

50 Docker Errors & How to Fix Them



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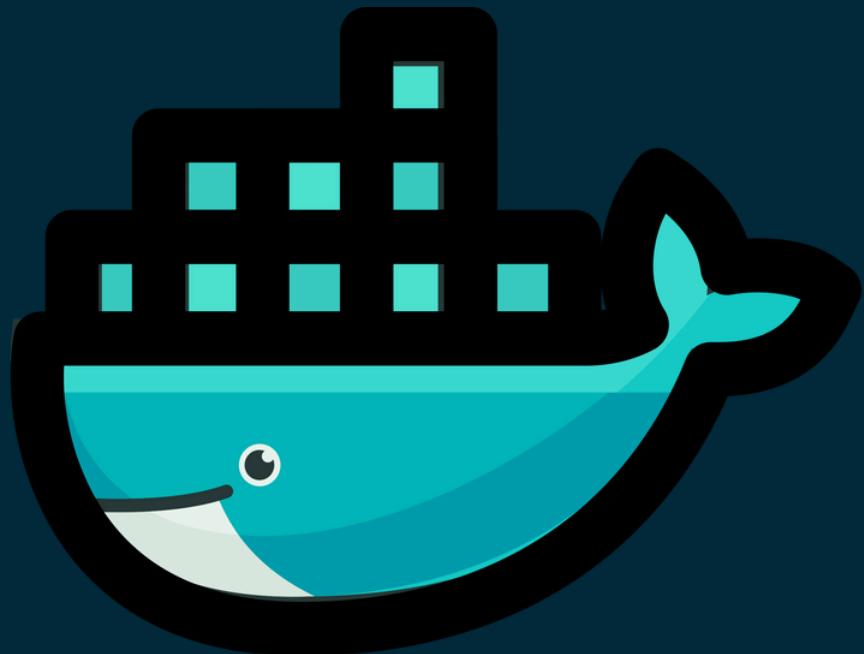




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A Practical Guide for DevOps Engineers and Developers

Running into Docker issues? This guide provides 50 common Docker errors, their causes, and step-by-step resolutions to help you debug and stay productive.



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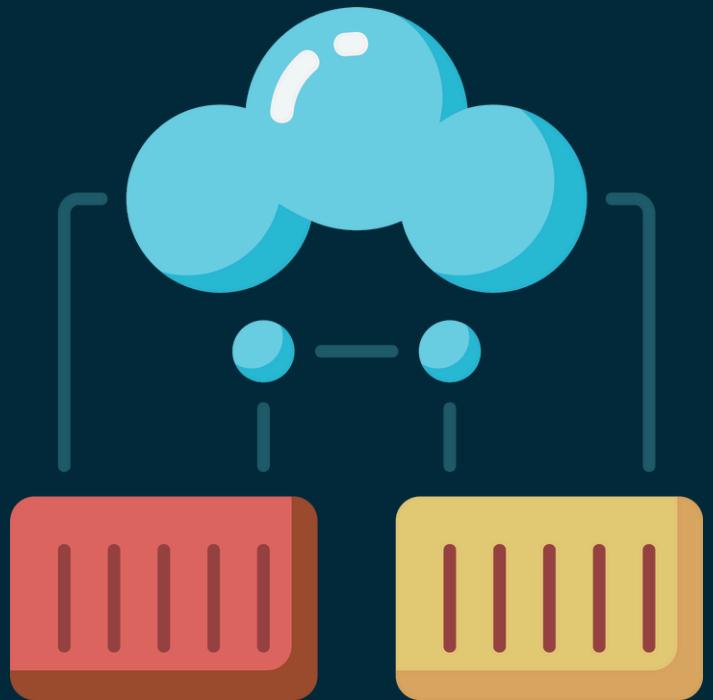
1. Docker Daemon Not Running

Error: Cannot connect to the Docker daemon. Is the Docker daemon running on this host?

Cause: Docker daemon is not running.

Resolution:

```
sudo systemctl start docker  
sudo systemctl status docker
```



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2. Docker Permission Denied

Error: Permission denied while trying to connect to the Docker daemon socket

Cause: User is not in the docker group.

Resolution:

```
sudo usermod -aG docker $USER  
# Then log out and log back in
```



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3. Port Already in Use

Error: Bind for 0.0.0.0:80 failed: port is already allocated

Cause: The port is already being used by another service.

