Docker

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- Docker Setup Guide on Ubuntu Server

Docker Setup Guide on Ubuntu Server

This guide will help you set up Docker on your Ubuntu Server for the first time. We'll cover installing Docker, running your first container, and basic usage.

Prerequisites

- **Ubuntu Server**: Ubuntu 18.04 LTS or newer is recommended.
- **User Privileges**: A user account with `sudo` privileges.

Step 1: Update Your System

Begin by updating your package list and upgrading existing packages:

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```
sudo apt update
sudo apt upgrade -y
```

Step 2: Install Required Packages

Install packages that allow `apt` to use repositories over HTTPS:

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```
sudo apt install -y ca-certificates curl gnupg
```

Step 3: Add Docker’s Official GPG Key

Create a directory for the keyrings:

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```
sudo install -m 0755 -d /etc/apt/keyrings
```

Add Docker's official GPG key:

Copy code

```
curl -fsSL https://download.docker.com/linux/ubuntu/gpg | \
 sudo gpg --dearmor -o /etc/apt/keyrings/docker.gpg
```

Set appropriate permissions:

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```
sudo chmod a+r /etc/apt/keyrings/docker.gpg
```

Step 4: Set Up the Docker Repository

Add the Docker APT repository to your system:

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

Step 5: Install Docker Engine

Update the package database:

Copy code

```
sudo apt update
```

Install Docker Engine and related components:

Copy code

```
sudo apt install -y docker-ce docker-ce-cli containerd.io docker-buildx-plugin docker-compose-plugin
```

Step 6: Verify Docker Installation

Run the hello-world image to verify that Docker is installed correctly:

Copy code

```
sudo docker run hello-world
```

You should see a message that says "Hello from Docker!"

Step 7: Manage Docker as a Non-Root User (Optional)

To run Docker commands without `sudo`, add your user to the `docker` group:

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

Log out and log back in to apply the group membership.

Test Docker without `sudo`:

Copy code

```
docker run hello-world
```

Step 8: Enable Docker to Start on Boot

Ensure Docker starts automatically when the system boots:

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```
sudo systemctl enable docker.service
sudo systemctl enable containerd.service
```

Step 9: Basic Docker Commands

List Docker Images

Copy code

```
docker images
```

List Running Containers

Copy code

```
docker ps
```

List All Containers (Including Stopped Ones)

Copy code

```
docker ps -a
```

Pull an Image from Docker Hub

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```
docker pull ubuntu:latest
```

Run a Container

Copy code

```
docker run -it ubuntu:latest /bin/bash
```

This command runs an Ubuntu container and provides an interactive shell.

Stop a Running Container

First, find the container ID using `docker ps`, then stop it:

Copy code

```
docker stop <container_id>
```

Conclusion

You've successfully installed Docker on your Ubuntu Server and run your first container. You can now explore Docker's features further by creating your own images, managing containers, and integrating Docker into your workflows.

References

- Docker Documentation: Install Docker Engine on Ubuntu
- Docker Hub