Practice Assignment on Testing, Linux & Servers

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1. Introduction

This project focuses on configuring a secure and monitored Linux development environment for new developers.
The scope includes system monitoring, user management with access control, and automated backups for Apache and Nginx web servers to ensure reliability, security, and disaster recovery readiness.

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2. Task 1: System Monitoring Setup

Objective

To monitor system health, resource utilization, and performance issues for effective troubleshooting and capacity planning.

Implementation

- Installed htop to monitor CPU, memory, and running processes.

- Used df and du commands to monitor disk usage.

- Identified resource-intensive processes using ps.

- Stored system snapshots in /var/log/system-monitoring/.

Outcome

The monitoring setup provides real-time visibility and historical logs for performance analysis.

Challenges

Understanding process-level resource consumption and automating logs efficiently.

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3. Task 2: User Management and Access Control

Objective

To create secure and isolated user environments for developers.

Implementation

- Created user accounts for Sarah and Mike.

- Configured isolated workspaces:

    o /home/Sarah/workspace

    o /home/mike/workspace

- Applied strict permissions (700) to prevent unauthorized access.
- Enforced password expiration policy (30 days) using chage.

Outcome

Each user has a secure and private workspace, aligned with organizational security standards.

Challenges

Testing permission isolation without compromising system security.

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4. Task 3: Backup Configuration for Web Servers

Objective

To ensure data integrity and disaster recovery through automated backups.

Implementation

- Created backup scripts for Apache and Nginx.
- Configured cron jobs to run every Tuesday at 12:00 AM.
- Stored compressed backups in /backups/ with date-based naming.
- Verified backup integrity using tar -tzf.
- Maintained verification logs.

Outcome

Reliable, automated, and verifiable backup system for both web servers.

Challenges

Ensuring cron jobs executed correctly and validating backup archives.

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5. Conclusion

The project successfully demonstrates key DevOps responsibilities, including system monitoring, security enforcement, and backup automation.
All tasks were completed following Linux best practices and industry standards.

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6. Attachments

- Terminal screenshots
- Log files
- Backup verification logs
- GitHub repository link