Resolution:

```
sudo netstat -tuln | grep 80  
# Stop the service or change the port:  
docker run -p 8080:80 myimage
```



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4. Image Not Found

Error: Error response from daemon: pull access denied for myimage, repository does not exist or may require 'docker login'

Cause: The image doesn't exist locally or on Docker Hub, or authentication is required.

Resolution:

- Check if the image name and tag are correct.
- If private, log in to Docker Hub:

`docker login`

- Pull the correct image:

`docker pull myimage:tag`



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5. Container Exited Immediately

Error: Container exits right after starting

Cause: The container's main process completes instantly.

Resolution:

- Use interactive mode to inspect:

```
docker run -it myimage /bin/bash
```

- Check Dockerfile for CMD or ENTRYPOINT instructions.



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6. Volume Mount Not Working

Error: Mounted volume is empty or missing expected files

Cause: Host path does not exist or is incorrect

Resolution:

- Ensure the host directory exists before mounting.
- Example:

```
docker run -v /host/data:/container/data myimage
```



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7. Docker Build Fails Due to Cache

Error: Changes not applied during docker build

Cause: Docker is using cached layers

Resolution:

- Disable cache during build:

```
docker build --no-cache -t myimage .
```



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8. "exec format error"

Error: Standard_init_linux.go:211: exec user process caused "exec format error"

Cause: Architecture mismatch (e.g., ARM image on x86 system)

Resolution:

- Use the correct image for your system architecture.
- Check using:

`uname -m`



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9. Network Bridge Conflicts

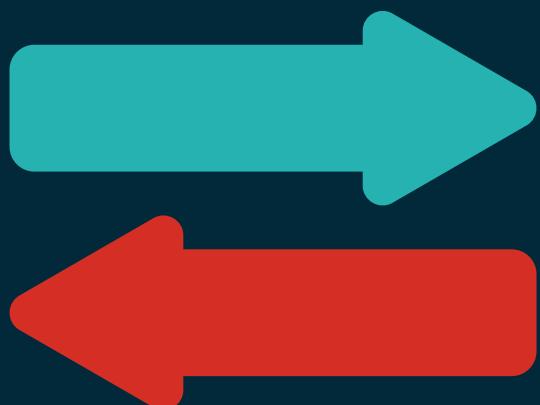
Error: Network conflicts with existing bridge interface

Cause: Docker's default bridge overlaps with host network

Resolution:

- Define a custom bridge with a specific subnet:

```
docker network create --subnet=192.168.100.0/24 customnet
```



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10. Can't Remove Image (Image in Use)

Error: Conflict: unable to delete, image is being used by running container

Cause: Container is using the image

Resolution:

- Stop and remove the container first:

```
docker ps -a  
docker rm <container_id>  
docker rmi <image_id>
```



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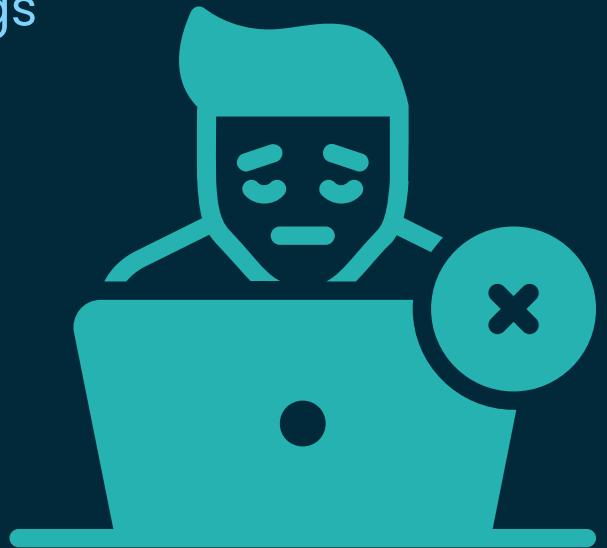
11. Cannot Connect to Container Port

Error: Application unreachable via exposed port

Cause: Port not published correctly or firewall blocks it

Resolution:

```
docker run -p 8080:80 myimage  
# Ensure port 8080 is open in firewall settings
```



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12. Cannot Remove Volume

Error: Volume is in use and cannot be removed

Cause: Volume is still attached to a container

Resolution:

```
docker ps -a  
docker rm <container_using_volume>  
docker volume rm <volume_name>
```



