□□ Docker Compose Guide

Running a Docker Compose Project

This guide explains how to start services defined in a `compose.yml` or `docker-compose.yml` file.

Prerequisites

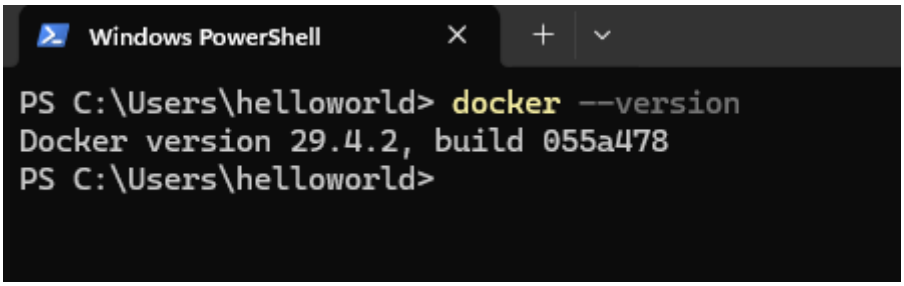
Make sure the following software is installed:

- Docker Engine
- Docker Compose Plugin

Verify the installation:

```
docker --version
docker compose version
```

Expected output:



Project Structure

Example:

```
llama-cpp/
??? compose.yml
??? models/
```

```
services:
  llama-cpp:
    image: registry.chenjia.org/llama-cpp:sm120-rev1
    container_name: llama-cpp
    ports:
      - 8888:8080
    privileged: true
    ipc: host
    volumes:
      - ./models:/models:ro
    command: >
      -m /models/gemma-4-E2B-it-Q4_K_M.gguf
      -md /models/gemma-4-E2B-it-assistant.Q4_K_M.gguf
      --port 8080 --host 0.0.0.0 -t 12 -c 262144 -b 4096 -ub 4096 -ngl 99 -ngld 99
      --no-context-shift --no-mmap --jinja --cpu-moe --kv-unified
      -ctk turbo3 -ctv turbo3 -ctkd turbo3 -ctvd turbo3 --parallel 4 -fa on
      --spec-type nextn --draft-max 3 --draft-min 0
    deploy:
      resources:
        reservations:
          devices:
            - driver: nvidia
              count: all
              capabilities:
                - gpu
    restart: unless-stopped
```

Start the Services

Navigate to the directory containing the compose file:

```
cd llama-cpp
```

Start all services in the background:

```
docker compose up -d
```

If your file has a custom name:

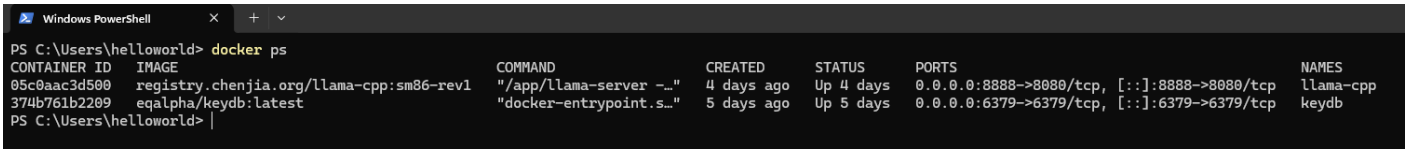
```
docker compose -f my-compose.yml up -d
```

Check Container Status

Display running containers:

```
docker compose ps
```

Example output:



View Logs

Show logs from all services:

```
docker compose logs
```

Follow logs in real time:

```
docker compose logs -f
```

View logs from a specific service:

```
docker compose logs -f web
```

Restart Services

Restart all services:

```
docker compose restart
```

Restart a single service:

```
docker compose restart web
```

Stop Services

Stop containers while preserving volumes and networks:

```
docker compose stop
```

Stop and Remove Everything

Remove containers, networks, and temporary resources:

```
docker compose down
```

Also remove volumes:

```
docker compose down -v
```

Also remove locally built images:

```
docker compose down --rmi local
```

Update Containers After Editing compose.yml

If you modify the compose file, recreate the containers:

```
docker compose up -d
```

If the image needs to be rebuilt:

```
docker compose up -d --build
```

Force recreation:

```
docker compose up -d --force-recreate
```

Pull Latest Images

Download the latest image versions:

```
docker compose pull
```

Then restart:

```
docker compose up -d
```

Useful Commands

Action	Command
Start services	`docker compose up -d`
Stop services	`docker compose stop`
Remove services	`docker compose down`
View logs	`docker compose logs -f`
List containers	`docker compose ps`
Restart services	`docker compose restart`
Pull updates	`docker compose pull`
Rebuild images	`docker compose up -d --build`

Common Troubleshooting

Port Already in Use

Error:

```
Bind for 0.0.0.0:8080 failed
```

Check which process is using the port:

Linux:

```
sudo lsof -i :8080
```

Windows:

```
netstat -ano | findstr :8080
```

Change the port mapping in `compose.yml` if necessary.

Container Keeps Restarting

Inspect logs:

```
docker compose logs -f <service_name>
```

Example:

```
docker compose logs -f llama-cpp
```

Configuration Validation

Validate the compose file:

```
docker compose config
```

This command checks syntax and displays the final merged configuration.

Recommended Workflow

```
# Start services
docker compose up -d

# Check status
docker compose ps

# View logs
docker compose logs -f

# Update images
docker compose pull
docker compose up -d

# Shutdown
docker compose down
```

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