DevOps Shack

50 Docker Errors & Resolutions

1. Docker Daemon Not Running

Error: Cannot connect to the Docker daemon. Is the docker daemon running on this host?
Cause: Docker daemon is not running.
Resolution:

- Start the Docker service:

```
sudo systemctl start docker
```

- Verify the status:

```
sudo systemctl status docker
```

2. Docker Permission Denied

Error: permission denied while trying to connect to the Docker daemon socket
Cause: User not added to the docker group.
Resolution:

- Add the user to the Docker group:

```
sudo usermod -aG docker $USER
```

- Log out and log back in to apply changes.

3. Port Already in Use

Error: Bind for 0.0.0.0:80 failed: port is already allocated
Cause: Port conflict with another process.
Resolution:

- Identify the process using the port:

```
sudo netstat -tuln | grep 80
```

- Stop the conflicting service or use a different port in the Docker run command:

```
docker run -p 8080:80 ...
```

4. Image Pull Error

Error: Error response from daemon: pull access denied
Cause: Image not found or requires authentication.
Resolution:

- Verify the image name and tag.

- Log in to Docker Hub:

```
docker login
```

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5. Cannot Remove Container

Error: Error response from daemon: container is in use by a running process
Cause: Container is still running.
Resolution:

- Stop and remove the container:

```
docker stop <container_id>
```

```
docker rm <container_id>
```

---

6. Volume Not Mounting

Error: Error mounting volume: invalid mount path
Cause: Incorrect volume path.
Resolution:

- Ensure the source directory exists on the host.

- Use absolute paths for volume mounts:

```
docker run -v /host/path:/container/path …
```

---

7. Docker Build Context Too Large

Error: Error: file size limit exceeded
Cause: Large files or directories included in the build context.
Resolution:

- Use a .dockerignore file to exclude unnecessary files.
  Example .dockerignore:

```
node_modules/
```

```
.git/
```

---

8. Network Not Found

Error: Error: network <network_name> not found
Cause: Network doesn't exist.
Resolution:

- Create the network:

docker network create <network_name>

- Connect the container to the correct network.

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9. Container Exited Immediately

Error: Exited (0) or Exited (1)
Cause: Container process ends due to incorrect commands or script issues.
Resolution:

- Check container logs:

docker logs <container_id>

- Run the container interactively to debug:

docker run -it <image_name> /bin/bash

---

10. Disk Space Full

Error: no space left on device
Cause: Docker is using too much disk space.
Resolution:

- Clean up unused resources:

docker system prune -a

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11. Dockerfile Command Not Found

Error: unknown instruction: <command>
Cause: Typo or invalid Dockerfile command.
Resolution:

- Ensure proper syntax and valid commands in the Dockerfile.

- Reference the Dockerfile documentation.

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12. Image Build Fails

Error: Error response from daemon: failed to build image
Cause: Incorrect Dockerfile configuration.
Resolution:

- Check Dockerfile for syntax or command errors.

- Run step-by-step build with:

`docker build --progress=plain .`

---

13. Container Name Already In Use

Error: Conflict: The container name <name> is already in use
Cause: Duplicate container name.
Resolution:

- Remove the conflicting container or use a unique name:

`docker rm <container_name>`

---

14. High CPU/Memory Usage

Cause: Resource-intensive containers.
Resolution:

- Limit resources in docker run:

`docker run --memory=512m --cpus=1 ...`

---

15. DNS Issues in Containers

Error: Temporary failure in name resolution
Cause: Network or DNS configuration issue.
Resolution:

- Set DNS servers explicitly:

`docker run --dns=8.8.8.8 ...`

---

16. Permission Denied on Files

Error: Permission denied
Cause: File permissions mismatch.

Resolution:

- Ensure correct permissions on host files.

- Use chown in the container if necessary.

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17. Docker Compose Not Found

Error: docker-compose: command not found
Cause: Docker Compose not installed.
Resolution:

- Install Docker Compose:

sudo apt install docker-compose

---

18. Cannot Push to Private Registry

Error: Error response from daemon: denied: requested access
Cause: Authentication issue.
Resolution:

- Log in to the registry:

docker login <registry_url>

---

19. Container Hangs

Cause: Deadlocks or resource constraints.
Resolution:

- Restart the container:

docker restart <container_id>

---

20. Outdated Docker Version

Error: Features not supported.
Resolution:

- Update Docker to the latest version:

sudo apt update && sudo apt install docker-ce

21. Container Restart Loop

Error: Exited (137)
Cause: Resource limits or errors in the entry point script.
Resolution:

- Check the logs to identify the issue:

docker logs <container_id>

- Limit resources or fix entry point errors.

---

22. Image Pull Rate Limit

Error: Too many requests: rate limit exceeded
Cause: Docker Hub rate-limiting for unauthenticated users.
Resolution:

- Log in to Docker Hub:

docker login

- Use a mirror or private registry.

