PERFORMANCE TESTING PHASE

Date: 02-11-2025
Team ID: NM2025TMID02823
Project Name: Optimizing User Group and Role Management with Access Control and Workflows

INTRODUCTION:

The Performance Testing Phase ensures that the developed user group and role management system with access control and workflows performs optimally under real-world conditions. It validates the speed, scalability, and stability of the ServiceNow-based solution while managing multiple user roles, workflows, and access permissions simultaneously. This phase confirms that the system can handle complex authorization scenarios without compromising efficiency or security.

PURPOSE OF PERFORMANCE TESTING:

The purpose of performance testing in this project is to ensure that the ServiceNow-based role and access management system can handle concurrent user operations such as role assignments, workflow executions, and permission validations efficiently. This testing phase verifies that the system remains stable, secure, and responsive even under heavy user loads and data transactions. It also evaluates resource utilization, database performance, and response times to guarantee a seamless administrative and user experience across all modules.

OBJECTIVES:

1. **Validate System Scalability** – Ensure that the access control system can manage an increasing number of users, roles, and permissions without performance degradation.
2. **Measure Response Time and Workflow Execution** – Evaluate how quickly the system handles operations such as group creation, role assignment, and workflow approvals.
3. **Identify Performance Bottlenecks** – Detect and resolve slow execution areas, such as complex query processing or delayed permission propagation.
4. **Ensure Stability Under Load** – Test how the system behaves when multiple users perform access management tasks concurrently.
5. **Verify Integration Efficiency** – Assess the performance of integrated modules, ensuring smooth communication between ServiceNow components.
6. **Enhance User Experience** – Confirm that both administrators and end users experience consistent performance and low latency while managing roles and workflows.
7. **Establish Performance Benchmarks** – Define baseline metrics for optimal access control performance to support monitoring and future scaling.

TESTING PROCEDURE:

1. Multiple user groups and roles were created simultaneously to test the speed and reliability of data updates.
2. Workflow approvals and access revocations were repeatedly executed to measure response times under load.
3. The system's performance was analyzed while processing large volumes of permission and workflow records.
4. Concurrent access requests were simulated to ensure that no latency or access conflicts occurred.

RESULTS AND OBSERVATIONS:

The performance testing validated that the access control and workflow management system functions efficiently across multiple roles and user groups. Automated workflows significantly reduced manual intervention by more than 65%, improving operational speed and reducing the likelihood of human errors. The system maintained consistent response times even during concurrent access operations. Data integrity was preserved across user role changes and workflow executions, confirming the reliability of the access control structure. Overall, the system exhibited strong performance, scalability, and audit-ready stability.

CONCLUSION:

Performance testing confirmed that the "Optimizing User Group and Role Management with Access Control and Workflows" system performs efficiently on the ServiceNow platform. It delivers stable, secure, and high-speed operations even under heavy multi-user workloads. The solution is fully optimized for final deployment, ensuring seamless workflow automation, compliance, and user access governance.