



Common DevOps Issues

Real-World Meaning and Practical Fixes

by

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High CPU Usage on EC2

Problem Overview

Production EC2 instance CPU usage suddenly spikes to 100%, leading to application slowness or downtime.

Recommended Actions

- Monitor CPU utilization in CloudWatch
- Inspect running processes on the instance
- Restart only the affected services
- Scale the instance or enable Auto Scaling
- Apply long-term performance optimizations

Application Running but Not Accessible

Issue Description

The application works inside the EC2 instance but is not accessible through the browser.

What to Verify

- Security Group inbound rules (80 / 443 / 8080)
- Network ACL rules
- Load Balancer health check status
- Web server status (nginx / httpd)
- Application and server logs

Jenkins Pipeline Failure

Issue Description

Jenkins pipeline fails during the build stage.

Troubleshooting Steps

- Review Jenkins console output
- Validate Git credentials
- Ensure the agent or node is online
- Clean the workspace and rebuild
- Verify build tool dependencies

Docker Container Running but Not Accessible

Issue Description

Docker container is running, but the application is not reachable externally.

Troubleshooting Steps

- Verify container port mapping
- Review container logs
- Ensure the application binds to all interfaces
- In Kubernetes, validate the Service and endpoints

Kubernetes CrashLoopBackOff

Issue Description

Pod repeatedly crashes and restarts, entering a CrashLoopBackOff state.

Fix Approach

- Inspect pod events and logs
- Validate image tag and environment variables
- Review readiness and liveness probes
- Fix configuration and redeploy

Kubernetes Pod Stuck in Pending

Issue Description

Pod remains Pending and is never scheduled on a node.

Common Root Causes

- Insufficient node resources
- NodeSelector or taints mismatch
- PersistentVolume or StorageClass issues

Terraform Showing Unexpected Changes

Issue Description

Terraform displays unexpected changes even when no code modifications have been made.

Recommended Fix

- Refresh Terraform state
- Use a remote backend with state locking
- Avoid manual infrastructure changes

Blue-Green Deployment

Deployment Strategy

Two environments are maintained:

- **Blue:** Current live version
- **Green:** New version

Traffic is switched only after successful testing, allowing instant rollback if needed.

RDS Storage Full

Issue Description

RDS instance storage reaches full capacity, risking downtime.

Fix

- Enable storage autoscaling
- Take a snapshot
- Increase allocated storage
- Configure CloudWatch alerts

S3 Access Denied

Issue Description

Access to S3 objects is denied due to permission issues.

Fix

- Review bucket policy
- Verify IAM role permissions
- Ensure required S3 actions are allowed
- Avoid public access unless necessary

DevOps is not about avoiding issues — it's about identifying, fixing, and learning from them.