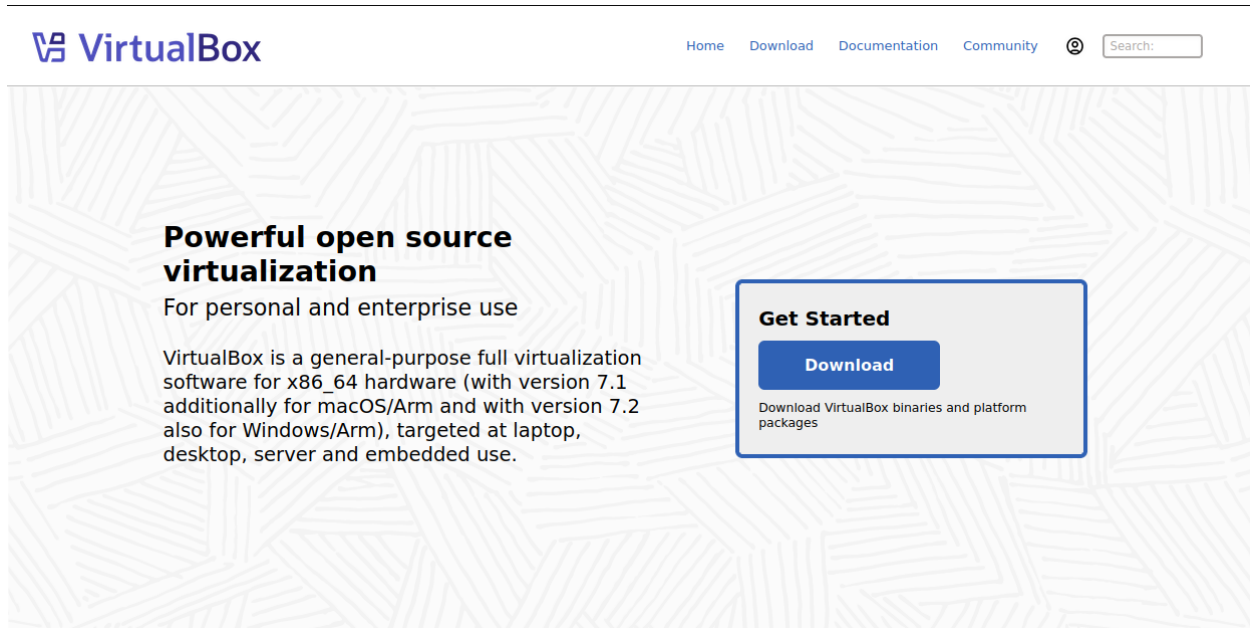


Figure 1: Click “Download” under “Get Started”.

