Docker Commands for Ubuntu - Simple Guide

What is Docker?

Docker packages applications into "containers" - like boxes that contain everything needed to run an app. These containers run the same way on any computer with Docker.

Key Concepts:

- **Image**: Template/blueprint for containers
- **Container**: Running instance of an image

Install Docker on Ubuntu

```bash
sudo apt update
sudo apt install docker.io
sudo systemctl start docker
sudo usermod -aG docker $USER
newgrp docker
```

Essential Docker Commands

1. **docker images** - List downloaded images

```bash
docker images
```

Shows all image templates on your computer.

2. **docker pull** - Download an image

```bash
docker pull nginx
docker pull ubuntu:22.04
```

Downloads image templates from Docker Hub.

3. **docker run** - Create and start container

```bash
```

```
docker run -d -p 8080:80 --name web nginx
docker run -it ubuntu:22.04 bash
```

- `-d` = run in background
- `-p 8080:80` = map port 8080 to container port 80
- `--name web` = give container a name
- `-it` = interactive mode with terminal

4. **docker ps** - List containers

bash

```
docker ps       # Running containers
docker ps -a    # All containers
```

5. **docker logs** - View container output

bash

```
docker logs web
docker logs -f web    # Follow logs in real-time
```

6. **docker stop** - Stop container

bash

```
docker stop web
```

7. **docker start** - Start stopped container

bash

```
docker start web
```

8. **docker exec** - Run commands in running container

bash

```
docker exec -it web bash    # Get shell inside container
docker exec web ls /app     # Run single command
```

9. **docker cp** - Copy files between host and container

bash

```
docker cp file.txt web:/app/          # Host to container
docker cp web:/app/log.txt ./         # Container to host
```

10. **docker rm** - Remove containers

bash

```
docker rm web           # Remove stopped container
docker rm -f web        # Force remove running container
```

11. **docker rmi** - Remove images

bash

```
docker rmi nginx
```

12. **docker system prune** - Clean up unused resources

bash

```
docker system prune       # Remove unused containers, images, networks
```

Quick Example

bash

```
# Download and run nginx web server
docker run -d -p 8080:80 --name mysite nginx

# Visit http://localhost:8080 in browser

# Stop and remove
docker stop mysite
docker rm mysite
```

That's it! These 12 commands cover 90% of Docker usage.