

Project Design Phase – II

Technology Stack (Architecture & Stack)

Date: 01 November 2025

Team ID: NM2025TMID08115

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

Technical Architecture:

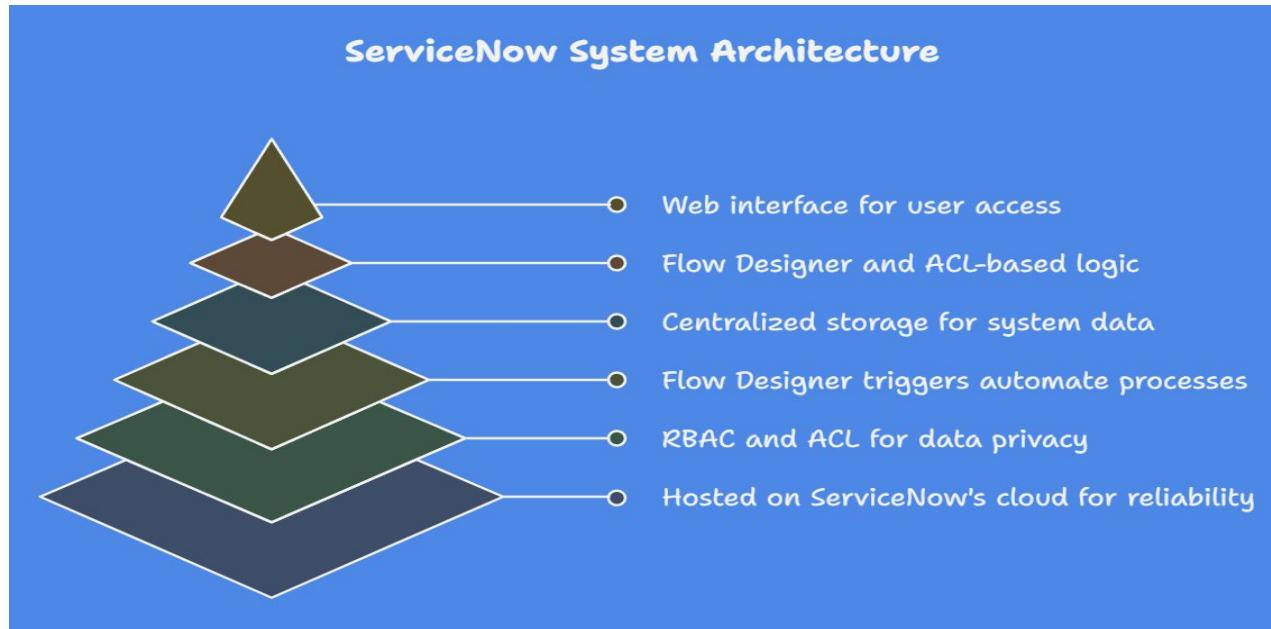
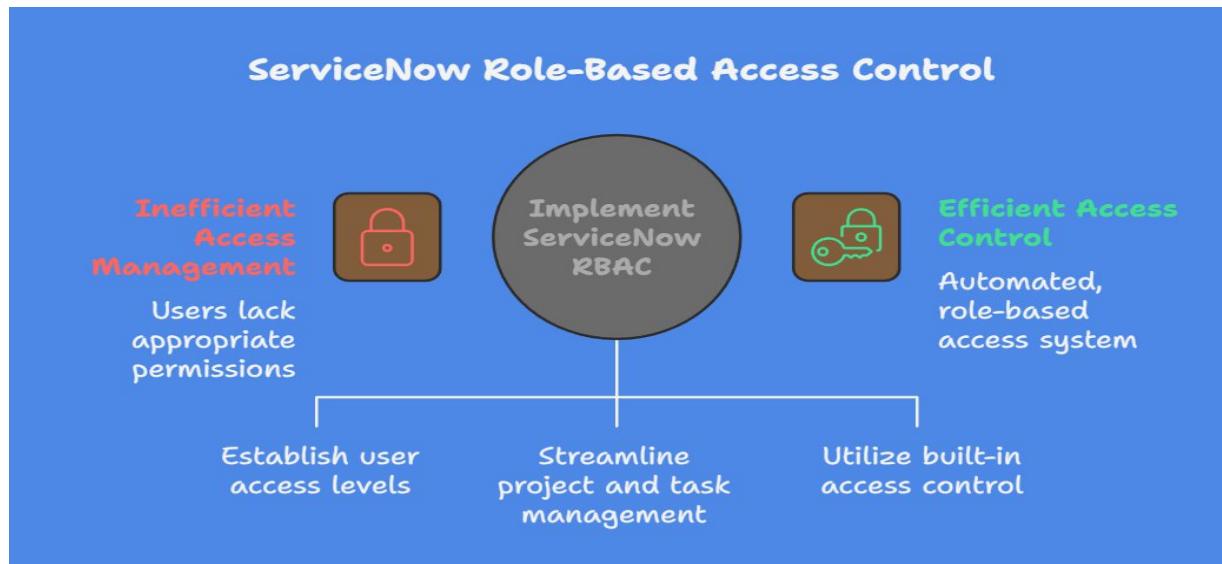


Table 1: Components & Technologies

S.No	Component	Description	Technology
1.	User Interface	Users and administrators interact via the ServiceNow Web Dashboard for creating users, groups, and managing workflows.	ServiceNow Web UI
2.	Application Logic - 1	Handles user, group, and role creation with proper mapping for access control.	ServiceNow System Security Modules
3.	Application Logic - 2	Implements workflow logic for task assignment and approval using Flow Designer.	ServiceNow Flow Designer
4.	Application Logic - 3	Enforces access control through ACLs and role validation for project and task tables.	ServiceNow ACLs, Script Includes
5.	Database	Stores user, group, role, and task data securely within ServiceNow tables.	ServiceNow Database Tables
6.	Cloud Database	Managed and hosted by ServiceNow's cloud infrastructure ensuring high reliability.	ServiceNow Cloud Backend
7.	File Storage	Used for maintaining logs, configuration, and audit records within the platform.	ServiceNow System Logs
8.	External API - 1 (Optional)	Could integrate with HRMS or project tools for user synchronization.	ServiceNow REST API Integration
9.	External API - 2	Not applicable for current project scope.	—
10.	Machine Learning Model	Not applicable for this project.	—
11.	Infrastructure (Server / Cloud)	Fully hosted and managed on ServiceNow's SaaS cloud platform.	ServiceNow Cloud (SaaS)

Table 2: Application Characteristics

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Not applicable since ServiceNow is a proprietary platform.	—
2.	Security Implementations	Role-based access control and ACL rules protect data from unauthorized access.	ACLs, Scoped Applications
3.	Scalable Architecture	ServiceNow's SaaS architecture supports horizontal scalability for multiple users and roles.	ServiceNow Cloud Architecture
4.	Availability	Highly available and managed by ServiceNow's global cloud infrastructure.	Load-balanced Cloud Instances
5.	Performance	Optimized through background scripts, indexed tables, and asynchronous workflow execution.	GlideRecord, Flow Designer