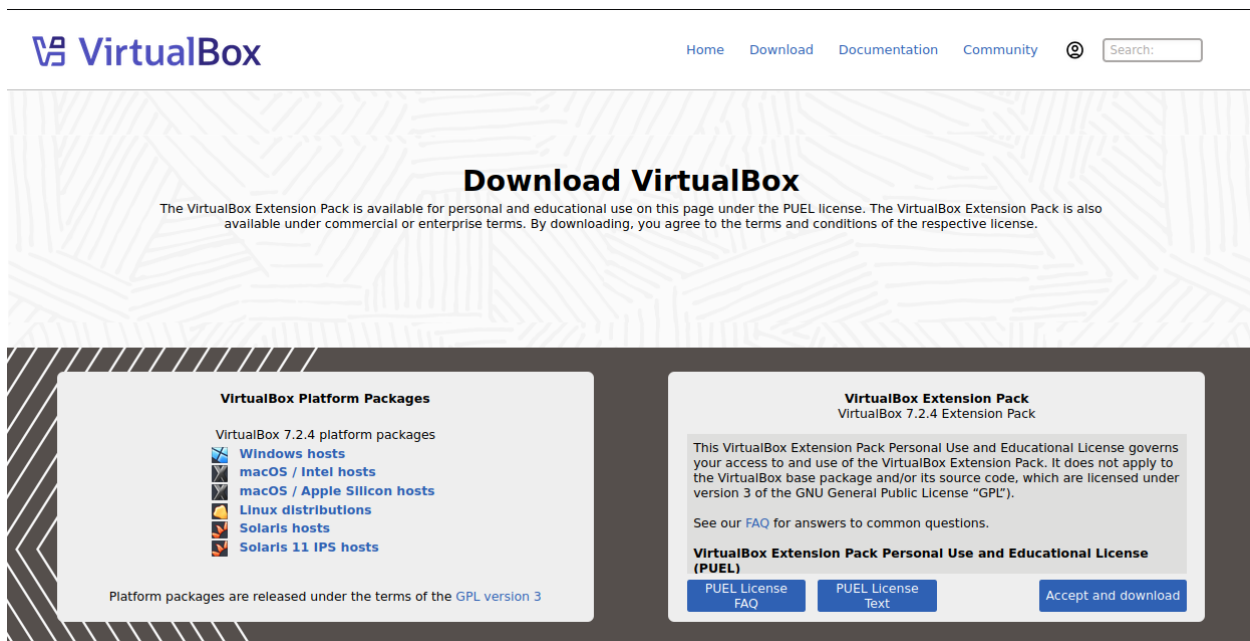


Figure 2: Click the download link for your operating system under ”VirtualBox Platform Packages” and run the installer.

Step 3: Open VirtualBox

Launch VirtualBox after installation.

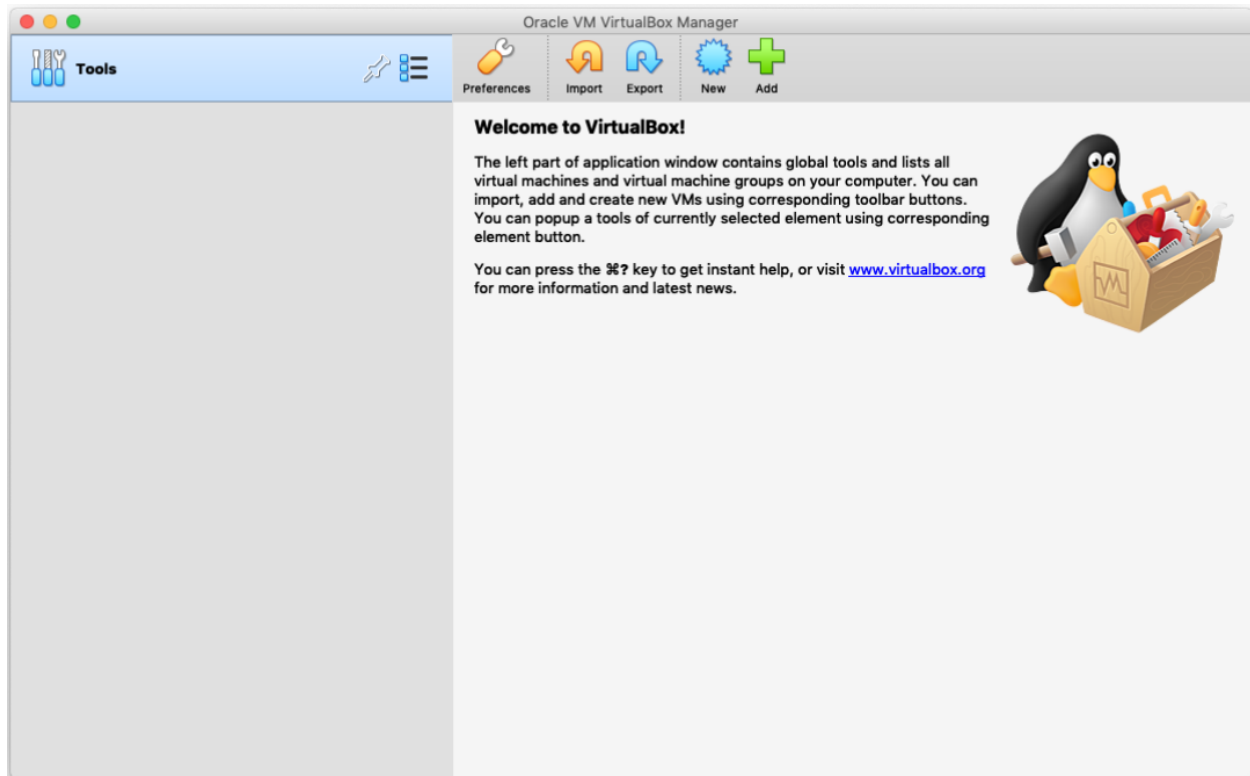


Figure 3: VirtualBox main window after first launch.