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13. Container Restart Loop

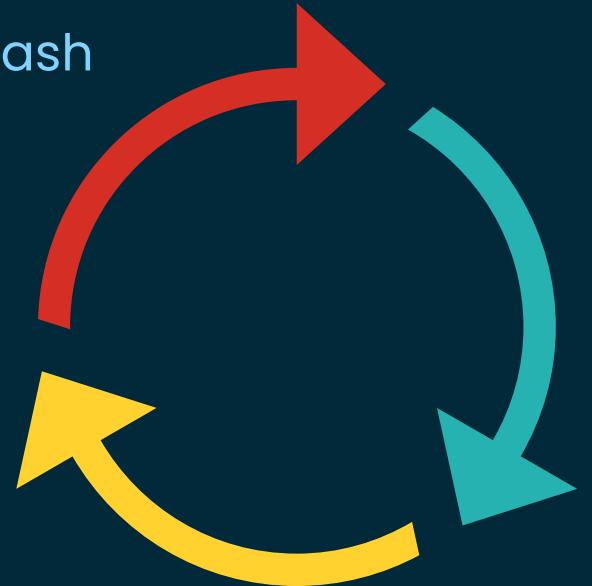
Error: Container continuously restarts

Cause: Application inside container crashes

Resolution:

`docker logs <container_id>`

Fix the app or configuration causing the crash



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14. Dockerfile COPY Fails

Error: COPY failed: file not found in build context

Cause: File or directory path is incorrect

Resolution:

- Ensure files exist in the same directory as the Dockerfile
- Use relative paths only



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15. "No Space Left on Device"

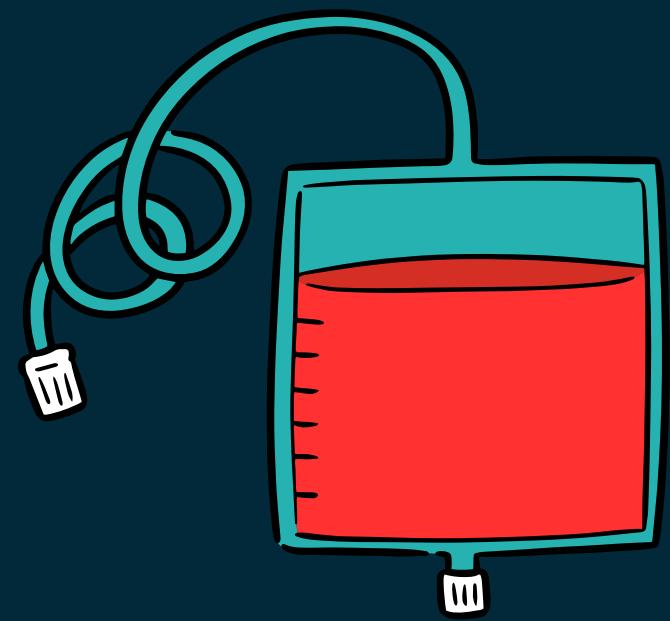
Error: No space left on device

Cause: Docker consumes too much disk space

Resolution:

docker system prune -a

Use with caution – this removes unused containers/images



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16. Time Issues

Error: Timestamps in logs are incorrect

Cause: Container time out of sync with host

Resolution:

- Ensure host machine has NTP or time sync
- Use --privileged or mount /etc/localtime if needed



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17. Cannot Pull Private Image

Error: access denied when pulling image

Cause: Not authenticated for private registry

Resolution:

```
docker login <registry_url>
docker pull <registry_url>/<image>
```



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18. Entrypoint Override Not Working

Error: Entry point script not executing as expected

Cause: CMD used instead of ENTRYPOINT or conflict between them

Resolution:

- Check Dockerfile for correct ENTRYPOINT syntax
- Use override like:

```
docker run --entrypoint /bin/bash myimage
```



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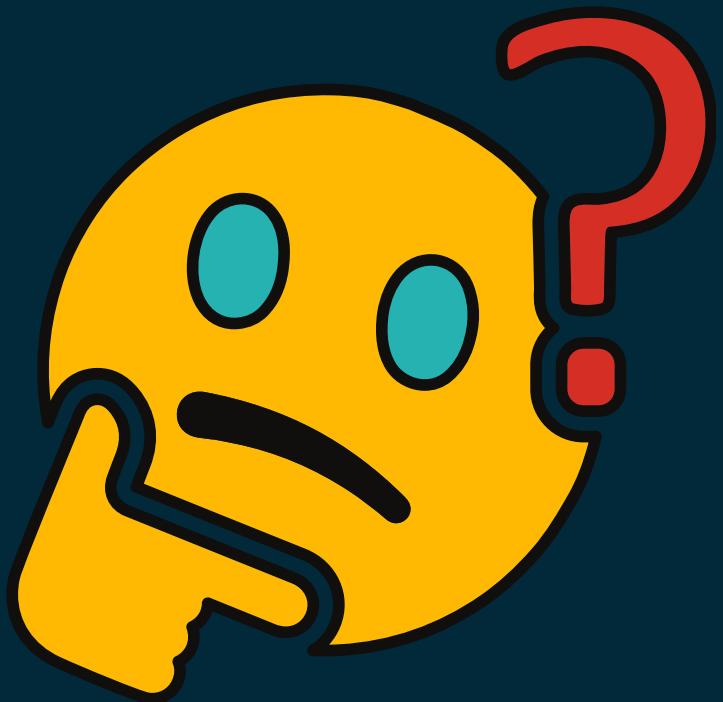
19. Docker Context Confusion

