Real-Time DevOps Issues and Solutions

Linux -Shell-Cron-Git-Httpd

1. Disk Space Exhaustion on Server

Issue

Application deployment fails and services stop responding. Error observed:
`No space left on device`

Root Cause

- Application log files growing continuously
- Log rotation not configured
- Old files not cleaned

Solution (Shell Script)

```
#!/bin/bash

LOG_DIR=/var/log/myapp

find "$LOG_DIR" -type f -name "*.log" -mtime +7 -delete
```

Cron Job

```
0 2 * * * /opt/scripts/cleanup_logs.sh
```

This job removes log files older than seven days on a daily basis.

Contact : +91 9966107782
info@sdlctechacademy.com

2. Application Not Starting After Server Reboot

Issue

After a server restart, the application is not running and requires manual intervention.

Root Cause

- Service not enabled at startup
- No health check mechanism

Solution (Shell Script)

```
#!/bin/bash

APP_NAME=myapp

if ! pgrep -f "$APP_NAME" > /dev/null; then

  systemctl start myapp

fi
```

Cron Job

```
*/5 * * * * /opt/scripts/app_health_check.sh
```

This ensures the application is running and restarts it if required.

Contact : +91 9966107782
info@sdlctechacademy.com

3. High CPU Utilization

Issue

Monitoring alerts indicate CPU usage above acceptable limits.

Root Cause

- Long-running or stuck processes
- Application defects causing infinite loops

Solution

```
#!/bin/bash

CPU=$(top -bn1 | awk '/Cpu/ {print 100-$8}')

if (( $(echo "$CPU > 90" | bc -l) )); then

  echo "High CPU usage detected" | mail -s "CPU Alert" admin@company.com

fi
```

Cron Job

```
*/2 * * * * /opt/scripts/cpu_monitor.sh
```

4. Database Backups Not Executed

Issue

Required database backups are missing for several days.

Root Cause

- Manual backup process
- Dependency on human execution

Solution

#!/bin/bash

DATE=$(date +%F)

mysqldump -u root -pPassword dbname > /backup/db_${DATE}.sql

Cron Job

0 1 * * * /opt/scripts/db_backup.sh

This schedules automated daily database backups.

5. Old Files Consuming Storage

Issue

Storage usage continuously increases due to unused files.

Root Cause

- Old reports and artifacts not removed

Solution

#!/bin/bash

find /data/reports -type f -mtime +30 -exec rm -f {} \;

Cron Job

0 3 * * 0 /opt/scripts/cleanup_reports.sh

This performs weekly cleanup of files older than thirty days.

Contact : +91 9966107782
info@sdlctechacademy.com

6. Cron Job Executing Without Output or Logs

Issue

Cron jobs fail silently without any visible errors.

Root Cause

- Limited PATH variable in cron environment
- No logging configured

Solution

#!/bin/bash

source /etc/profile

/path/to/script.sh >> /var/log/cron_script.log 2>&1

Ensure absolute paths and logging are always used in cron jobs.

Contact : +91 9966107782
info@sdlctechacademy.com

7. Server Reachable but Application Unavailable

Issue

Server responds to ping but application URL is not accessible.

Root Cause

- Application service stopped
- Required port not listening

Solution

```
#!/bin/bash

PORT=8080

if ! netstat -tuln | grep -q "$PORT"; then

  systemctl restart myapp

fi
```

8. Jenkins Server Disk Usage Increasing

Issue

Jenkins jobs fail due to insufficient disk space.

Root Cause

- Old workspaces and build artifacts not cleaned

Solution

```
#!/bin/bash

find /var/lib/jenkins/workspace -type d -mtime +10 -exec rm -rf {} \;
```

9. Application Errors Not Detected Early

Issue

Errors are identified only after users report issues.

Solution

```
#!/bin/bash

grep -i "error" /var/log/app.log | tail -10
```

This can be extended to send alerts through email or messaging systems.

10. Git SSL / TLS Issue After OS Update (Azure DevOps / ADO)

Issue

After upgrading the operating system (for example, Ubuntu), Git operations such as `git clone`, `git fetch`, or `git push` fail when connecting to Azure DevOps repositories.

Typical error:
`SSL routines:tls_process_server_certificate:certificate verify failed`

Root Cause

- OS upgrade updates OpenSSL and Git versions
- Older TLS or SSL protocols disabled by default
- Azure DevOps requires modern TLS standards
- System CA certificates not updated

Solution

sudo apt update

sudo apt install --reinstall ca-certificates

sudo update-ca-certificates

Verify Git SSL backend:

git config --system --get http.sslcainfo

git --version

Temporary workaround (not recommended for production):

git config --global http.sslVerify false

Recommended approach is to upgrade Git:

sudo add-apt-repository ppa:git-core/ppa

sudo apt update

sudo apt install git

11. Git Authentication Failure After Password Deprecation

Issue

Git push fails with authentication errors when using username and password.

