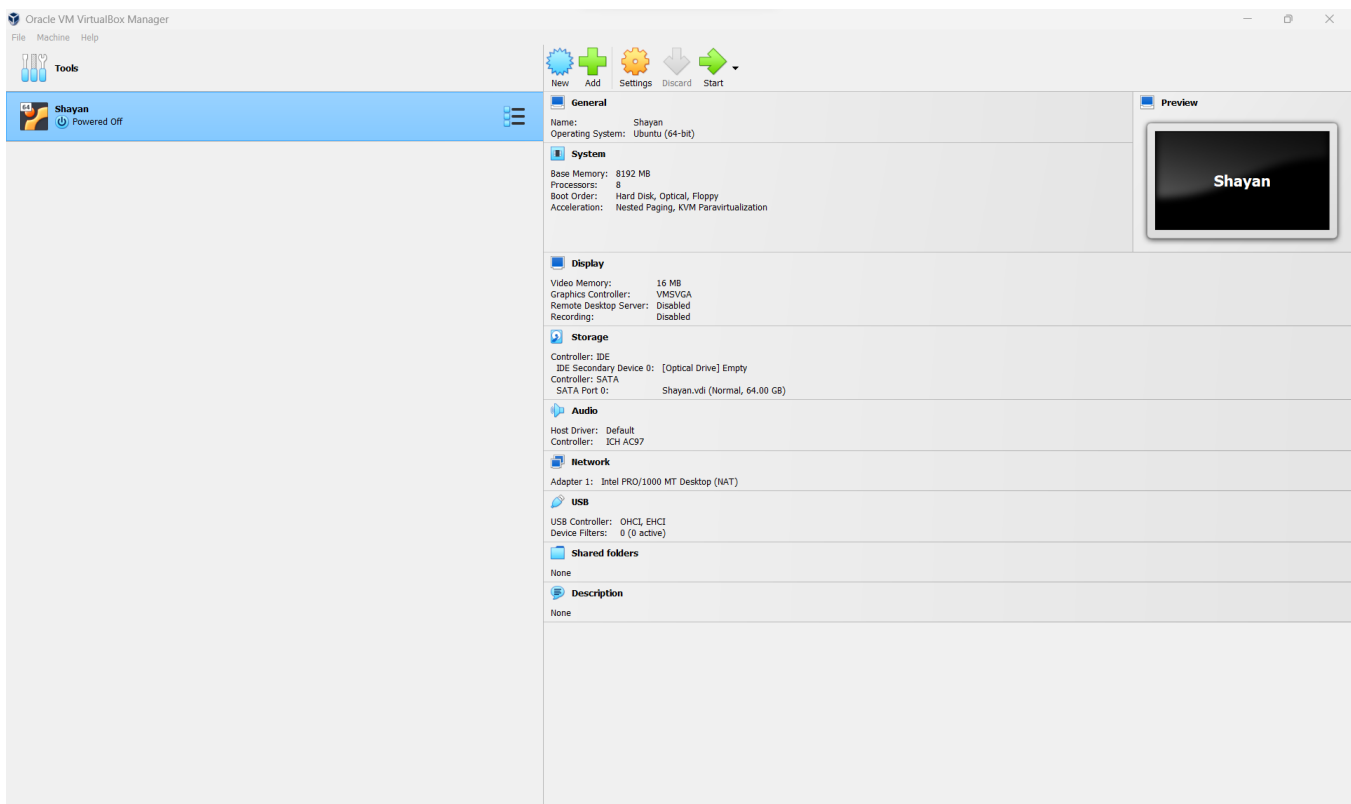




gem5 Step-by-Step Installation

Follow the following steps in order to install the gem5 simulator system.

1. Download “**VirtualBox-7.0.6-155176-Win.exe**” file from the “[Downloads – Oracle VM VirtualBox](#)” page and then install it on your host **Windows** operating system.
2. Download “**ubuntu-22.04.1-desktop-amd64.iso**” file from the “[Download Ubuntu Desktop | Download | Ubuntu](#)” page.
3. Create a virtual machine in your **VirtualBox** software application with the following specifications.



4. Install the downloaded **Ubuntu** operating system on your created virtual machine.

Note: If in execution of the “**sudo**” command in the **Ubuntu** terminal, it shows “**USERNAME is not in the sudoers file. This incident will be reported.**”, then perform the following items to add your username to the system database.

- Run “**su root**”.
- Run “**gedit /etc/sudoers**”.
- Add “**USERNAME ALL=(ALL) ALL**” below the section for the admin user in the opened file.

5. Run the following commands in sequence to satisfy the requirements for installing the gem5 simulator system.

- `sudo apt-get update`
- `sudo apt-get upgrade`
- `sudo apt-get install software-properties-common`
- `sudo add-apt-repository main`
- `sudo apt-add-repository universe`
- `sudo add-apt-repository restricted`
- `sudo add-apt-repository multiverse`
- `sudo apt-get install build-essential`
- `sudo apt-get install git-all`
- `sudo apt-get install swig`
- `sudo apt-get install m4`
- `sudo apt-get install scons`
- `sudo apt-get install zlib1g`
- `sudo apt-get install zlib1g-dev`
- `sudo apt-get install libprotobuf-dev`
- `sudo apt-get install protobuf-compiler`
- `sudo apt-get install libprotoc-dev`
- `sudo apt-get install libgoogle-perftools-dev`
- `sudo apt-get install python3-dev`
- `sudo apt-get install python3`
- `sudo apt-get install libboost-all-dev`
- `sudo apt-get install automake`
- `pip install pre-commit`
- `sudo apt-get install python3-pip`
- `sudo apt-get install pre-commit`
- `pre-commit install`
- `sudo apt-get install zip`
- `sudo apt-get install unzip`

6. Go to your desired directory and run the following commands in sequence to download the simulator files.

- `wget https://github.com/gem5/gem5/archive/refs/heads/stable.zip --output-document=gem5Stable.zip`
- `wget https://github.com/gem5/gem5-resources/archive/refs/heads/stable.zip --output-document=gem5ResourcesStable.zip`
- `unzip gem5Stable.zip`
- `unzip gem5ResourcesStable.zip`

The downloaded files belong to the “**Stable**” version of the gem5 simulator system and its resources. If you are interested in its “**Updating**” version, you can run the following command to download it.

- `git clone https://gem5.googlesource.com/public/gem5`

7. Go to the “**gem5-stable**” directory and run the following command to install the gem5 simulator.

- **scons build/X86/gem5.opt -j 9**

8. Run the following command to test the simulator.

- **build/X86/gem5.opt configs/example/se.py -c tests/test-progs/hello/bin/x86/linux/hello**