Project Design Phase-II: Technology Stack

Date: 31 January 2025

Team ID: LTVIP2025TMID29711

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

Maximum Marks: 4 Marks

Technical Architecture

This project implements a robust architecture on the ServiceNow Platform with a layered structure that supports:

- A user-friendly interface
- Business logic for user-role management
- Access control workflows
- Secure data storage
- Future integration with cloud services

Architecture Diagram:

A conceptual diagram illustrating the flow:

[Browser UI] → [ServiceNow Forms] → [Business Rules / Scripts] → [Tables & ACLs]
↓
[Flow Designer]
↓
[Email Notifications]

Table 1: Components & Technologies

S.No	Component	Description	Technology
1.	User Interface	Web-based interface for Admins and Users	HTML, CSS, ServiceNow UI Pages, GlideForm
2.	Application Logic-1	Logic to assign users and groups dynamically	JavaScript (ServiceNow Scripting API)
3.	Application	Workflow execution for	Flow Designer, Business

S.No	Component	Description	Technology
	Logic-2	onboarding	Rules
4.	Application Logic-3	Role-based access control enforcement	Access Control Rules (ACLs)
5.	Database	Structured user/group/role storage	ServiceNow CMDB, Custom Tables
6.	Cloud Database	For future scalability in enterprise use	ServiceNow Cloud Database
7.	File Storage	Storing logs, exports	ServiceNow Attachment API / Filesystem
8.	External API-1	(Optional) Aadhar or government verification	Aadhaar API
9.	External API-2	(Optional) Organization directory API	REST APIs
10.	ML Model	(Optional for analysis) Role prediction model	ServiceNow AI Models (optional)
11.	Infrastructure	Deployed in cloud-hosted ServiceNow instance	ServiceNow SaaS

□ Table 2: Application Characteristics

S.No	Characteristics	Description	Technology / Implementation
1.	Open-Source Frameworks	Client-side scripting and REST APIs if extended outside ServiceNow	Bootstrap, jQuery
2.	Security	Role-based access, encryption, ACLs, and audit trails	ACLs, SHA-256 (ServiceNow Encryption)
3.	Scalable Architecture	Built on scalable ServiceNow multi-instance platform	3-tier model, Microservices (future)
4.	Availability	99.9% uptime through ServiceNow cloud infrastructure	Distributed servers, Load balancing
5.	Performance	Quick API calls, form loads, data caching	GlideAggregate, Query Optimization

□ References

- IBM Patterns: AI-Powered Backend System
- C4 Model
- IBM Cloud Architecture
- AWS Architecture
- Medium: How to Draw Useful Technical Architecture Diagrams