

Project Design Phase – II

Technology Stack (Architecture & Stack)

Date: 01 NOV 2025

Team ID: NM2025TMID03313

Project Name: Streamlining Ticket Assignment for Efficient Support Operations

Maximum Marks: 4 Marks

Technical Architecture:

The deliverable includes the architecture diagram and the supporting tables below, describing the system's technology stack and design components.

Example Use Case: Streamlining ticket assignment and optimizing support operations in ServiceNow using intelligent automation and workload balancing.

Reference:

<https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/>

Guidelines:

- Include all processes as application logic or technology blocks.
 - Define infrastructural boundaries (Local / Cloud).
 - Show third-party API integrations if applicable.
 - Specify data storage and management layers.
 - Indicate interfaces to analytics or automation components.
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Components and Technologies	Application Characteristics
User Interface (ServiceNow Web UI)	
Application Logic (Flow Designer, Script, GlideRecord, Notifications)	Security (Role-based access control, ACLs)
Database (ServiceNow CMDB, Incident Tables)	Scalability (SaaS-based) ServiceNow architecture
Cloud Database (ServiceNow Cloud Database)	Availability (Highly available ServiceNow cloud hosting)
File Storage (ServiceNow system logs)	Performance (Optimized with asynchronous flows, indexed tables)
External APIs (REST API in ServiceNow)	
External APIs (REST API in ServiceNow)	
Infrastructure Inffoiture (ServiceNow Cloud SaaS)	

Table 1: Components & Technologies

S.No Component	Description	Technology
1. User Interface	Admins, agents, and managers interact through the ServiceNow web dashboard.	ServiceNow Web UI
2. Application Logic-1	Automates ticket assignment using Flow Designer based on agent workload and priority.	ServiceNow Flow Designer
3. Application Logic-2	Evaluates agent availability and skill set from the assignment tables.	GlideRecord, Server Scripts
4. Application Logic-3	Sends real-time notifications when tickets are assigned or reassigned.	ServiceNow Notifications

S.No Component	Description	Technology
5. Database	Stores tickets, agents, and assignment details.	ServiceNow CMDB, Task & Incident Tables
6. Cloud Database	Managed by ServiceNow cloud infrastructure.	ServiceNow Cloud Database
7. File Storage	Used minimally to log ticket transactions and assignment histories.	ServiceNow System Logs
8. External API-1	Integration with HRMS or external scheduling systems for agent validation.	REST API (ServiceNow IntegrationHub)
9. External API-2	Optional — can be integrated with chat or bot interfaces for ticket updates.	REST API / Virtual Agent
10. Machine Learning Model	Optional — can predict ticket routing based on historical assignment success.	ServiceNow Predictive Intelligence
11. Infrastructure (Server / Cloud)	Fully hosted and managed on ServiceNow SaaS environment.	ServiceNow Cloud (SaaS)

Table 2: Application Characteristics

S.No Characteristics	Description	Technology
1. Open-Source Frameworks	Not applicable (ServiceNow platform is proprietary).	-
2. Security Implementations	Uses role-based access control, ACLs, and scoped applications for restricted operations.	ACLs, Scoped Apps
3. Scalable Architecture	ServiceNow's SaaS architecture ensures seamless horizontal	ServiceNow Cloud Architecture

S.No	Characteristics	Description	Technology
		scalability for large ticket volumes.	
4.	Availability	Highly available system backed by redundant ServiceNow cloud instances.	Load-balanced ServiceNow Instances
5.	Performance	Optimized using asynchronous processing, indexed tables, and background scripts for faster routing.	GlideRecord, Background Scripts
6.	Integration	Supports modular integration with third-party CRMs, HR tools, and AI services.	IntegrationHub, REST APIs