This guide will guide you to install Docker and Kubernetes onto your ubuntu server.

Docker Installation

We will first start with Docker, to install docker you will need Sudo permissions to install the application. Log into your server and run **sudo apt install -y docker.io.** This will download docker and once it’s fininshed enter sudo systemctl status docker to see if docker is running. If installed correctly, you should see the status active and ready for use.

If docker is not running, you can enter systemctl start docker then sudo systemctl enable docker.

**A screen shot of a computer

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**Kubernetes Installation**

To install Kubernetes, we will be leveraging Microk8s to install Kubernetes. Enter **sudo snap install microk8s –classic** and wait for the installation to finish. Once finished, check the status with **sudo** **microk8s status --wait-ready** to make sure that microk8s is running. If done successfully, you will be met with the microk8s status as shown below.

**A black screen with white text

Description automatically generated**

Now to avoid having to sudo every command, lets add your user to microk8s as a privileged user so you can run commands without sudoing everything. Run these commands:

**sudo usermod -aG microk8s $USER** [replace $USER with your username]

**sudo chown -f -R $USER ~/.kube [**replace $USER with your username]

These commands allow your user to run commands without sudo.

Now we’re going to enable a few services to help us with Kubernetes. Run these commands to turn on the following services: **microk8s enable dashboard, microk8s enable dns, microk8s enable registry.** You can verify that these are installed and running by running **microk8s status --wait-ready** after.

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Webserver through Docker

Next we’re going to stand up a web server using docker and to do so we’re going to run **docker pull ghcr.io/home-assistant/home-assistant:stable**. This downloads the latest web server image from apache home assistant and will take some time to install so kick back a bit. When finished you will see a message like this:

A screen shot of a computer code

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Next we’re going to create the directory to place this configuration files in. We’re running this in our home directory, so we’re going to run **mkdir home-assistant to** create this directory. Once created, enter **sudo docker run -d \ --name home-assistant \ --restart=unless-stopped \ -p 8123:8123 \ -v /home/your-username/home-assistant:/config \ ghcr.io/home-assistant/home-assistant:stable.**

After creating that container, run **sudo docker ps -a** to verify that it’s running. If you’re successful, you should see something like this.

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Our final test is to log onto the server. For this open a web browser and type in the IP of your server with the port :8123. For my server, this is the IP <http://192.168.186.130:8123>.

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Once completed, you are finished running a apache web server through docker! Good job!

Container Resource

<https://www.rancher.com/learn-the-basics>

This website was actually super helpful for me to fully grasp containers. This resource provides in-depth information on nearly every aspect of containers, atleast enough to get a novice like myself up to speed with them. After reading the guides, they have tutorials that anyone can get running so that they can get their hands dirty further with containers. Truly a superb resource!