

# Project Design Phase – Backend Development & Configurations

## Automated Network Request Management in ServiceNow

### 1. Introduction to the Project Design Phase

The **Project Design Phase** is a critical stage in the implementation of the Automated Network Request Management system in ServiceNow. This phase focuses on translating the approved planning outputs into a detailed technical and functional design. It acts as the blueprint for backend development, automation, and UI/UX customization.

In this project, the Design Phase accounts for **50% of the overall project weightage**, emphasizing its importance in ensuring system scalability, maintainability, and user satisfaction. The design phase is divided into two major areas: - **Backend Development & Configurations** - **UI/UX Development & Customization**

This document covers **Data Architecture, Automation Logic, Business Rules**, and **Interface Design elements** such as navigation flow, usability, tooltips, and help text.

### 2. Backend Development & Configurations

Backend design ensures that the system is robust, secure, and capable of handling automated workflows efficiently. In ServiceNow, this involves designing tables, relationships, flows, and server-side logic.

### 3. Data Architecture

#### 3.1 Overview of Data Architecture

The data architecture defines how data is stored, managed, and related within the ServiceNow platform. For Automated Network Request Management, the architecture is designed to support: - Structured request intake - Task-level tracking - Approval and audit history - SLA monitoring

The design follows ServiceNow best practices by extending existing base tables instead of creating standalone custom tables.

## 3.2 Table Design

### 3.2.1 Network Request Table

- Table Name: u\_network\_database
- Extends: sc\_req\_item

Purpose: - Stores all network-related service requests - Acts as the parent record for approvals and tasks

Key Fields: - Request Number (Auto-generated) - Requested For - Request Type (LAN, WAN, VPN, Firewall, IP Allocation) - Business Justification - Priority - Approval Status - Requested Date - SLA Target

The screenshot shows the SAP Table Designer for 'Table Network Database'. The configuration section includes fields for Label, Name, and Extends table. The Application is set to 'Global'. The 'Create module' and 'Create mobile module' checkboxes are checked. The 'Add module to menu' dropdown is set to 'Create new'. The 'New menu name' field is empty. The 'Remote Table' checkbox is unchecked. The 'Class' dropdown is set to 'Table'.

The 'Table Columns' section displays a list of dictionary entries with the following columns: Column label, Type, Reference, Max length, Default value, and Display.

Column label	Type	Reference	Max length	Default value	Display
Sys ID	Sys ID (GUID)	(empty)	32		false
Updated	Date/Time	(empty)	40		false
✗ Device Details	String	(empty)	40		false
✗ Requested Number	String	(empty)	40		false
✗ Created by	String	(empty)	40		false
✗ Customer Document	String	(empty)	40		false
✗ Date of Enquiry	Date	(empty)	40		false
✗ Customer Address	String	(empty)	40		false
Created	Date/Time	(empty)	40		false
Updated by	String	(empty)	40		false
Updates	Integer	(empty)	40		false

### 3.2.2 Network Task Table

- Table Name: u\_network\_task
- Extends: task

Purpose: - Tracks individual tasks created for fulfilling network requests

Key Fields: - Task Number - Parent Network Request - Assignment Group - Assigned To - Task State - Work Notes - Resolution Details

Table Network Task

A table is a collection of records in the database. Each record corresponds to a row in a table, and each field on a record corresponds to a column on that table. Applications use tables and records to manage data and processes. [More Info](#)

\* Label  Application

\* Name  Remote Table

Extends table  Class

Columns Controls Application Access

Table Columns Reference Search

Dictionary Entries

Column label	Type	Reference	Max length	Default value	Display
Short description	String	(empty)	40		false
Upon reject	String	(empty)	40	cancel	false
Actual start	Date/Time	(empty)	40		false
Expected start	Date/Time	(empty)	40		false
Approval history	Journal	(empty)	4,000		false
Updated	Date/Time	(empty)	40		false
Urgency	Integer	(empty)	40	3	false
Business duration	Duration	(empty)	40		false
User input	User Input	(empty)	4,000		false
Description	HTML	(empty)	8,000		false
Active	True/False	(empty)	40	true	false
Additional comments	Journal Input	(empty)	4,000		false
Opened	Date/Time	(empty)	40	javascripts.nowDateTime()	false
SLA due	Due Date	(empty)	40		false

