

Docker Cheatsheet

Here is a little summary based on our discussion.

Core Concept

- **What it is:** A platform to build, share, and run applications in isolated environments called **containers**.
- **How it Works:** Uses the host machine's Linux kernel.
 - **Namespaces:** Provide isolation (processes, networking, files).
 - **cgroups:** Limit and manage resource usage (CPU, memory).

Architecture

- A **client-server** model.
- **Docker Client (docker):** The command-line tool you use.
- **Docker Daemon (dockerd):** The background service that manages everything.
- **Communication:** The client talks to the daemon using a **REST API** over a **UNIX socket** (locally) or a **network port** (remotely).

Key Objects

- **Dockerfile:** A text file with instructions on how to build an image.
- **Image:** A read-only, layered **template** built from a **Dockerfile**.
- **Container:** A runnable, "live" **instance** of an image. This is your actual running application.
- **Volume:** A mechanism for giving a container **persistent storage** so data isn't lost when the container is removed.
- **Network:** A virtual network that allows containers to **communicate** with each other and the outside world.