Root Cause

- Azure DevOps and Git providers disabled password-based authentication
- Personal Access Token (PAT) is required

Solution

Use PAT instead of password when prompted.

To store credentials securely:

git config --global credential.helper store

12 .Environment Variable Issue – Application Fails After Login or Reboot

Issue

Application works when started manually but fails when started via service, cron job, or after server reboot.

Root Cause

Required environment variables (PATH, JAVA_HOME, NODE_ENV, DB credentials) are not available to non-interactive shells or system services.

Solution

Define environment variables at system or service level:

```
export JAVA_HOME=/usr/lib/jvm/java-17
```

```
export PATH=$PATH:$JAVA_HOME/bin
```

For systemd services, add variables in the service file:

```
Environment="JAVA_HOME=/usr/lib/jvm/java-17"
```

Always avoid relying on `.bashrc` for applications and cron jobs.

Contact : +91 9966107782
info@sdlctechacademy.com

13. Apache HTTPD Service Not Accessible

Issue

Apache service is running, but the website is not accessible from the browser.

Root Cause

- Firewall blocking port 80 or 443
- Apache listening on wrong interface
- SELinux or permissions issue

Solution

Check service status:

systemctl status apache2

Verify listening ports:

netstat -tuln | grep -E "80|443"

Allow firewall ports:

sudo ufw allow 80

sudo ufw allow 443

sudo ufw reload

14. Apache Not Starting After Configuration Change

Issue

Apache fails to start after modifying configuration files.

Root Cause

- Syntax error in configuration
- Invalid virtual host entry

Solution

apachectl configtest

If errors are found, fix the configuration and restart:

systemctl restart apache2

15. Git Repository Ownership Issue on Linux

Issue

Git commands fail with ownership or permission warnings.

Typical error:

```
detected dubious ownership in repository
```

Root Cause

- Repository cloned or copied using different user
- New Git security checks introduced in recent versions

Solution

Mark directory as safe:

git config --global --add safe.directory /path/to/repo

16. HTTPD Logs Growing Too Fast

Issue

Apache access and error logs consume large disk space.

Root Cause

- High traffic
- Log rotation not configured

Solution

Verify logrotate configuration:

cat /etc/logrotate.d/apache2

Force log rotation test:

logrotate -f /etc/logrotate.d/apache2

17. Linux User Management Issue – Application Fails Due to Permission Errors

Issue

Application or deployment fails with permission denied errors when accessing files or directories.

Root Cause

- Application running under a different Linux user
- Incorrect ownership or permissions on directories
- User not added to required group

Solution

Check file ownership:

ls -ld /opt/myapp

Assign correct ownership:

chown -R appuser:appgroup /opt/myapp

Add user to required group:

usermod -aG docker appuser

Verify user groups:

groups appuser

18. Linux User Login Disabled After Password Expiry

Issue

User unable to log in to server even with correct password.

Root Cause

- Password expired due to security policy
- Account locked after multiple failed attempts

Solution

Check user status:

chage -l username

Unlock user account:

passwd -u username

Reset password expiry:

chage -M 90 username

19. Git User Identity Not Set Causing Commit Failures

Issue

Git commit fails with message asking for user name and email configuration.

Root Cause

- Git user identity not configured at system or global level

Solution

Configure Git user identity:

git config --global user.name "DevOps Engineer"

git config --global user.email "devops@company.com"

Verify configuration:

git config --list

20. Git Access Denied for Repository

Issue

User unable to clone or push to Git repository.

Root Cause

- User not granted access in Azure DevOps project
- Incorrect repository permissions

Solution

- Verify user is added to the project
- Assign appropriate repository permissions (Read, Contribute)
- Validate Personal Access Token scope

21. Apache HTTPD Routing Issue – Wrong Application Served

Issue

Wrong application or default Apache page is displayed instead of expected application.

Root Cause

- Incorrect VirtualHost configuration
- Missing or incorrect ServerName or DocumentRoot

Solution

Check enabled virtual hosts:

apachectl -S

Verify VirtualHost configuration:

<VirtualHost *:80>

ServerName app.company.com

DocumentRoot /var/www/app

</VirtualHost>

Restart Apache after validation:

systemctl restart apache2

22. Apache Reverse Proxy Routing Failure

Issue

Apache reverse proxy returns 502 or 503 errors.

Root Cause

- Backend application not running
- Proxy modules not enabled
- Incorrect proxy configuration

Solution

Enable required modules:

a2enmod proxy proxy_http

Sample proxy configuration:

ProxyPass / http://localhost:8080/

ProxyPassReverse / http://localhost:8080/

Restart Apache:

systemctl restart apache2