

? How to Mount NFS Storage for Docker Containers (Docker Compose Version)

? Purpose

Configure Docker Compose to **automatically mount an NFS share** as a volume into your containers without manually mounting it on the host.

1. Prerequisites

- Install the NFS client:

```
bash
```

```
sudo apt install nfs-common -y
```

- Know your NFS server and export path.

Example:

- NFS Server: `192.168.100.11`
 - Export Path: `/mnt/hdd-storage/my-nfs-share`
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2. Example `docker-compose.yml`

yaml

```
version: '3.8'

services:
  my-app:
    image: my-docker-image
```

```
container_name: my-app
volumes:
  - my-nfs-storage:/app/data
ports:
  - "8080:8080"
restart: unless-stopped
```

```
volumes:
  my-nfs-storage:
    driver: local
    driver_opts:
      type: "nfs"
      o: "addr=192.168.100.11,nfsvers=4,hard,timeo=600,retrans=2"
      device: ":/mnt/hdd-storage/my-nfs-share"
```

3. Key Configuration Explained

“ **Note:** The colon `:` at the start of `device:` is important.

4. Deploy the Stack

Run this from the folder where `docker-compose.yml` is located:

bash

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

Docker will:

- Connect to the NFS server.
 - Mount the remote share.
 - Bind it into the container automatically.
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5. Best Practices

- **Let Docker manage the NFS mount** (don't mount manually with `mount` command if doing it this way).
 - Ensure your NFS server is reachable **before starting the container**.
 - Use `restart: unless-stopped` to automatically recover from network issues.
 - For production setups, use **hard mounts with retries** (`hard,timeo=600,retrans=2`).
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6. Summary Table

? Bonus: Troubleshooting NFS Mounts

Common issues:

- **Permission Denied**
 - Check server-side export permissions (e.g., `/etc/exports`).
 - Verify the NFS share allows the client IP.
 - Set correct UID/GID or enable `no_root_squash` if necessary.
 - **Slow Performance**
 - Try using `rsize=131072, wsize=131072` options.
 - Check if NFS server is overloaded.
 - Prefer NFSv4 for better performance.
 - **Mount Failures**
 - Verify NFS server IP and path.
 - Check firewall rules (port 2049 TCP/UDP for NFS).
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? Final Tip

“ For critical workloads:

Use a private network between Docker and the NFS server for security and stability!

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