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

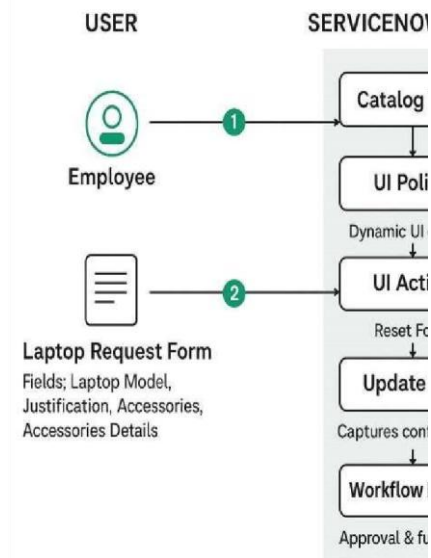| Date | 01 November 2025 |
|---|---|
| Team ID | NM2025TMID04724 |
| Project Name | Laptop Request Catalog Item |
| Maximum Marks | 4 Marks |

Technical Architecture:

The deliverable includes the architectural diagram and supporting details in Table 1 and Table 2.
This architecture represents how the Laptop Request Catalog Item in ServiceNow enables employees to request laptops efficiently through an automated workflow.

Example: Laptop Request Catalog Item

## Technical Architecture – Laptop Re... (ServiceNow)

**USER**

**SERVICENO...**

- Employee
- Laptop Request Form
  Fields; Laptop Model, Justification, Accessories, Accessories Details

Catalog

UI Poli...

Dynamic UI ...

UI Acti...

Reset Fo...

Update...

Captures con...

Workflow ...

Approval & fu...

Guidelines:

- Include all ServiceNow processes (catalog item creation, UI policy, UI action, update set).

- Show infrastructure separation — Local Instance and Cloud Instance.

- Indicate external interfaces (email approvals, notifications).

- Highlight data storage in the ServiceNow database.

- Represent automation scripts for dynamic form behavior.

- Show deployment flow of update sets between instances.

Table-1 : Components & Technologies:

| S.No | Component | Description | Technology |
|------|-----------|-------------|------------|

| S.No | Component | Description | Technology |
|---|---|---|---|
| 1 | User Interface | Employees submit laptop requests through the Service Catalog form in ServiceNow. | ServiceNow Service Catalog UI |
| 2 | Application Logic-1 | Handles creation of the catalog item and captures all request variables. | ServiceNow Catalog Item Configuration |
| 3 | Application Logic-2 | Applies dynamic visibility and mandatory rules (e.g., "Accessories Details" field). | Catalog UI Policy, Client Script |
| 4 | Application Logic-3 | Allows users to reset the form using a custom UI Action script. | JavaScript (Client-side) |
| 5 | Database | Stores catalog item details, variable values, and user submissions. | ServiceNow Tables (sc_cat_item, sc_item_option, sc_request) |
| 6 | Cloud Database | Maintains data securely in the ServiceNow cloud environment. | ServiceNow Cloud Database |
| 7 | File Storage | Stores update set XML files for migration across instances. | Internal ServiceNow File Storage |
| 8 | External API-1 | (Optional) Email notification or approval integration. | ServiceNow Notification API |
| 9 | External API-2 | (Optional) Integration with asset management for tracking laptop inventory. | REST API in ServiceNow |
| 10 | Machine Learning Model | Not applicable for current project. | – |
| 11 | Infrastructure (Server / Cloud) | Hosted and managed fully on the ServiceNow SaaS platform. | ServiceNow Cloud (SaaS) |

Table-2: Application Characteristics:

| S.No | Characteristics | Description | Technology |
|---|---|---|---|
| 1 | Open-Source Frameworks | Not applicable, as ServiceNow is a proprietary low-code platform. | – |

| 2 | Security Implementations | Role-based access ensures only authorized users can create, approve, or manage laptop requests. | Role-Based Access Control (RBAC), ACLs |
|---|---|---|---|
| 3 | Scalable Architecture | Built on ServiceNow's SaaS model, allowing easy scalability across departments and instances. | ServiceNow Cloud Architecture |
| 4 | Availability | Always accessible via the ServiceNow cloud, ensuring 24/7 uptime and redundancy. | Load-balanced ServiceNow Instances |
| 5 | Performance Optimization | Efficient performance through optimized catalog forms, client indexed data tables. | GlideRecord, Service Catalog scripts, and |