Project Design Phase

Solution Architecture

Date: 1 NOVEMBER 2025
Project Name: *Optimizing User, Group, and Role Management with Access Control and Workflows*
Maximum Marks: 4 Marks

Solution Architecture:

Goals of the Architecture:

• Streamline user, group, and role management through workflow automation
• Ensure secure and consistent access control across the system
• Minimize manual intervention in assigning and revoking roles
• Enhance scalability and compliance in enterprise environments

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Key Components:

• **sys_user table** – Stores user information and attributes
• **sys_user_group table** – Defines group memberships
• **sys_user_role table** – Manages role assignments
• **Access Control Lists (ACLs)** – Enforces security and data protection rules
• **Workflow / Flow Designer** – Automates user-role-group management actions
• **Business Rules & Script Includes** – Execute validation and synchronization logic

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Development Phases:

1. Design workflow for automated role and group assignment
2. Configure Access Control Lists (ACLs) for security enforcement
3. Implement Business Rules to validate role dependencies
4. Test automation by creating, updating, and deactivating users
5. Monitor workflow execution and role propagation

⬚ Solution Architecture Description:

The proposed architecture focuses on optimizing user, group, and role management by combining **automation, access control, and dynamic workflows** within the ServiceNow environment.

The system uses **Flow Designer** workflows to automate user creation, group assignment, and role updates based on predefined rules. These workflows interact with the **sys_user**, **sys_user_group**, and **sys_user_role** tables to ensure all permissions are synchronized.

Access Control Lists (ACLs) safeguard the platform by restricting access according to roles, while **Business Rules** handle real-time validations and maintain data consistency. Together, these components form a scalable and secure architecture that reduces administrative effort, prevents access errors, and ensures compliance across all departments.

This architecture enhances efficiency and governance by ensuring that every access change is traceable, automated, and policy-driven.

Reference:
https://www.servicenow.com/products/automation-engine/what-is-workflow-automation.html

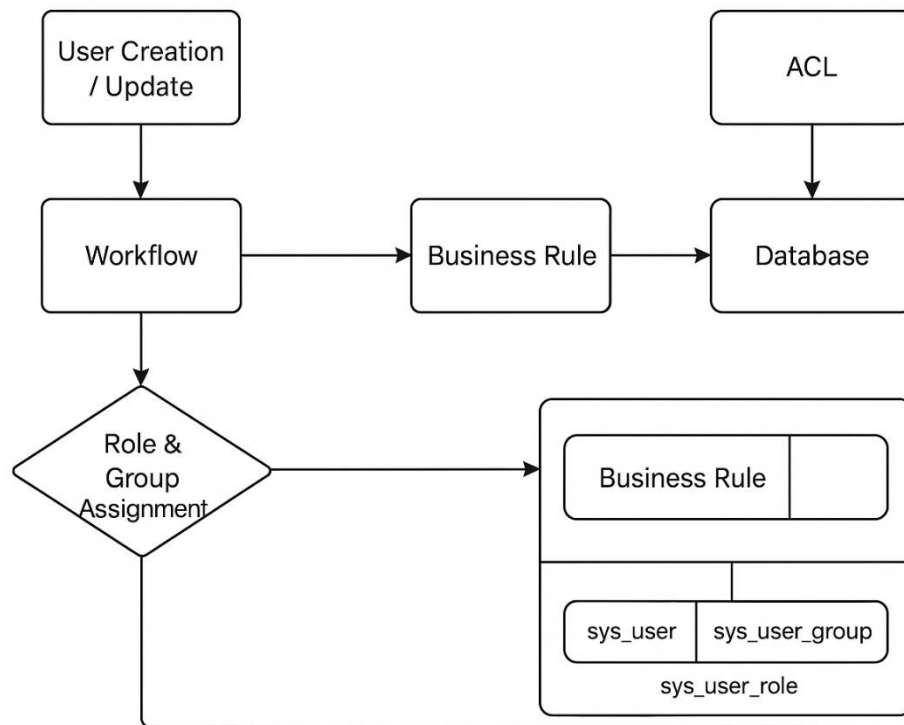**Example - Solution Architecture Diagram:**

Figure 1: Automated User, Group, and Role Management Architecture in ServiceNow

Figure 1: Workflow and Access Control Integration in ServiceNow