Step 4: Import the VM Image

Import the downloaded VM image using **File** → **Import Appliance...**

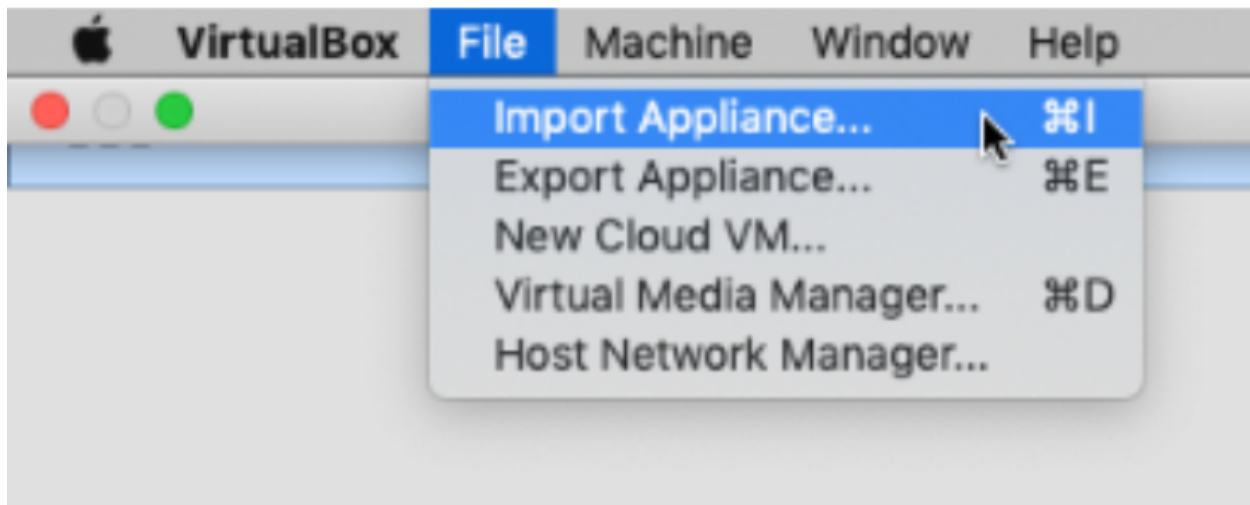


Figure 4: Import Appliance menu option.

