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

| Date | 1 Nov 2025 |
|---|---|
| TeamID | NM2025TMID09058 |
| ProjectName | Optimizing User Group and Role Management with Access Control and Workflows. |
| Maximum Marks | 4Marks |

The deliverable includes the **technical architecture diagrams** and supporting details as per **Table 1** and **Table 2** below.
It represents how user, group, and role management processes are automated and secured within the **ServiceNow** platform.

Example: **Optimizing User Group and Role Management using Workflows and Access Controls in ServiceNow**

**Guidelines**

- Include all **processes** involved in role and group management as application logic blocks (Flow Designer, ACLs, Scripts).
- Show **ServiceNow SaaS** as the main infrastructure layer (cloud-hosted).
- Indicate any **external integrations** such as HR or Identity Management systems (optional).
- Specify **data storage components** like sys_user, sys_user_group, and sys_user_role tables.
- Indicate **workflow interfaces** where approvals, validations, and notifications occur.
- No machine learning model is used in the current version.

**Table-1:Components&Technologies:**

| S.No | Component | Description | Technology |
|---|---|---|---|
| 1. | UserInterface | Admin interacts through the Service Now Web UI to manage users, groups, and roles. | ServiceNow Web UI |
| 2. | Application Logic-1 | Automates role and group assignments using approval workflows. | ServiceNow Flow Designer,Script |
| 3. | ApplicationLogic-2 | Validates access and role conditions before update or deletion. | Glide Record in ServerScript |
| 4. | ApplicationLogic-3 | Sends notifications for approvals, denials, or blocked access changes. | ServiceNow Notifications |
| 5. | Database | Stores user, group, and role details in system tables. | ServiceNow CMDB,IncidentTables |
| 6. | Cloud Database | Managed securely under ServiceNow's SaaS infrastructure. | ServiceNow Cloud Database |
| 7. | FileStorage | Stores audit logs and workflow history. | ServiceNow systemlogs |
| 8. | ExternalAPI-1 | Can connect to HR or Identity systems for auto-provisioning. | RESTAPIin ServiceNow |
| 9. | ExternalAPI-2 | Not applicable for current version. | - |
| 10. | MachineLearningModel | Not applicable for current use case. | - |
| 11. | Infrastructure(Server/Cloud) | Hosted and managed on the ServiceNow SaaS platform. | ServiceNowCloud (SaaS) |

**Table-2:Application Characteristics:**

| S.No | Characteristics | Description | Technology |
|---|---|---|---|
| 1. | Open-Source Frameworks | Not applicable(ServiceNow is proprietary) | - |
| 2. | Security Implementations | Uses ACLs, scoped apps, and secure scripts to enforce role-based access. | ACLs, Scoped Applications |
| 3. | Scalable Architecture | SaaS-based design that scales easily with large user and role data. | ServiceNow Cloud Architecture |
| 4. | Availability | Always available through ServiceNow's managed cloud hosting. | Load-balanced ServiceNow Instances |
| 5. | Performance | Fast execution using Flow Designer, async jobs, and optimized GlideRecord queries. | Flow Designer, GlideRecord |