

Hands-On Activity: Installing Docker

Docker on an Ubuntu system. By the end of this activity, students should be able to:

1. Understand the role of Docker in containerized application development.
2. Successfully install Docker and configure the Docker repository on Ubuntu.
3. Verify Docker installation by running a test container.
4. Set up Docker to run without **sudo** permissions (optional).
5. Enable Docker to start on boot (optional).

Installing Docker in Linux

1. Update Your System

- First, update your existing list of packages to ensure you have the latest versions available:

Command:

```
sudo apt update
```

2. Install Required Packages

- Install a few prerequisite packages which let apt use packages over HTTPS:

Command:

```
sudo apt install apt-transport-https ca-certificates curl  
software-properties-common
```

3. Add Docker's Official GPG Key

- Docker uses a GPG key to ensure downloads are valid. Add it with the following command:

Command:

```
curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo  
gpg --dearmor -o /usr/share/keyrings/docker-archive-keyring.gpg
```

4. Add the Docker Repository

- Add Docker's official APT repository to your sources list:

Command:

```
echo "deb [arch=$(dpkg --print-architecture) signed-  
by=/usr/share/keyrings/docker-archive-keyring.gpg]  
https://download.docker.com/linux/ubuntu $(lsb_release -cs)  
stable" | sudo tee /etc/apt/sources.list.d/docker.list >  
/dev/null
```

5. Update Your Package List Again

- Now that the Docker repository is added, update the package list to include packages from the new repository:

```
sudo apt update
```

6. Install Docker Engine

- Install Docker and related packages:

```
sudo apt install docker-ce docker-ce-cli containerd.io
```

7. Verify the Installation

```
docker --version
```

(Optional) Enable Docker to Start on Boot

- If you want Docker to start automatically when the system boots, enable the Docker service:

```
sudo systemctl enable docker
```

(Optional) Manage Docker as a Non-Root User

- By default, Docker requires sudo privileges. To use Docker without sudo, add your user to the Docker group:

```
sudo usermod -aG docker ${USER}
```