### 3.3 Table Relationships

- One Network Request can have multiple Network Tasks (One-to-Many)
- Network Tasks inherit common task properties such as state, priority, and assignment

### 3.4 Data Integrity and Validation

- Mandatory fields enforced at form level
- Choice lists standardized for request types and priorities
- Reference fields used for users and groups
- Duplicate request prevention logic

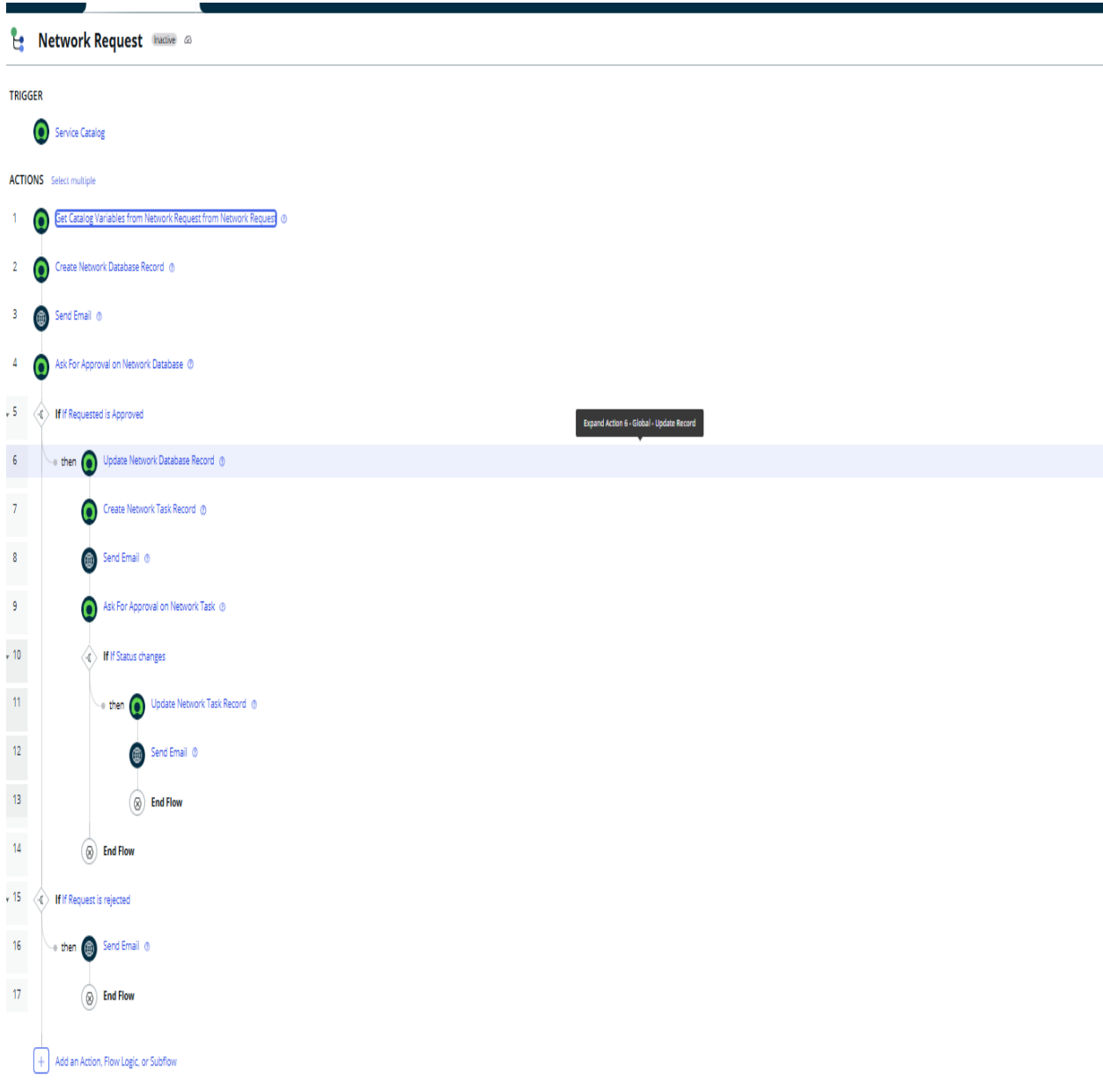
## 4. Automation Logic

### 4.1 Overview of Automation Strategy

Automation is implemented using **ServiceNow Flow Designer**, ensuring low-code, maintainable, and scalable solutions.

Automation goals: - Reduce manual intervention - Ensure consistent execution - Improve turnaround time

## 4.2 Flow Design



#### **4.2.1 Request Submission Flow**

Trigger: - When a Network Request record is created

Flow Actions: 1. Validate request details 2. Categorize request type 3. Set priority and SLA  
4. Trigger approval flow

#### **4.2.2 Approval Flow**

- Manager approval for standard requests
- Security approval for firewall and VPN requests
- Conditional branching based on request type

#### **4.2.3 Task Creation Flow**

- Automatically create Network Task records
- Assign tasks to appropriate network group
- Send notifications to assignees

#### **4.2.4 Closure Flow**

- Update request status on task completion
- Send completion notification to requester
- Close request with audit trail

### **4.3 Error Handling and Notifications**

- Flow failure handling with admin alerts
- User-friendly error messages
- Retry logic for failed actions

## **5. Business Rules**

### **5.1 Purpose of Business Rules**

Business Rules are used for **server-side validations and background processing** that cannot be handled by UI policies or flows alone.

### **5.2 Key Business Rules Implemented**

#### **5.2.1 Auto Assignment Rule**

- Trigger: Before insert / update
- Logic:
  - If request type = VPN → assign VPN Network Group
  - If request type = Firewall → assign Security Network Group