Error: docker: error during connect when working with multiple Docker contexts

Cause: Wrong context selected (e.g., remote context)

Resolution:

docker context ls
docker context use default



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20. File Permission Issues in Container

Error: App fails due to unreadable files

Cause: Incorrect file permissions or UID mismatches

Resolution:

- Use correct permissions:

chmod -R 755 /app/data

- Match container user to host UID with --user flag



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21. Container Not Starting on Boot

Error: Container doesn't auto-start after reboot

Cause: Restart policy not set

Resolution:

`docker run --restart unless-stopped ...`



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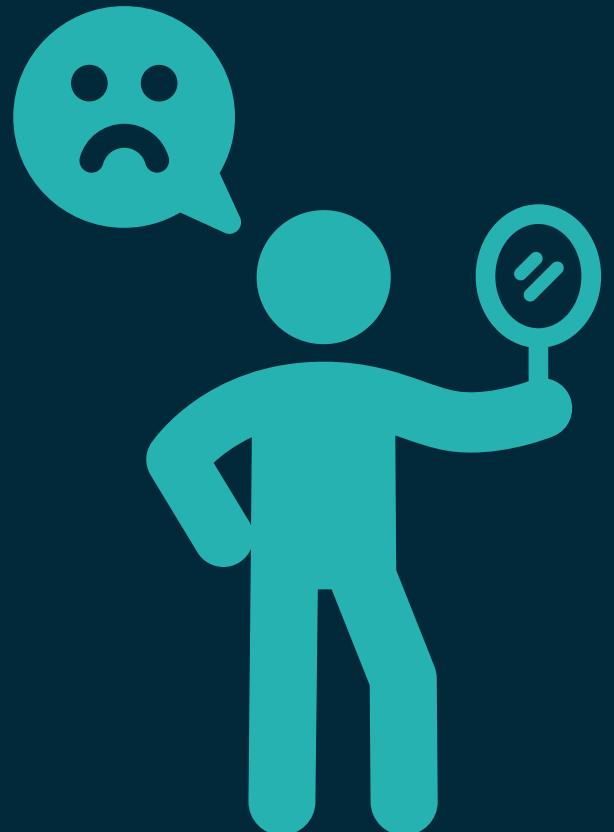
22. Cannot Stop a Container

Error: docker stop hangs or fails

Cause: Unresponsive or zombie process

Resolution:

`docker kill <container_id>`



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23. "OCI Runtime Error"

Error: oci runtime error: exec failed

Cause: Entry command doesn't exist in the image

Resolution:

- Check image contents:

```
docker run -it myimage /bin/sh
```



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24. Network Mode Issues

Error: Container can't reach internet or host

Cause: Incorrect network mode or DNS config

Resolution:

```
docker run --network host ...  
# or use custom bridge network
```



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25. Container Can't Resolve DNS

Error: DNS lookup fails inside container

Cause: DNS config issues or host firewall

Resolution:

