Below are the steps to install Docker on an Ubuntu machine, create a Docker image from a Dockerfile, and push it to Docker Hub.

**1. Install Docker on Ubuntu**

First, update your existing list of packages:

sudo apt-get update

Next, install a few prerequisite packages which let apt use packages over HTTPS:

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

Add the GPG key for the official Docker repository to your system:

curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -

Add the Docker repository to APT sources:

sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu $(lsb\_release -cs) stable"

Update your package database with the Docker packages from the newly added repo:

sudo apt-get update

Finally, install Docker:

sudo apt-get install docker-ce

Check that Docker is running:

sudo systemctl status docker

### 2. Create a Docker Image

First, create a directory for your Dockerfile:

mkdir mydockerapp

cd mydockerapp

Create a Dockerfile in this directory. For example:

Dockerfile

# Use an official Node.js runtime as a parent image

FROM node:14

# Set the working directory

WORKDIR /usr/src/app

# Copy package.json and package-lock.json

COPY package\*.json ./

# Install dependencies

RUN npm install

# Copy the rest of the application code

COPY . .

# Expose the application port

EXPOSE 8080

# Define the command to run the application

CMD ["node", "app.js"]

Now, build the Docker image using the Dockerfile:

docker build -t mydockerapp .

### 3. Push the Docker Image to Docker Hub

#### Log in to Docker Hub

First, log in to your Docker Hub account:

docker login

#### Tag the Image

Tag the image so that it points to your repository on Docker Hub. The format should be username/repository:tag. For example:

docker tag mydockerapp yourdockerhubusername/mydockerapp:latest

#### Push the Image

Push the image to Docker Hub:

docker push yourdockerhubusername/mydockerapp:latest

### Summary of Commands

Here’s a summary of all the commands you’ll run:

# Update package database

sudo apt-get update

# Install prerequisite packages

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

# Add Docker’s GPG key

curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -

# Add Docker repository to APT sources

sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu $(lsb\_release -cs) stable"

# Update package database again

sudo apt-get update

# Install Docker

sudo apt-get install docker-ce

# Check Docker status

sudo systemctl status docker

# Create directory for Dockerfile

mkdir mydockerapp

cd mydockerapp

# Create and edit Dockerfile

nano Dockerfile

# Build Docker image

docker build -t mydockerapp .

# Log in to Docker Hub

docker login

# Tag the Docker image

docker tag mydockerapp yourdockerhubusername/mydockerapp:latest

# Push the Docker image to Docker Hub

docker push yourdockerhubusername/mydockerapp:latest

Replace yourdockerhubusername with your actual Docker Hub username.