---

23. Network Timeout

Error: Failed to connect to network: timeout
Cause: Slow or interrupted network connection.
Resolution:

- Retry the operation or check network stability.

- Increase timeout with the --timeout flag.

---

24. Cannot Delete Volume

Error: Volume is in use
Cause: A container is still using the volume.
Resolution:

- Remove the associated container before deleting the volume:

docker rm -v <container_id>

---

25. Docker Compose Fails to Start Services

Error: Service <service_name> failed to start
Cause: Incorrect docker-compose.yml syntax or missing dependencies.
Resolution:

- Validate the YAML file:

`docker-compose config`

- Check dependency order in depends_on.

---

26. Proxy Issues

Error: Could not resolve proxy: <proxy_name>
Cause: Incorrect or missing proxy configuration.
Resolution:

- Set proxy environment variables:

`export HTTP_PROXY=http://<proxy>:<port>`

`export HTTPS_PROXY=http://<proxy>:<port>`

---

27. Docker Registry Authentication Failed

Error: unauthorized: authentication required
Cause: Incorrect login credentials.
Resolution:

- Retry logging in:

`docker login`

---

28. Container Timezone Mismatch

Error: Application uses the wrong timezone.
Cause: Container timezone not synchronized with the host.
Resolution:

- Mount the host timezone:

`docker run -v /etc/localtime:/etc/localtime:ro ...`

---

29. Cannot Attach to Container

Error: Cannot connect: container not running
Cause: The container is stopped.
Resolution:

- Start the container:

docker start <container_id>

- Use interactive mode for debugging:

docker exec -it <container_id> /bin/bash

---

30. Container IP Not Accessible

Cause: Networking mode or firewall issues.
Resolution:

- Use docker inspect to find the container's IP:

docker inspect <container_id>

- Ensure correct networking mode (bridge, host, etc.).

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31. Dockerfile COPY Command Fails

Error: COPY failed: no source files were specified
Cause: Source file or directory missing.
Resolution:

- Verify file paths in the Dockerfile.

- Ensure files are within the build context.

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32. Docker Swarm Initialization Fails

Error: could not initialize swarm: timeout
Cause: Firewall or network issues.
Resolution:

- Open required ports for Docker Swarm:

sudo ufw allow 2377/tcp

sudo ufw allow 7946/tcp

---

33. Missing Default Gateway

Error: no default gateway
Cause: Network misconfiguration.
Resolution:

- Restart the Docker service:

`sudo systemctl restart docker`

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34. Logs Not Available

Error: log files are missing or inaccessible
Cause: Logging driver misconfiguration.
Resolution:

- Check the logging driver:

`docker info | grep Logging`

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35. High Number of Unused Images

Cause: Accumulated unused images.
Resolution:

- Remove unused images:

`docker image prune -a`

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36. Container Cannot Access Host

Cause: Misconfigured network.
Resolution:

- Use the host networking mode:

`docker run --network host …`

---

37. Docker Service Does Not Start at Boot

Cause: Docker service is not enabled.
Resolution:

- Enable Docker service:

`sudo systemctl enable docker`

---

38. Cannot Access Container Logs

Error: Error opening log file
Cause: Log file permission issues.
Resolution:

- Ensure the correct permissions for log files.

- Restart the container if needed.

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39. Resource Contention in Docker Swarm

Error: Task failed due to resource limits
Resolution:

- Scale down services or add more resources to the nodes.

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40. Container Uses Too Much Storage

Cause: Persistent data accumulation.
Resolution:

- Clean up volumes and unused data:

docker volume prune

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41. Docker Desktop Issues

Error: Docker Desktop hangs or crashes
Resolution:

- Reset Docker Desktop from the settings.

- Reinstall Docker Desktop.

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42. Failed to Start Service in Overlay Network

Cause: Overlay network misconfiguration.
Resolution:

- Verify the overlay network and swarm node connectivity.

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43. Cannot Share Volumes Between Containers

Cause: Volume name mismatch.

Resolution:

- Use named volumes:

<mark>docker volume create <volume_name></mark>

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44. Docker Compose Scale Fails

Error: service could not scale
Resolution:

- Ensure sufficient resources on the host.

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45. Incorrect Entrypoint Script

Error: exec format error
Cause: Invalid script or permissions.
Resolution:

- Fix permissions:

<mark>chmod +x <script_name></mark>

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46. Broken Pipe Errors

Cause: Network or process interruptions.
Resolution:

- Retry or use resilient network configurations.

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47. No Space Left in OverlayFS

Cause: Storage layer issues.
Resolution:

- Prune Docker resources.

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48. Container Cannot Access API

Cause: Network restrictions or misconfigured API endpoint.
Resolution:

- Verify API endpoint and network settings.

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49. Service Unavailable in Docker Swarm

Error: 503 Service Unavailable
Resolution:

- Check the load balancer configuration.

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50. Docker Update Fails

Error: package conflicts or version issues
Resolution:

- Clean up existing Docker installation before upgrading:

`sudo apt remove docker docker-engine docker.io`