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



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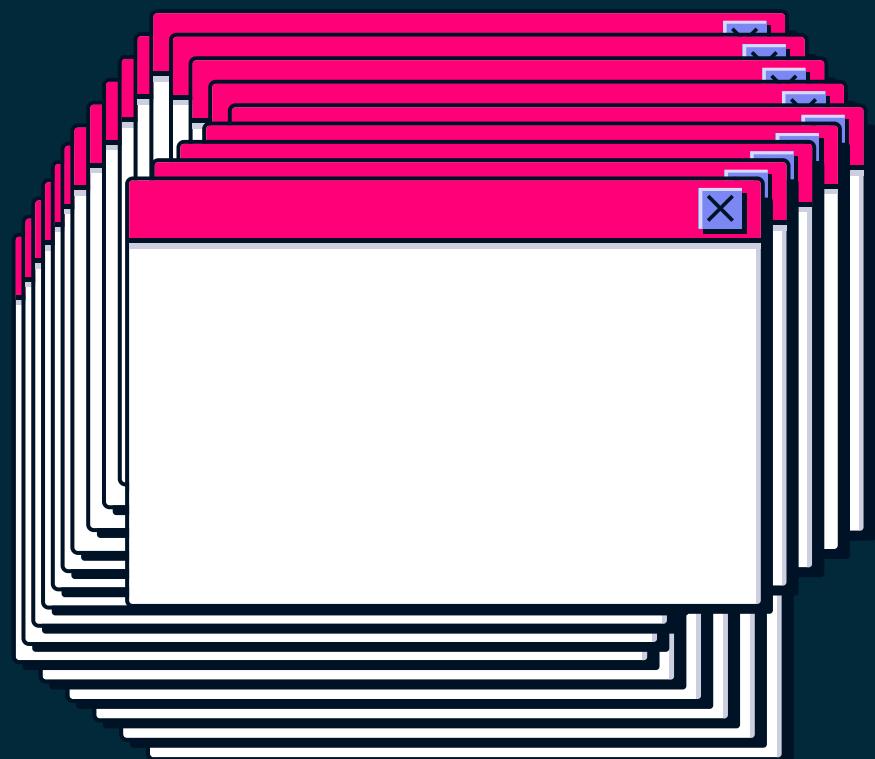
26. Too Many Containers Running

Error: System becomes slow or unresponsive

Cause: Dozens of unused containers running

Resolution:

```
docker ps -a  
docker rm $(docker ps -aq)
```



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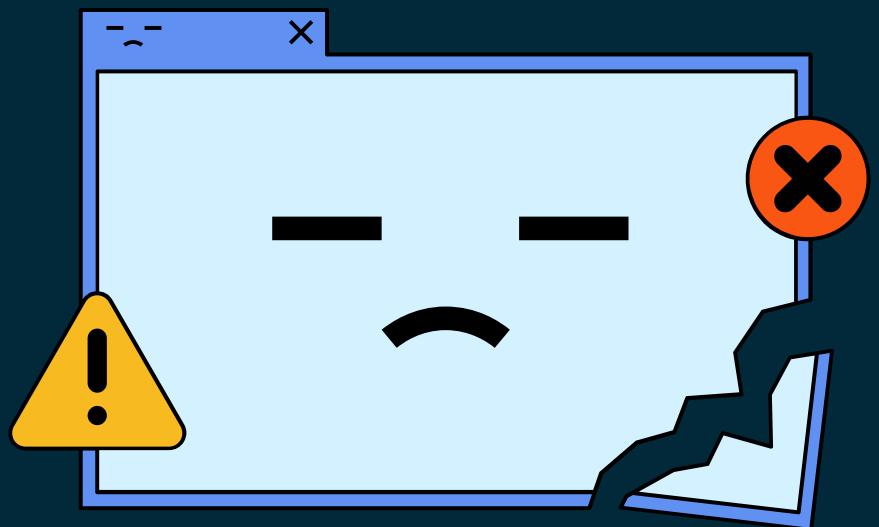
27. Docker Image Too Large

Error: Build results in 1GB+ image

Cause: Too many layers or unoptimized base image

Resolution:

- Use multi-stage builds
- Use lighter base images like alpine



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28. "Container Name Already in Use"

Error: The container name "/myapp" is already in use

Cause: A container with the same name exists

Resolution:

```
docker ps -a  
docker rm <old_container>
```



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29. Log File Too Large

Error: /var/lib/docker/containers/.../json.log grows indefinitely

Cause: No log rotation

Resolution:

- Add log options to limit size:

```
docker run --log-opt max-size=10m --log-opt max-file=3 ...
```



