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# Introduction to Container Debugging

Mastering Container Debugging for Efficient Development.

## DEFINITION

> Container debugging involves identifying and fixing issues within Docker containers. It ensures applications run smoothly in isolated environments.

## KEY CONCEPTS

### Logs Inspection

Checking container logs helps identify errors and understand application behavior.

### Interactive Shell

Using an interactive shell allows you to explore the container's file system and processes.

### Network Troubleshooting

Debugging network issues involves checking container connectivity and firewall settings.

### Resource Monitoring

Monitoring CPU and memory usage helps identify performance bottlenecks in containers.

### Container Health Checks

Implementing health checks ensures that containers are running as expected and can restart if they fail.

## EXAMPLES

→ Using 'docker logs <container_id>' to view logs.

→ Running 'docker exec -it <container_id> /bin/bash' for an interactive shell.

→ Executing 'docker network inspect <network_name>' to troubleshoot connectivity.

## MEMORY TIPS

★ Remember 'LIS' for Logs, Interactive Shell, and Network troubleshooting.

★ Think of 'MHC' for Monitoring, Health checks, and Container performance.

★ Use 'RIN' for Resource monitoring, Interactive shell, and Network checks.

## COMMON MISTAKES

✗ Neglecting to check logs before troubleshooting.

✗ Forgetting to use the correct container ID.

✗ Overlooking resource limits leading to performance issues.

## QUICK RECAP

Container debugging is crucial for maintaining application performance in Docker. Focus on logs, interactive shells, and resource monitoring to effectively troubleshoot issues.