

Project Design Phase-II

Technology Stack (Architecture & Stack)

Technical Architecture:

The architecture for Automated Network Request Management follows a multi-tier model centered on the **ServiceNow Now Platform**. It connects the user-facing **Service Portal** to backend network infrastructure through a secure **MID Server** and **Integration Hub**.

Table-1: Component Details:

S.No	Component	Description	Technology
1.	User Interface	Web portal for submitting and tracking network change requests.	ServiceNow Service Portal (AngularJS / React)
2.	Process Logic	Automation of request workflows and approval routing.	ServiceNow Flow Designer
3.	Integration Layer	API-based connectivity to network vendors (Cisco, Juniper, etc.).	ServiceNow Integration Hub (REST / SOAP / SSH)
4.	Data Storage	Tracking of network configuration items and audit logs.	ServiceNow CMDB & MariaDB
5.	Security Interface	Secure communication with on-premise network equipment.	ServiceNow MID Server
6.	Cloud Hosting	High-availability hosting for the management application.	ServiceNow Multi-instance Cloud

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Libraries used for custom scripting and interface design.	JavaScript (ES12), AngularJS, Rhino Engine
2.	Security Implementations	Access controls and encrypted data transmission.	Role-Based Access Control (RBAC), TLS, AES-256
3.	Scalable Architecture	Infrastructure designed to handle high request volumes.	3-Tier Multi-Instance Architecture
4.	Availability	Continuous access through redundant global data centers.	Advanced High Availability (AHA)
5.	Performance	Rapid processing using asynchronous logic execution.	Asynchronous Flow Processing / RaptorDB

References:

Following are the industry-standard references for ServiceNow automation and architecture:

- **ServiceNow Flow Designer & Integration Hub Guide:**
<https://www.servicenow.com/products/integration-hub.html>
- **Infrastructure Automation Patterns:** <https://developer.hashicorp.com/validated-patterns/terraform/automate-deployments-with-hcp-terraform-and-servicenow-catalog>
- **ServiceNow Technical Stack Overview:**
<https://www.servicenowzone.com/servicenow-technology-stack.php>
- **ITSM Architecture Best Practices:** <https://hub.metronlabs.com/servicenow-itsm-and-its-architecture/>