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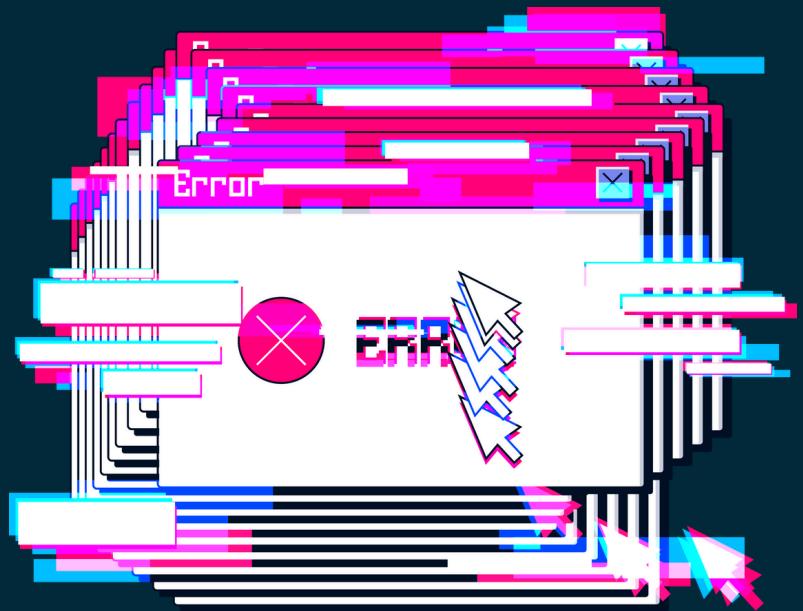
30. Stale Container Image

Error: Using outdated image unknowingly

Cause: Local image hasn't been updated

Resolution:

```
docker pull myimage:latest
```



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31. Docker Desktop Not Starting

Error: Docker Desktop fails to start or freezes

Cause: WSL2 or virtualization not enabled

Resolution:

- Enable virtualization in BIOS
- For Windows:

wsl --set-default-version 2

- Restart Docker Desktop



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32. Access Docker Hub (Rate Limits)

Error: toomanyrequests: You have reached your pull rate limit

Cause: Docker Hub rate-limits anonymous pulls

Resolution:

docker login

Use a Docker Hub account to raise the limit



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33. Docker Swarm Node Not Joining

Error: Error response from daemon: This node is already part of a swarm

Cause: Node is already initialized or joined another swarm

Resolution:

```
docker swarm leave --force  
docker swarm join ...
```



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34. Docker Compose Version

Error: Unsupported config option in docker-compose.yml

Cause: YAML syntax incompatible with Docker Compose version

Resolution:

- Upgrade Docker Compose



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35. Cannot Connect Container to Multiple Networks

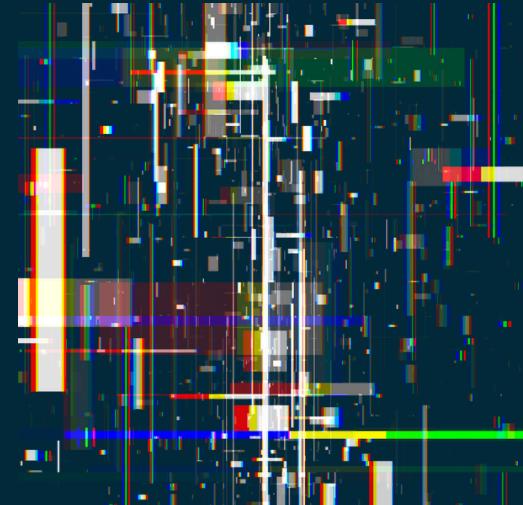
Error: container is already connected to network

Cause: Invalid or redundant network attach

Resolution:

```
docker network disconnect network1 container
```

```
docker network connect network2 container
```



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36. Secrets Not Available

Error: App can't read Docker secrets

Cause: Secrets not correctly mounted or accessed

Resolution:

- For Swarm:

```
docker secret create mysecret file.txt  
docker service create --secret mysecret myimage
```



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37. Docker Exec Fails in Paused Container

Error: Error response from daemon: Container is paused

Cause: Trying to exec into a paused container

Resolution:

`docker unpause <container_id>`



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38. Container Not Updating Latest Code

Error: Changes in source code not reflected

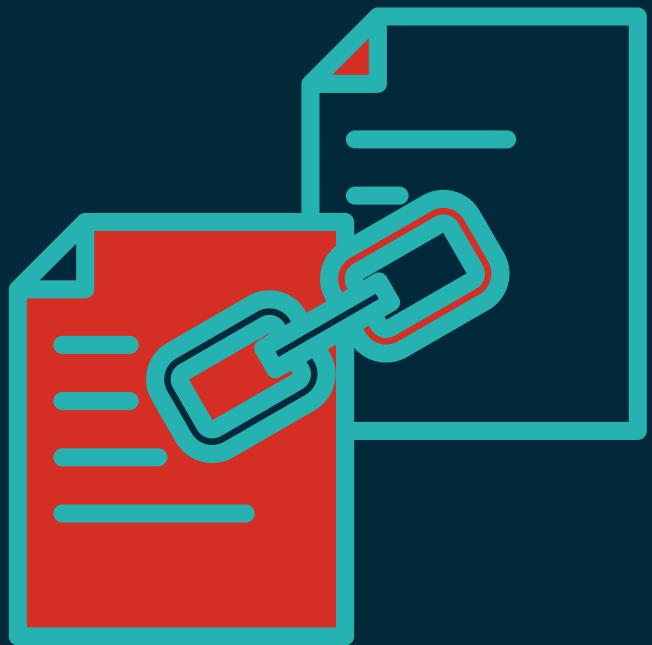
Cause: Cached image used, or volume not mounted

