



# CDW Documentation

## Docker Basics - Command Reference

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### Docker Installation and Health Checks

#### **docker version**

##### Purpose

Verifies that the Docker CLI is installed and whether it can communicate with the Docker daemon.

##### What it shows

Client version information and server (daemon) version information.

##### Usage

```
docker version
```

##### Notes

If the Docker daemon is not running, only client information is shown and the server section fails.

#### **docker info**

##### Purpose

Displays detailed system-wide Docker configuration and runtime information.

##### What it shows

Docker root directory, storage driver, number of images and containers, OS and architecture details.

##### Usage

```
docker info
```

### Working With Containers

#### **docker run**

##### Purpose

Creates and starts a new container from an image.

##### Common usage

```
docker run hello-world
```

```
docker run -it ubuntu bash
```

```
docker run -d --name my-nginx -p 8080:80 nginx
```

##### Key options

-it runs the container interactively

-d runs the container in the background

--name assigns a readable name to the container

-p maps host ports to container ports

#### **docker ps**

### Purpose

Lists containers.

### Usage

```
docker ps
```

```
docker ps -a
```

docker ps shows running containers only.

docker ps -a includes stopped containers.

## **docker stop and docker start**

### Purpose

Stops or starts an existing container.

### Usage

```
docker stop my-container
```

```
docker start my-container
```

## **docker rm**

### Purpose

Removes a stopped container.

### Usage

```
docker rm my-container
```

## **docker inspect**

### Purpose

Displays low-level JSON metadata for containers or images.

### Typical use cases

Inspect environment variables, network settings, mounts, ports, and runtime configuration.

### Usage

```
docker inspect my-container
```

## **Executing Commands in Running Containers**

### **docker exec**

#### Purpose

Runs a command inside a running container.

#### Interactive shell

```
docker exec -it my-container bash
```

```
docker exec -it my-container sh
```

One-off command

```
docker exec my-container ls /etc
```

## **Logs and Runtime Monitoring**

### **docker logs**

Purpose

Displays standard output and error logs from a container.

Usage

```
docker logs my-container
```

```
docker logs -f my-container
```

```
docker logs -tail 50 my-container
```

### **docker stats**

Purpose

Shows real-time CPU, memory, network, and disk usage for containers.

Usage

```
docker stats
```

```
docker stats my-container
```

## **Images and Registries**

### **docker pull**

Purpose

Downloads an image from a container registry.

Usage

```
docker pull ubuntu
```

```
docker pull nvcr.io/nvidia/pytorch:24.04-py3
```

### **docker images**

Purpose

Lists all locally available images.

Usage

```
docker images
```

### **docker tag**

### Purpose

Creates an additional name and tag for an image, commonly used before pushing to a registry.

### Usage

```
docker tag nginx myuser/nginx:demo
```

## **docker push**

### Purpose

Uploads an image to a container registry.

### Usage

```
docker push myuser/nginx:demo
```

### Prerequisite

You must authenticate with the registry using docker login.

## **Cleanup and Disk Management**

### **docker system df**

#### Purpose

Displays Docker disk usage information.

#### Usage

```
docker system df
```

### **docker container prune**

#### Purpose

Removes all stopped containers.

#### Usage

```
docker container prune
```

### **docker image prune**

#### Purpose

Removes dangling and unused images.

#### Usage

```
docker image prune
```

### **docker system prune**

#### Purpose

Removes unused containers, networks, images, and build cache.

#### Usage

`docker system prune`

Aggressive cleanup

`docker system prune -a --volumes`

This removes all unused images and volumes and should be used with caution.

## **Docker Contexts**

### **docker context ls**

Purpose

Lists available Docker contexts such as local, desktop, or remote environments.

Usage

`docker context ls`

### **docker context use**

Purpose

Switches the active Docker context.

Usage

`docker context use desktop-linux`