

Project design phase

Solution Architecture

Date : 02 november 2025

Team ID : NM2025TMID02609

Project Name : Optimizing User, Group, and Role Management with Access Control and Workflows

Maximum Marks: 4marks

Goals of the Architecture:

- ✓ Implement a secure and automated user, group, and role management system within ServiceNow.
- ✓ Enable role-based access control (RBAC) through Access Control Lists (ACLs).
- ✓ Automate task assignments and approvals using Flow Designer workflows.
- ✓ Improve data security, consistency, and operational efficiency within ITSM processes.

Key Components:

- ✓ sys_user table: Stores user profiles and login data.
- ✓ sys_user_group table: Manages user groups and associations.
- ✓ sys_user_role table: Stores and assigns roles to users and groups.
- ✓ Access Control (ACL): Defines permissions for tables and fields based on roles.
- ✓ Flow Designer: Automates task status updates and approval workflows.
- ✓ Task and Project Tables: Manage project and task-level operations.
- ✓ ServiceNow Cloud: Provides the hosted SaaS infrastructure.

Development Phases:

- ✓ Create users (e.g., Alice – Project Manager, Bob – Team Member).
- ✓ Create roles and groups in System Security → Roles/Groups.
- ✓ Assign users to appropriate roles and groups.
- ✓ Configure ACLs for tables to ensure correct access control.
- ✓ Build a Flow Designer workflow for automatic task updates.
- ✓ Implement an Approval Flow for Alice (Project Manager) to review completed tasks.
- ✓ Test impersonation and role access validation using Bob's profile.

Solution Architecture Description:

The solution architecture ensures efficient management of users, roles, and workflows within the ServiceNow platform.

It leverages Access Control Lists (ACLs) to enforce security at the table and field levels, ensuring that only authorized users can view or edit specific records.

The Flow Designer automates business processes such as updating task statuses, routing approvals, and sending notifications.

The system defines structured role hierarchies—Admin, Project Manager, and Team Member—to simplify access and workflow management.

This architecture promotes automation, data security, and operational transparency across IT service management activities while minimizing manual intervention.

Reference:

- ✓ <https://developer.servicenow.com/dev.do#!/guides/quebec/now-platform/workflow/flow-designer>
- ✓ https://docs.servicenow.com/bundle/utah-platform-security/page/administer/security/concept/c_AccessControl.html
- ✓ https://developer.servicenow.com/dev.do#!/learn/learning-plans/rome/app_store_learnv2_buildmyfirstapp_rome_creating_application_logic

Example – Solution Architecture Diagram:

Figure 1: Architecture and data flow of the ServiceNow-based role and workflow management system

