

# Overview of Docker

Spoken Tutorial Project  
<https://spoken-tutorial.org>

National Mission on Education through ICT

Nirmala Venkat

IIT Bombay

07 Mar 2025



# Learning Objectives

In this tutorial we will learn about



# Learning Objectives

In this tutorial we will learn about

- Docker



# Learning Objectives

In this tutorial we will learn about

- Docker
- Advantages of Docker



# Learning Objectives

In this tutorial we will learn about

- Docker
- Advantages of Docker
- The content available in various tutorials in this series



# System Requirements

To record this tutorial, I am using



# System Requirements

To record this tutorial, I am using

- **Ubuntu Linux OS version 22.04**



# Pre-requisites

To follow this series, you must have basic knowledge of using

- Linux



# Pre-requisites

To follow this series, you must have basic knowledge of using

- Linux



# Pre-requisites

To follow this series, you must have basic knowledge of using

- Linux

If not, please go through the relevant spoken tutorials on this

<https://spoken-tutorial.org>



- Docker Desktop is built using an open source software platform



# Docker

- Docker Desktop is built using an open source software platform
- It allows you to build, test, and deploy applications quickly



- With Docker, you can package your application along with all its dependencies



- With Docker, you can package your application along with all its dependencies
- It isolates applications to prevent conflicts and ensure consistency



# Advantages of Docker



# Advantages of Docker

- **Portability – Run applications consistently across different environments**



# Advantages of Docker

- Portability – Run applications consistently across different environments
- Efficiency – Uses fewer resources than traditional virtual machines



# Advantages of Docker

- **Portability – Run applications consistently across different environments**
- **Efficiency – Uses fewer resources than traditional virtual machines**
- **Scalability – Easily scale applications up or down as needed**



# Advantages of Docker

- Isolation – Keeps applications separate to prevent conflicts





# Who can use Docker?



# Who can use Docker?

- Developers - **Build, test, and deploy applications faster**



# Who can use Docker?

- Developers - **Build, test, and deploy applications faster**
- System Administrators – **Manage and deploy applications efficiently**



# Who can use Docker?

- Developers - **Build, test, and deploy applications faster**
- System Administrators – **Manage and deploy applications efficiently**
- DevOps Teams – **Automate workflows and CI/CD pipelines**



# Who can use Docker?

- Enterprises – **Ensure consistency across multiple environments**



# Who can use Docker?

- Enterprises – **Ensure consistency across multiple environments**
- Students & Learners – **Practice coding in isolated environments**



# Installation of Docker



# Installation of Docker

In this tutorial, we will learn how to

- Install Docker and its dependencies on Ubuntu



# Installation of Docker

In this tutorial, we will learn how to

- Install Docker and its dependencies on Ubuntu
- Install Docker Desktop on Windows



# Installation of Docker

In this tutorial, we will learn how to

- Install Docker and its dependencies on Ubuntu
- Install Docker Desktop on Windows
- Download and run a Docker container



# Basics of Images and Containers



# Basics of Images and Containers

It explains

- Images and containers



# Basics of Images and Containers

It explains

- Images and containers
- Pulling an image from Docker Hub



# Basics of Images and Containers

It explains

- Images and containers
- Pulling an image from Docker Hub
- Accessing the running application



# Basics of Images and Containers

It explains

- Images and containers
- Pulling an image from Docker Hub
- Accessing the running application
- **Viewing running containers**



# Basics of Images and Containers

## It explains

- Images and containers
- Pulling an image from Docker Hub
- Accessing the running application
- Viewing running containers
- Stopping and starting a container



# Docker Compose



# Docker Compose

Here, we will learn about

- Docker compose and its uses



# Docker Compose

Here, we will learn about

- Docker compose and its uses
- Running multiple Docker images using Docker Compose



# Building Docker Images



# Building Docker Images

In this tutorial, we will learn about

- Building Docker images



# Building Docker Images

In this tutorial, we will learn about

- Building Docker images
- Pushing images to Docker Hub



# Building Docker Images

In this tutorial, we will learn about

- Building Docker images
- Pushing images to Docker Hub
- Image layers and size optimization



# Automating Docker Builds



# Automating Docker Builds

In this tutorial, we will learn to

- Setup and configure GitHub



# Automating Docker Builds

In this tutorial, we will learn to

- Setup and configure GitHub
- Automate Docker builds using GitHub



# Automating Docker Builds

In this tutorial, we will learn to

- Setup and configure GitHub
- Automate Docker builds using GitHub
- Pull and test the built images



# Docker Security



# Docker Security

In this tutorial, we will learn about

- Security in Docker



# Docker Security

In this tutorial, we will learn about

- Security in Docker
- Docker Content Trust and Image Signing



# Docker Security

In this tutorial, we will learn about

- Security in Docker
- Docker Content Trust and Image Signing
- Tools for Security Scanning



# Docker Swarm



# Docker Swarm

In this tutorial, we will learn about

- Docker Swarm





# Docker Networking



# Docker Networking

In this tutorial, we will learn about

- **Fundamentals of Docker networking**



# Docker Networking

In this tutorial, we will learn about

- Fundamentals of Docker networking
- Connecting containers and establishing communication links



# Docker Networking

In this tutorial, we will learn about

- Fundamentals of Docker networking
- Connecting containers and establishing communication links
- Configuring port exposure and service exposure



# Docker Networking

In this tutorial, we will learn about

- Fundamentals of Docker networking
- Connecting containers and establishing communication links
- Configuring port exposure and service exposure
- Deleting docker network



# Advanced Docker

- Write a dockerfile for python automation environment configurations



# Advanced Docker

- Write a dockerfile for python automation environment configurations
- Build a docker image from the docker file



# Advanced Docker

- Write a dockerfile for python automation environment configurations
- Build a docker image from the docker file
- Run containers using the docker image



# Advanced Docker

- Write a dockerfile for python automation environment configurations
- Build a docker image from the docker file
- Run containers using the docker image
- Test the docker image to run python automation script



# Summary

In this tutorial, we have learnt about

- Docker
- Advantages of Docker
- The content available in various tutorials in this series



# About the Spoken Tutorial Project

- Watch the video available at [http://spoken-tutorial.org/What\\_is\\_a\\_Spoken\\_Tutorial](http://spoken-tutorial.org/What_is_a_Spoken_Tutorial)
- It summarises the Spoken Tutorial project
- If you do not have good bandwidth, you can download and watch it



# Spoken Tutorial Workshops

## The Spoken Tutorial Project Team

- Conducts workshops using spoken tutorials
- Gives certificates to those who pass an online test
- For more details, please write to [contact@spoken-tutorial.org](mailto:contact@spoken-tutorial.org)



# Answers for THIS spoken tutorial

- Questions in THIS Spoken Tutorial
- Visit <https://forums.spoken-tutorial.org>
- Choose the minute and second where you have the question
- Explain your question briefly
- The Spoken Tutorial project will ensure an answer
- You will have to register to ask questions



# Forum for specific questions

- **The Spoken Tutorial forum is for specific questions on this tutorial**
- **Please do not post unrelated and general questions on them**
- **This will help reduce the clutter**
- **With less clutter, we can use these discussions as instructional material**



# FOSSEE Forum

- **For any general or technical questions on Docker, visit the FOSSEE forum and post your question**  
<https://forums.fossee.in/>



# Acknowledgement

- **The Spoken Tutorial project was established by Ministry of Education, Govt. of India**



# Thank you

Thanks for watching  
<https://spoken-tutorial.org>