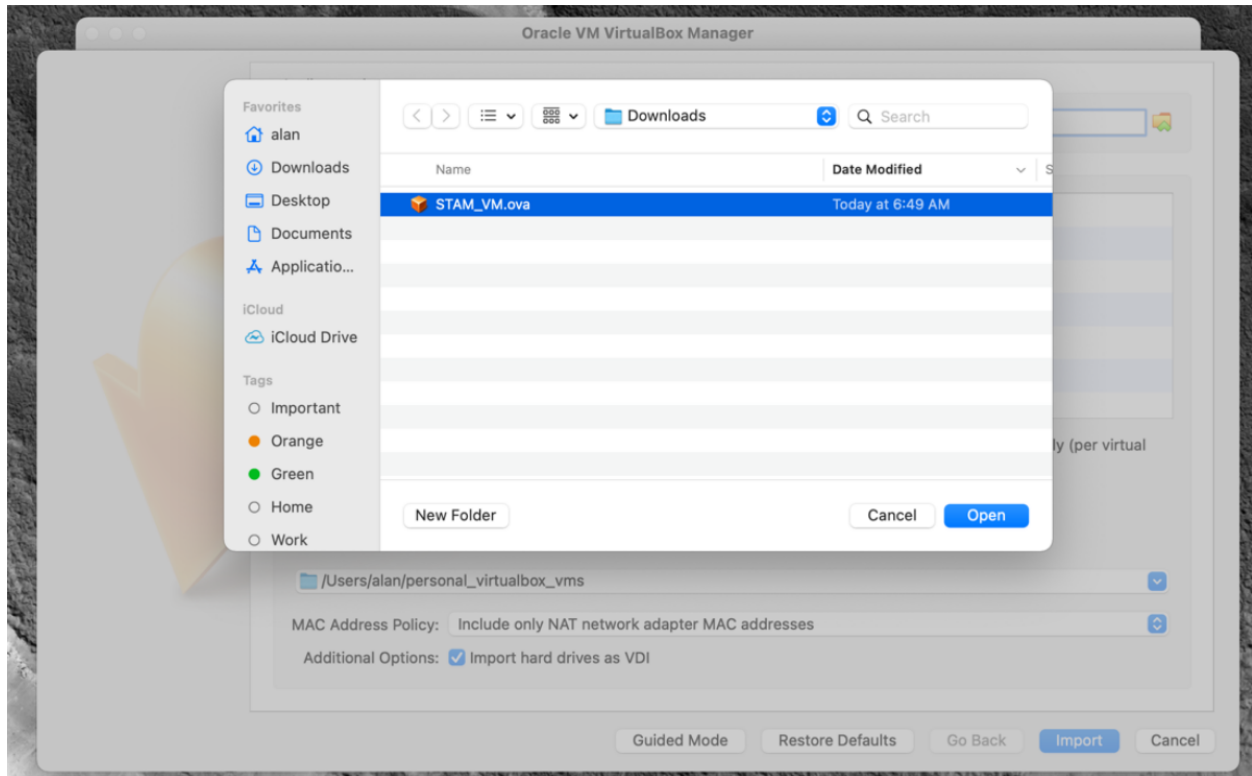


Figure 5: Select the STAM_VM.ova file and click **Open**.