Resolution:

```
docker build --no-cache -t myimage .
```

Or use live volume mounting:

```
docker run -v $(pwd):/app myimage
```



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39. "Invalid Reference Format"

Error: invalid reference format

Cause: Improper syntax in image/tag name

Resolution:

- Ensure no spaces and tag format is correct:

```
docker run myimage:latest
```



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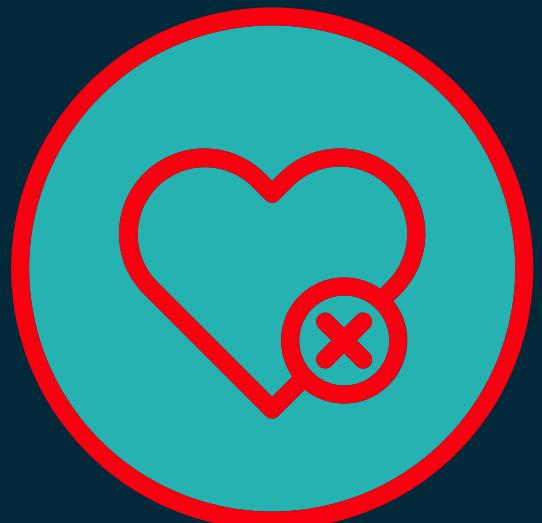
40. Health Check Failing

Error: Container marked unhealthy

Cause: Healthcheck returns non-zero code

Resolution:

- Check your HEALTHCHECK command in Dockerfile
- Use simpler checks or increase interval/start-period



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41. Cannot Push to Private Registry

Error: denied: requested access to the resource is denied

Cause: Not logged into target registry

Resolution:

```
docker login myregistry.com
```

```
docker tag myimage myregistry.com/myproject/myimage
```

```
docker push myregistry.com/myproject/myimage
```



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42. Swarm Service Not Scaling

Error: Only one instance runs despite scale command

Cause: Port conflicts or resource limits

Resolution:

- Remove fixed ports or switch to mode: host only when needed

docker service update --replicas 3 myservice



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43. IP Tables Rules Blocking Docker

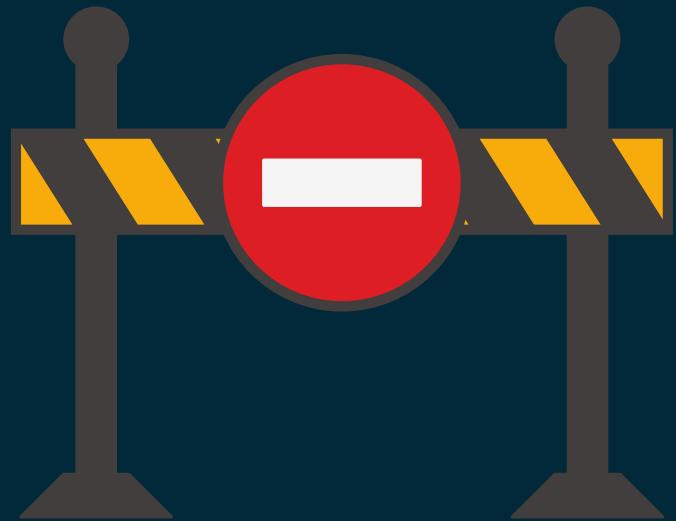
Error: Networking issues inside containers

Cause: Host firewall interfering with Docker networking

Resolution:

sudo iptables -L

Allow Docker bridge traffic or disable conflicting rules



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44. Slow Docker Builds

Error: Image build takes too long

Cause: Unoptimized layers or heavy base images

Resolution:

- Use `.dockerignore` to skip unnecessary files
- Optimize Dockerfile by reordering static layers first



