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

Team ID : NM2025TMID08544

Team Size : 4

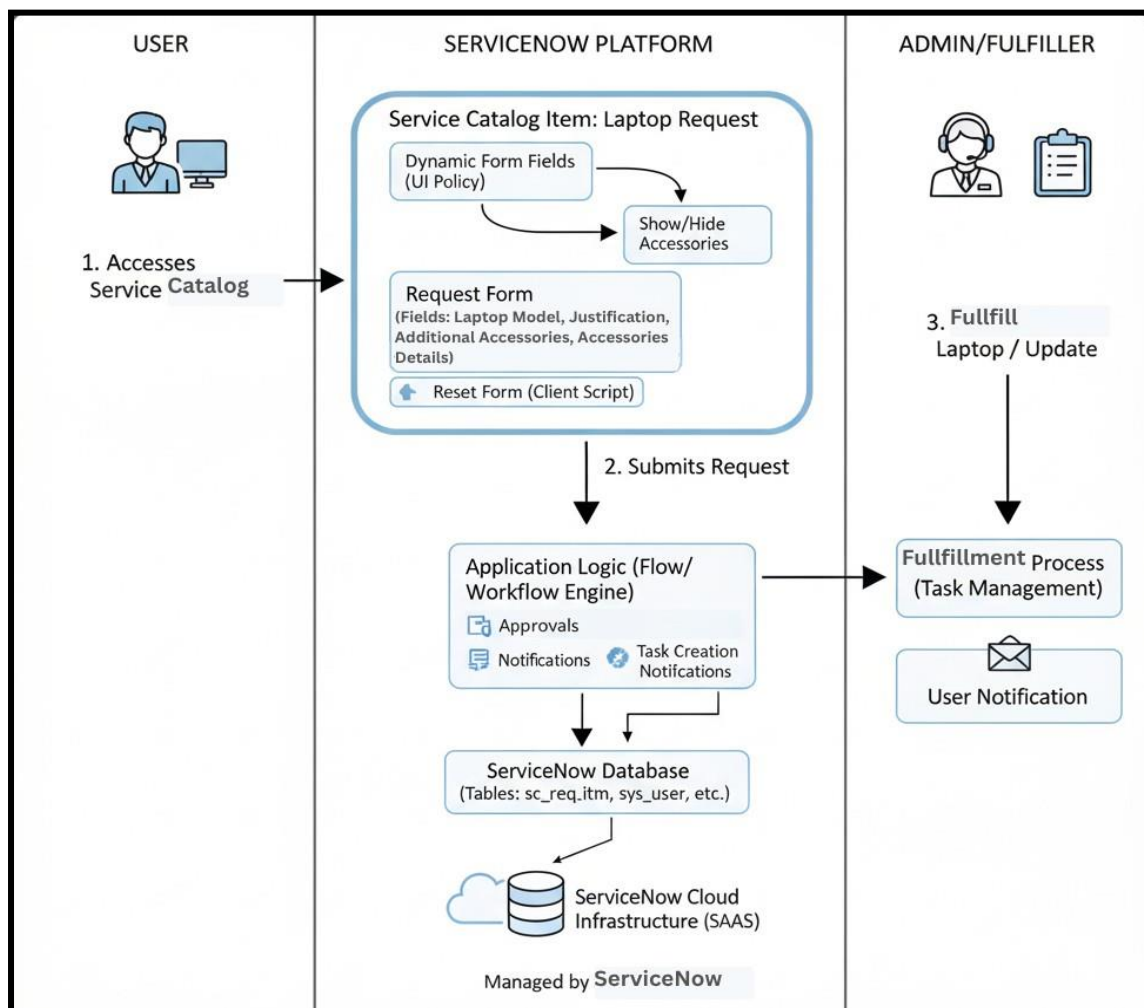**Team Leader : Varsha R**

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Technical Architecture Overview:

The architecture for the **Laptop Request Catalog Item** is built entirely within the ServiceNow platform, leveraging native components for form design, dynamic behavior, governance, and deployment. The solution is designed to be scalable, secure, and user-friendly, with minimal external dependencies.

Technical Architecture Diagram:

Description:

In the context of the ServiceNow platform, the architectural diagram for a Service Catalog item like the Laptop Request is represented by the native **ServiceNow Request Fulfillment process**.

- **User/Employee:** Accesses the **Service Portal** or the standard **ServiceNow Web UI**.
- **User Interface:** Interacts with the **Laptop Request Catalog Item** form.
- **Client Logic (Browser): Catalog UI Policy** (for dynamic fields like *Accessories Details*) and **Client UI Action** (*Reset Form*) run in the browser.
- **ServiceNow Cloud/Server:**
  - **Application Logic:** The submission creates a **Request (sc_request)**, **Requested Item (sc_req_item)**, and potentially a **Catalog Task (sc_task)**.
  - **Database:** Request data is stored in the **ServiceNow CMDB/Service Catalog tables** (e.g., sc_item_option, sc_req_item).
  - **Notifications:** (If configured) Notifications are sent via **ServiceNow Notifications** upon submission or fulfillment.
- **External Interface:** (Optional) Integration with an **HRMS/User Directory** to verify employee details.

Table-1: Components & Technologies:

S.No	Component	Description	Technology
1.	**User Interface**	End-users interact with the form via the Service Portal or the main application. Admin/Developer interacts via the standard UI.	**ServiceNow Service Portal / ServiceNow Web UI**
2.	**Application Logic-1**	Defines the structure, variables, and categories of the catalog item.	**ServiceNow Service Catalog / Variables**
3.	**Application Logic-2 (Client-Side)**	Implements dynamic form behavior based on user input (e.g., showing/hiding fields).	**ServiceNow Catalog UI Policy**
4.	**Application Logic-3 (Client-Side)**	Provides user-focused action like clearing the form fields.	**ServiceNow Client UI Action (Script)**
5.	**Database**	Stores the submitted request data, including variable values.	**ServiceNow CMDB / Service Catalog Tables**
6.	**Cloud Database**	Managed backend database for the entire ServiceNow instance.	**ServiceNow Cloud Database**

7.	**File Storage / Tracking**	Captures the configuration changes for governance and deployment.	**ServiceNow Local Update Set / XML Export**
8.	**External API-1**	(Optional) HRMS integration to verify the user's role or eligibility.	**REST API in ServiceNow**
9.	**Infrastructure (Server / Cloud)**	The entire solution is hosted and managed on the platform.	**ServiceNow Cloud (SaaS) Platform**

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	**Open-Source Frameworks**	Not applicable (ServiceNow is proprietary).	-
2.	**Security Implementations**	Access control for the catalog item, variables, and update set tracking are role-based.	**ACLs, Scoped Applications, Update Set History**
3.	**Scalable Architecture**	The solution is built on a SaaS platform designed for high horizontal scalability.	**ServiceNow Cloud Architecture (SaaS)**
4.	**Availability**	Highly available via the ServiceNow cloud hosting and architecture.	**Load-balanced ServiceNow Instances**
5.	**Performance**	Optimized by using out-of-the-box ServiceNow features (UI Policy, Client Action) rather than extensive custom scripts.	**Native ServiceNow features (UI Policies), Client Scripting**