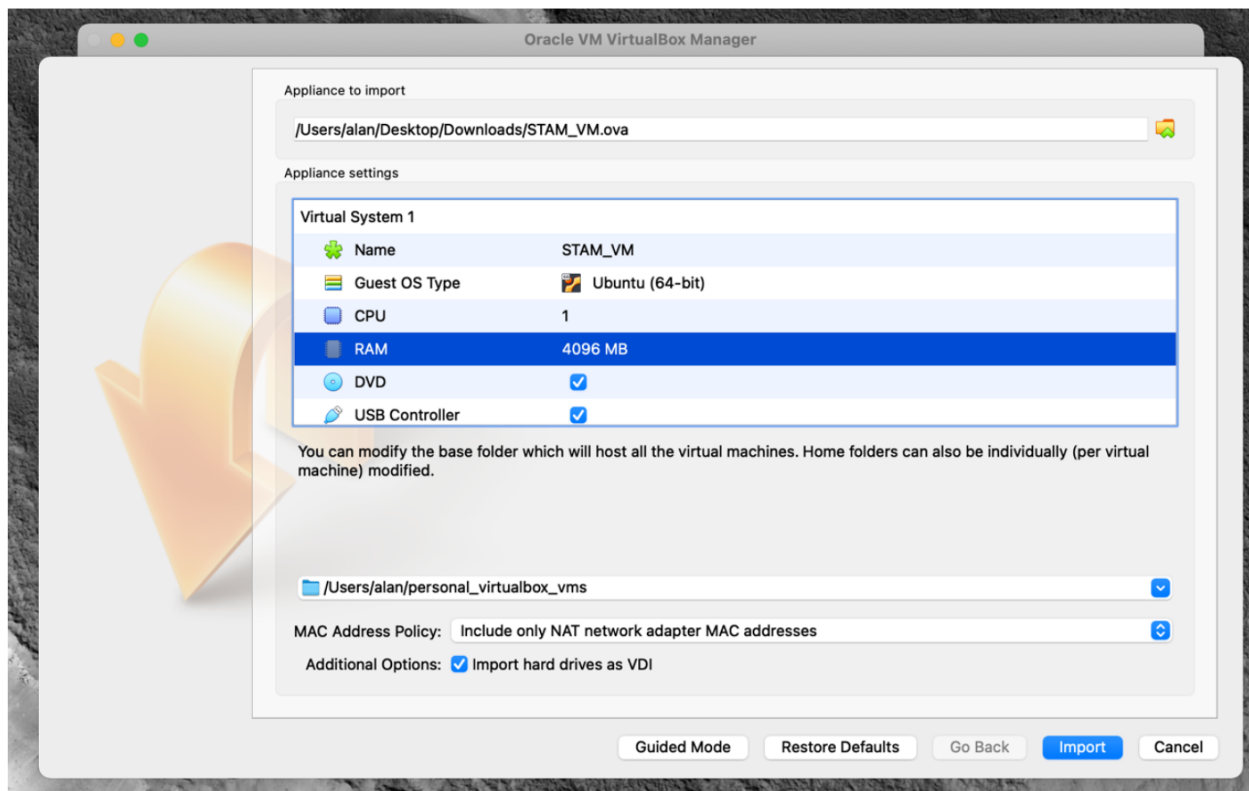
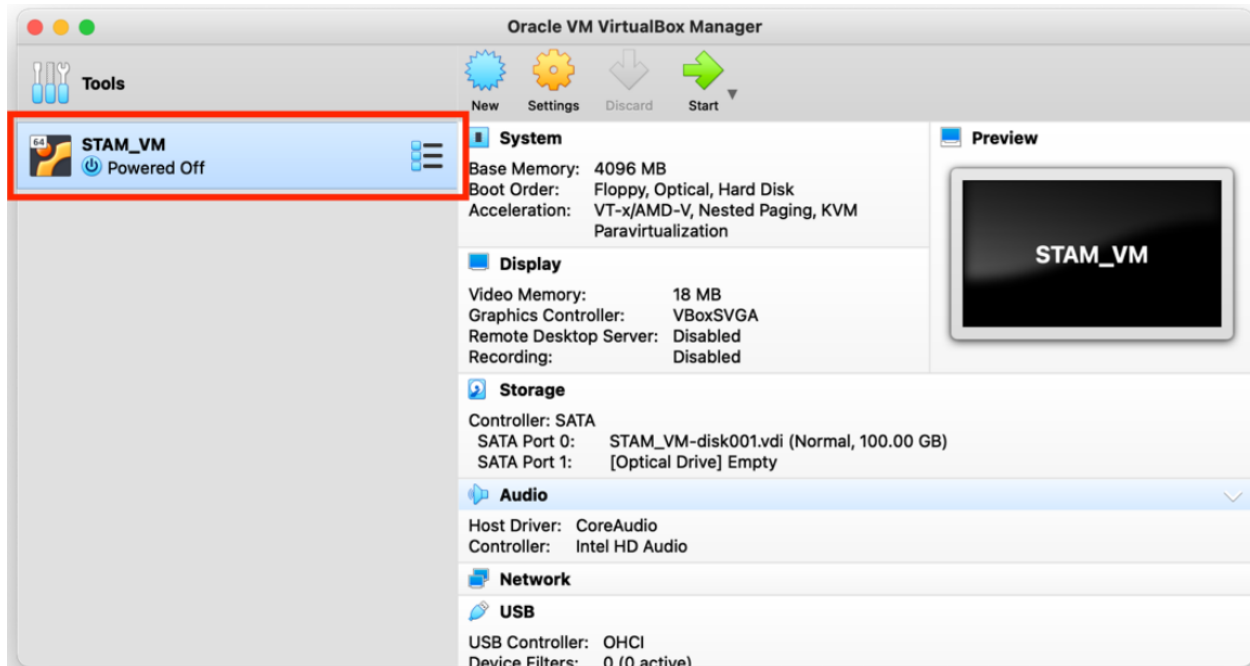


Figure 6: If necessary, raise or lower the amount of RAM and number of CPUs assigned to the VM. **Note:** The TA set their CPUs to 4 and RAM to 8192 after experiencing long loading times.

Step 6: Start the Virtual Machine

After importing the VM image, it should appear in the VirtualBox VM Manager. Select STAM_VM and click **Start** to boot the VM.



3. Login and Troubleshooting

Once the VM has booted, login to the cen598 user. The default password is also “cen598” (without quotes). You should change the default password.

- **NOTE:** If your VM doesn't boot power it off and on again.
- **NOTE:** If you are still having issues try deleting the machine and making a new one.

4. Installing Dependencies

Open a terminal window and navigate to the `/home/cen598/` folder and run

```
chmod +x setup.sh
./setup.sh
```

Monitor the installation and provide your password if needed. Follow the on-screen instructions and choose the default options for each application. Once finished, run

```
source ~/.bashrc
```

Now you have installed all the required dependencies for this course.

5. Starting Project 1

Open a terminal window and navigate to the `/home/cen598/Documents/cen598/` folder. There you will find the materials for Project 1. The remaining projects will assume you have extracted the materials to the `/home/cen598/Documents/cen598/ProjectX` folder.