

CDS105 Virtual Machine

Dear students,

We have prepared a Virtual Machine (VM) with Ubuntu, Vivado, and the RISC-V software development framework. This setup is essential for proceeding with the laboratory exercises of our CDS105 course.

Our initial labs will focus on introductory exercises using Vivado to develop VHDL digital circuits. We will gradually progress to implementing the NEORV-32 RISC-V soft microcontroller-based CPU on your target FPGA board.

To get started, please follow these steps:

- 1. Install VMWare Player 17:** Download and install VMWare Player 17 on your Windows or Linux system. You can obtain it from [VMWare's official website](#).
- 2. Download and Extract the VM:**
 - Download the VM (17GB) from this link: [Download VM](#).
 - Ensure you have at least 50GB of free space on your hard drive and at least 4GB of RAM available to run the VM.
 - Note:** We can provide the VM on a USB stick during lab sessions if you have limited internet speed.
- 3. Run the VM:**
 - Locate and double-click the `Fretz-Ubuntu-64-bit.vmx` file. For example, if it's in `C:\VMware-VMs\Fretz-Ubuntu-64-bit.vmx`.
 - Select "I have copied the VM" in the popup message.
 - Configuration Tip:** Allocate 4GB of RAM to the VM (or 8GB if extra RAM is available). If the VM fails to start, try disabling the performance counters.
- 4. Log into Ubuntu:**
 - Username: `fretz`
 - Password: `fretz`
- 5. Prepare Vivado:**
 - Open a terminal in Ubuntu and run the following commands:

```
1 cd ~/wsp/vivado_prj
2 source /opt/Xilinx/Vivado/2016.4/settings64.sh
3 vivado &
```
- 6. Connect the Zybo Board:**
 - Connect your Zybo board to your PC.
 - Grant the VM access to the USB port (instructions will be provided on how to do this).
- 7. Start Lab 1:** With these steps completed, you are ready to begin LAB1.

Please ensure these steps are completed before our next lab session. If you encounter any issues or need assistance, do not hesitate to reach out.