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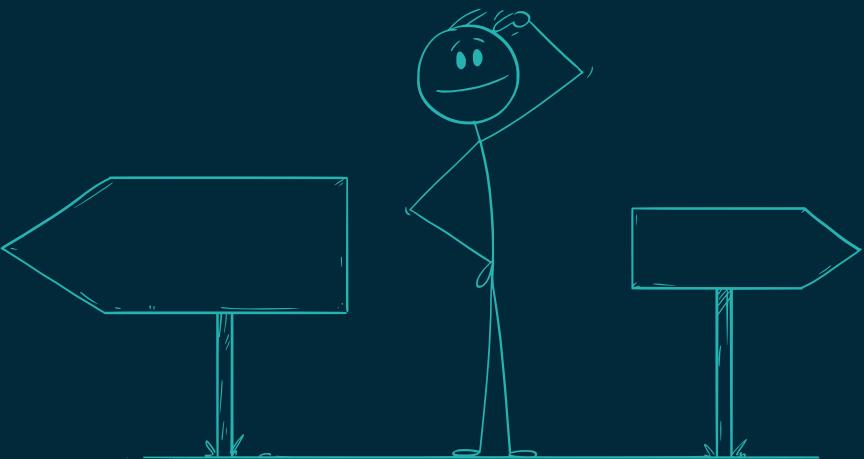
45. Docker Context Lost After Reboot

Error: Context or config is missing after restart

Cause: Config not persisted correctly

Resolution:

docker context ls
docker context use default



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46. "Mounts denied" on macOS

Error: Mounts denied: path is not shared from OS X and is not known to Docker

Cause: Docker Desktop doesn't have access to the folder

Resolution:

- Add the folder in Docker Desktop → Settings → Resources → File Sharing



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47. Cannot Bind Mount to File

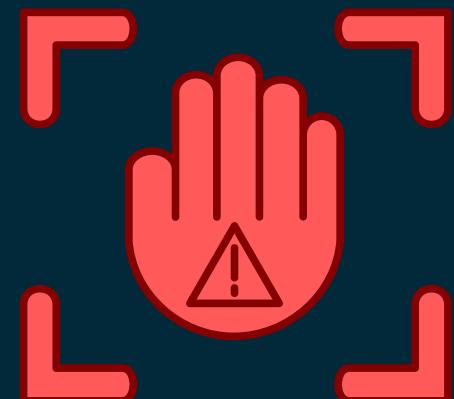
Error: Volume mount overwrites existing file

Cause: Mounting a directory over a file path

Resolution:

- Mount directly to file:

```
-v $(pwd)/config.yaml:/app/config.yaml
```



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48. Container Using Too Much CPU

Error: High CPU usage from a specific container

Cause: Unrestricted resource usage

Resolution:

```
docker run --cpus=".5" myimage
```



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49. Docker Socket Exposure Risk

Error: -v /var/run/docker.sock:/var/run/docker.sock creates security risk

Cause: Container gains control over host Docker

Resolution:

- Avoid mounting Docker socket unless absolutely necessary
- Use tools like [Docker Socket Proxy](#)



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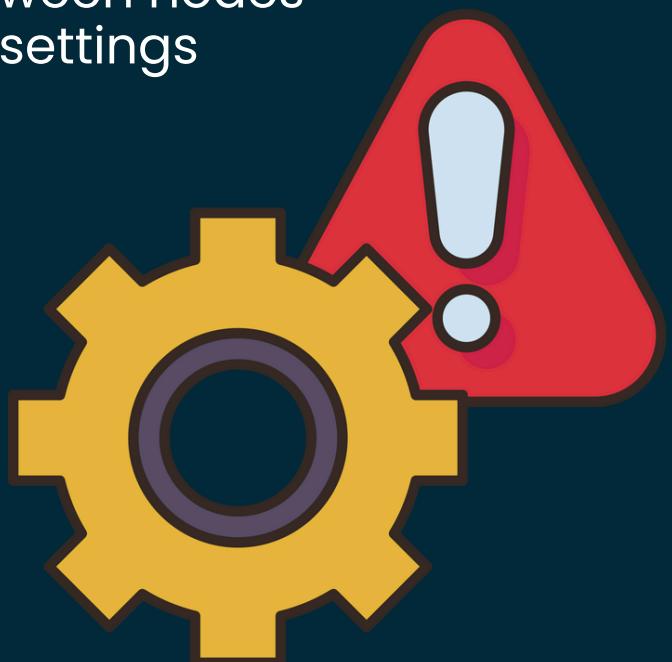
50. Docker Swarm Overlay Network Fails

Error: Services on different nodes can't communicate

Cause: Improper ingress/overlay network setup

Resolution:

- Ensure ports 2377, 7946, 4789 are open between nodes
- Use docker network ls and inspect overlay settings



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