

(TR-102) MASTERING THE SEMANTIC WEB –

Training Day 19 Report :

9 July 2024

Introduction to Docker:

Docker is an open-source platform that automates the deployment, scaling, and management of applications using containerization. Containers package an application and its dependencies together, ensuring that it runs consistently across different environments. This approach solves the problem of "it works on my machine" by providing a standardized unit of software.

Key Components:

- Docker Engine: The runtime that allows users to build and run containers.
- Docker Images: Read-only templates used to create containers. Images contain everything needed to run a piece of software, including the code, runtime, libraries, and configurations.

- Docker Containers: Lightweight, standalone, and executable packages that run a piece of software. Containers are created from Docker images.
- Dockerfile: A script containing a series of instructions on how to build a Docker image.

Introduction to Docker Hub:

Docker Hub is a cloud-based place where users can find and share container images. It provides:

- Public Repositories: Where users can share images with the community.
- Private Repositories: For storing personal images.
- Automated Builds: Automatically create container images from GitHub or Bitbucket repositories.
- Official Images: Curated and maintained by Docker, these images provide a range of software applications and tools.

Docker Installation

- Download Docker Desktop from the [official Docker website](#).
- Run the installer and follow the on-screen instructions.
- Start Docker Desktop from the Start menu.

Docker Desktop Setup:

The screenshot displays the Docker Desktop application window. The top navigation bar includes the Docker logo, a search bar, and a 'Sign in' button. The left sidebar contains navigation links for Containers, Images, Volumes, Builds, Docker Scout, and Extensions. The main content area is titled 'Containers' and shows a table of running containers. A search bar at the top of the table contains the text '4031a712421d'. The table has columns for Name, Image, Status, Port(s), CPU (%), Last started, and Actions. One container is listed with the name 'dreamy_vishvesvaraya', image 'cicd-html-css-project', and status 'Exited (255)'. Below the table, there is a 'Walkthroughs' section with two cards: 'Multi-container applications' (8 mins) and 'Containerize your application' (3 mins). The bottom status bar shows 'Engine running', RAM usage (1.15 GB), CPU usage (0.08%), and the Docker version (v4.31.1).

docker desktop

Search for images, containers, volumes, extensions... Ctrl+K

Containers

Container CPU usage ⓘ
No containers are running.

Container memory usage ⓘ
No containers are running.

Show charts

4031a712421d

Only show running containers

<input type="checkbox"/>	Name	Image	Status	Port(s)	CPU (%)	Last started	Actions
<input type="checkbox"/>	dreamy_vishvesvaraya 087df440d154	cicd-html-css-project	Exited (255)	8080:80	N/A	3 hours ago	▶ ⋮ 🗑

Showing 1 item

Walkthroughs

Multi-container applications
8 mins

Containerize your application
3 mins

View more in the Learning center

Engine running RAM 1.15 GB CPU 0.08% v4.31.1 1