

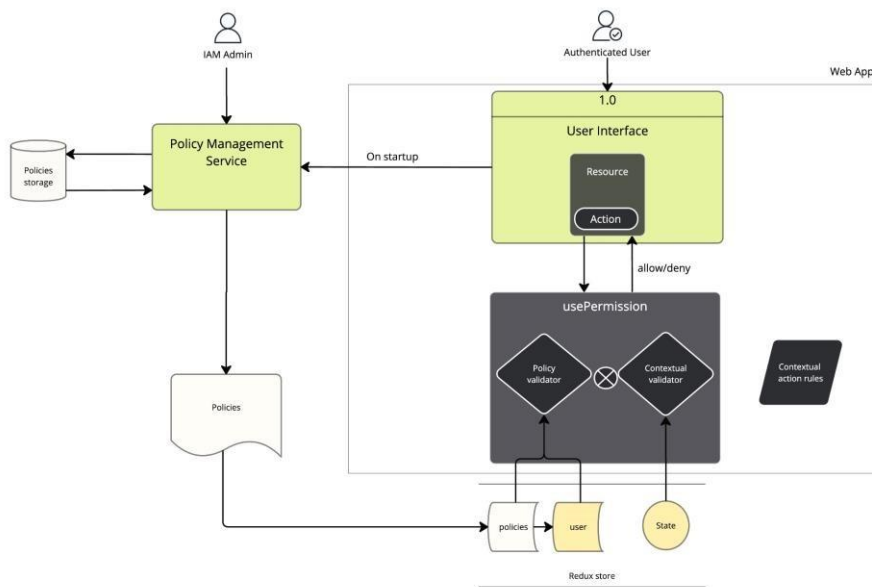
Project Design Phase-II Technology Stack (Architecture & Stack)

| | |
|---------------|---|
| Date | 02 Nov 2025 |
| Team ID | NM2025TMID03269 |
| Project Name | Optimizing User, Group, and Role Management with Access Control and Workflows |
| Maximum Marks | 2 Marks |

Technical Architecture:

This project is designed to streamline and secure the management of users, groups, roles, and permissions within an enterprise application. It integrates access control and workflow automation to ensure that all role assignments and user modifications are handled in a controlled and auditable manner.

Example:



Attribute-based Access Control Workflow

Components & Technologies:

| S.No | Component | Description | Technology (ServiceNow) |
|------|------------------------|--|--|
| 1 | User Interface | Interface for admins to manage users, groups, and roles | ServiceNow Web UI (Forms, Lists, Dashboards) |
| 2 | Application Logic | Manages workflows and access control logic | Flow Designer, Business Rules, Script Includes |
| 3 | Role-Based Access | Defines access permissions based on roles | ACLs, RBAC (Role and Group Management) |
| 4 | Workflow Engine | Automates approval workflows for new access and role assignments | Flow Designer, Workflow Editor (Legacy) |
| 5 | Data Storage | Stores user, group, role, and workflow records | ServiceNow CMDB, sys_user, sys_user_grmember |
| 6 | Authentication Service | Handles secure login and integrates with external identity providers | SSO (SAML, OAuth 2.0), Multi-Factor Auth |
| 7 | Integration Layer | Syncs data with external apps such as HRIS or Active Directory | IntegrationHub, REST API, MID Server |
| 8 | Notification System | Notifies users and admins of workflow status changes | ServiceNow Notifications, Email, SMS APIs |
| 9 | | Maintains history of user changes | A u d |

| | | | |
|----|------------|-----------------------------|------------------------------|
| | | and role assignments | |
| | Hosting & | SaaS-based cloud deployment | System Logs, Audit Tables |
| 10 | Deployment | managed fully by ServiceNow | ServiceNow Cloud (PaaS/SaaS) |

Application Characteristics:

| S.No | Characteristic | Description | Technology (ServiceNow) |
|------|-----------------------------|---|--|
| 1 | No-Code/Low-Code Support | Enables rapid development of workflows and logic without heavy coding | Flow Designer, UI Policies, UI Actions |
| 2 | Security & Compliance | Provides in-built role-based access and platform security compliance | ACL Security, Contextual Security, GRC |
| 3 | | Automatically scales with enterprise Scalability needs through Architecture | SaaS Multi-instance ServiceNow’s cloud |

| | | | |
|---|-----------------------------|--|---|
| 4 | | Offers redundancy and high uptime High Availability across distributed instances | ServiceNow Cloud Infrastructure |
| 5 | Performance Optimization | Optimized for enterprise-scale datasets using async processing and indexing | GlideRecord, Query Optimization, Caching |
| 6 | | Modular logic using configuration, Maintainability workflows, and reusable script Apps, Update Sets includes | Scoped |
| 7 | | Easily integrates with internal and Integration Ready external systems using APIs | IntegrationHub, REST/SOAP APIs |
| 8 | | Native support for change history and Auditability access control logs | Audit History, System Log Tables |
| 9 | | Accessible via mobile app for on-the- Mobile Support go approvals and management | ServiceNow Mobile App |