AHIR DOCKER INSTALLATION GUIDE

STEP 1: Install docker -

To install docker on **Ubuntu:**

1. sudo apt-get install docker
2. sudo apt-get -y install docker.io

For Windows: Download & run the Docker desktop installer for windows
https://www.docker.com/products/docker-desktop/

If that does not work, please follow the steps given below -

1. sudo apt update
2. sudo apt install apt-transport-https ca-certificates curl software-properties-common
3. curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -
4. sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu $(lsb_release -cs) stable"
5. sudo apt-get -y install docker-ce
6. sudo systemctl status docker
    a. Output -

● docker.service - Docker Application Container Engine
Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: enabled)
Active: active (running) since Tue 2020-05-19 17:00:41 UTC; 17s ago
TriggeredBy: ● docker.socket
Docs: https://docs.docker.com
Main PID: 24321 (dockerd)
Tasks: 8
Memory: 46.4M
CGroup: /system.slice/docker.service
└─24321 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock

At this point, docker should be installed in your system

STEP 2 : Loading docker Image

Note For Windows Users: Use Windows Powershell to perform following steps & remove sudo from commands

1. Download the file ahir_img.tar.gz. (Link) (File size - 1.5 GB, check that the download is complete before proceeding)

The next step will require 5-6 GB of disk space. Ensure that you have enough free space on your device before loading

2. Run "(sudo) docker load -i ahir_img.tar.gz"

STEP 3 : Running and testing

3. Run "(sudo) docker run -it [OPTIONS] ahir_img:deploy"
   [OPTIONS] := -v /your/directory/to/mount/:/home // To mount your directory on docker, not required for sample problem.
   –user $(id -u):$(id -g) // Explained in Appendix below, not required for the sample problem
4. You should now be inside the docker container, run the following commands to test the setup -
   a. cd /release/example
   b. make
5. If the make is successful,
   a. Run ./testbench_sw to run the software simulation. You will see the terminal output ending with:

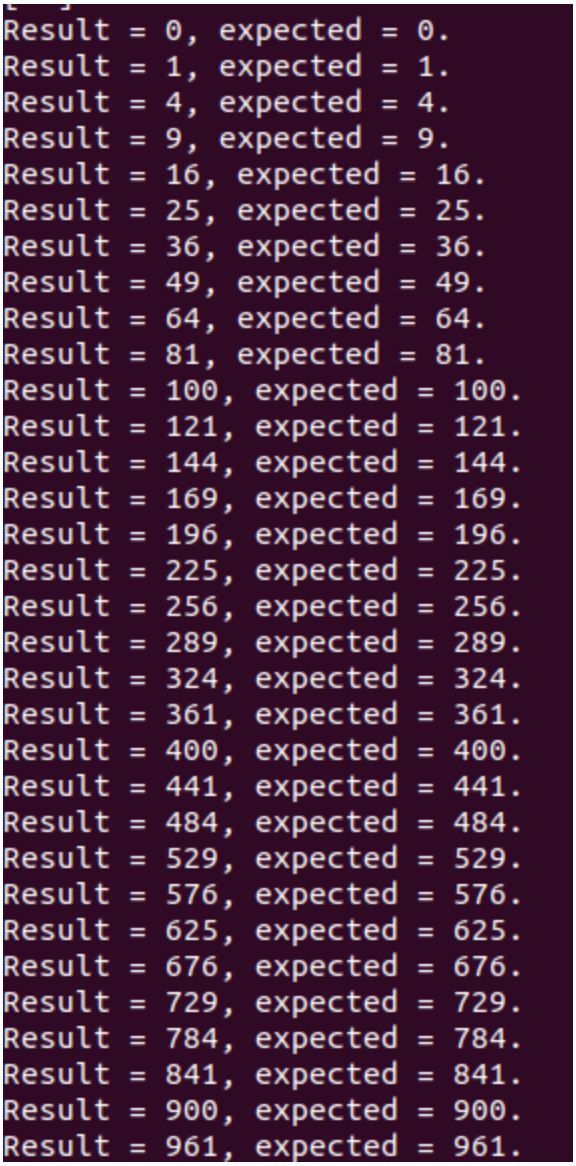

Fig 1 : Output for example hardware

b. If it proceeds correctly, we move to hardware simulation:
    i. Run “”tmux” in the container
    ii. Split into two terminals using Ctrl+B followed by % (can toggle between terminals using Ctrl+B followed by ;)
    iii. On the first terminal, execute ./testbench_hw
    iv. On the second terminal, run ./ahir_system_test_bench
    v. If the simulation is correct, same output as shown in Fig 1 should be observed

APPENDIX

A. Run Docker Without Sudo - (UBUNTU USERS)

To run docker without root privileges, run the following in your terminal after installing docker:

1. sudo groupadd docker
2. sudo usermod -aG docker $USER
3. newgrp docker
4. docker run ahir_img # To test whether the above was successful

If you get an error “Got permission denied while trying to connect to the Docker daemon socket at unix” at a later stage, run step 3 on the terminal and continue

B. Create files with user permissions (not root)

1. Run Docker with the option “–user $(id -u):$(id -g)”

The above will work only after steps in APPENDIX A are performed