

Project Design Phase

Solution Architecture

Date	01 November 2025
Team ID	NM2025TMID05884
Project Name	Optimizing User, Group, and Role Management with Access Control and Workflows
Maximum Marks	4 Marks

Solution Architecture:

Goal of the Architecture:

- Establish a structured framework for managing users, groups, and roles in ServiceNow.
- Enforce secure access through Access Control Lists (ACLs) to protect project and task data.
- Automate workflows using Flow Designer to streamline task assignments and approvals.
- Maintain accountability and operational transparency between Project Manager and Team Members.
- Ensure scalability and consistency of user-role configurations across multiple ServiceNow instances.

Key Components:

- **User Table:** Stores user information and assigned roles (Project Manager, Team Member).
- **Group Table:** Defines and manages project groups for collaborative access.
- **Role Table:** Contains custom roles linked to ACLs for project and task tables.
- **Access Control List (ACL):** Manages table- and field-level permissions for role-based visibility.
- **Flow Designer:** Automates task status updates, approvals, and notifications.
- **Application Module:** Integrates all elements for smooth navigation and testing.

Development Phase:

1. Create Users & Groups

- Add users (e.g., Alice as Project Manager and Bob as Team Member).
- Create and assign groups to manage project access.

2. Define Roles

- Create custom roles (u_project_table, u_task_table) and assign them to users.
3. **Assign Access Control (ACLs)**
 - Configure ACLs for tables and fields based on user roles.
 4. **Build Automated Flow**
 - Use Flow Designer to automate status updates and approval requests.
 5. **Testing & Validation**
 - Impersonate users (e.g., Bob) to test role restrictions, access permissions, and workflow triggers.

Solution Architecture Description:

The architecture focuses on building a robust, role-based access management and workflow automation system within ServiceNow. By defining specific user roles, implementing ACLs, and automating task operations with Flow Designer, the system ensures that only authorized users can perform designated actions.

This solution enhances collaboration, enforces accountability, and maintains data integrity across the project lifecycle. All components—from user creation to flow automation—work together to deliver a structured, secure, and transparent project environment. The design is scalable, plugin-free, and adaptable for larger teams, ensuring consistent and efficient role-based management across ServiceNow environments.

Example –Solution Architecture Diagram:

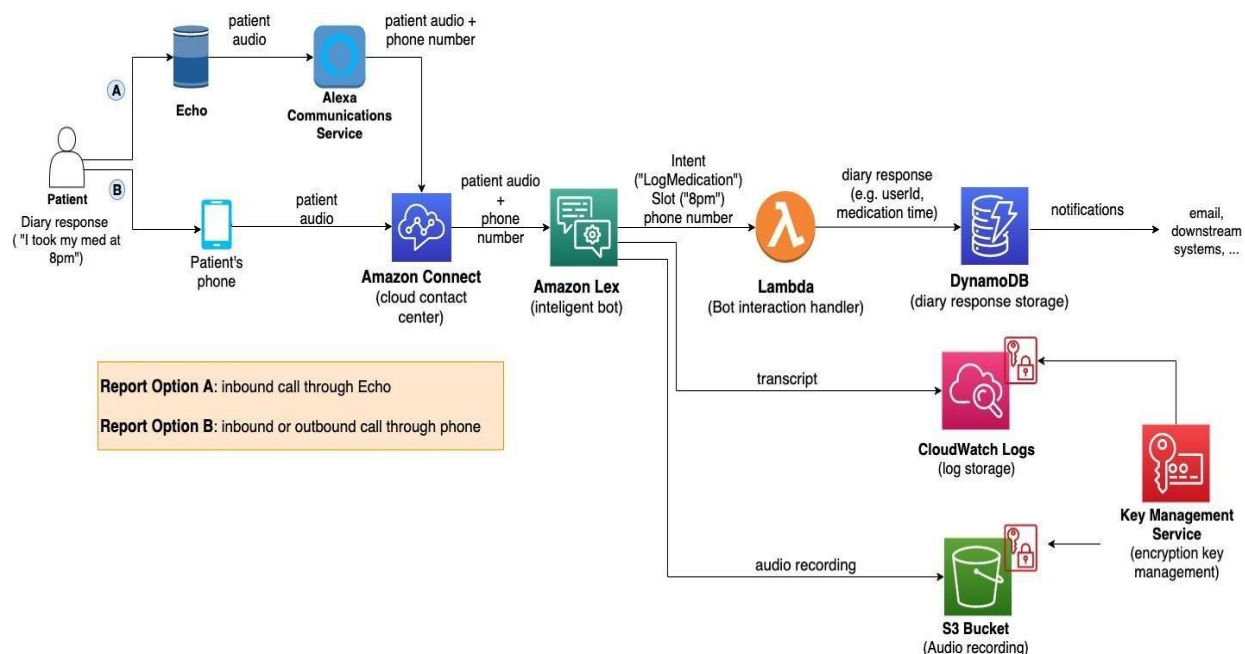


Figure 1: Architecture and data flow of the voice patient diary sample application