### **5.2.2 Priority Calculation Rule**

- Calculates priority based on business impact and urgency

### **5.2.3 Data Consistency Rule**

- Prevents request closure if related tasks are still open

## **5.3 Performance Considerations**

- Minimal use of synchronous business rules
- Preference for async processing where applicable

## **6. UI/UX Development & Customization**

The UI/UX design ensures that the system is intuitive, efficient, and accessible for all user roles.

## **7. Interface Design**

### **7.1 Service Portal Design**

- Custom Network Request catalog page
- Clean and minimal layout
- Role-based visibility of catalog items

### **7.2 Form Design**

- Logical grouping of fields
- Mandatory fields clearly marked
- Conditional field display using UI Policies

## **8. Navigation Flow**

### **8.1 User Navigation Flow**

1. Login to ServiceNow Portal
2. Select Network Services
3. Choose required Network Request
4. Fill and submit request form
5. Track request status

## 8.2 Network Team Navigation Flow

1. Access assigned Network Tasks
2. Update task progress
3. Add work notes
4. Complete task

## 9. Usability Considerations

- Minimal clicks to submit requests
- Auto-filled user information
- Consistent form layouts
- Clear status indicators

The screenshot displays the 'Network Request' form within the ServiceNow Employee Center. At the top, a red banner states 'Employee Center is available to you' with a link to 'Learn More about Employee Center'. The breadcrumb trail reads: Home > Service Catalog > Standard Changes > Network Standard Changes > Network Request. A search bar is located to the right of the breadcrumbs. The form itself is divided into two main sections. The left section contains fields for: \*User Name (filled with 'Abraham Lincoln'), \*Email ID (filled with 'abraham.lincoln@example.com'), \*Phone Number (filled with '8907654321'), \*Type of Device (a dropdown menu with 'Mobile' selected), and \*Please provide address here (filled with 'anna Nagar'). Below these is a question 'Is this request opened on behalf of someone else?' with a 'Yes' option selected. The right section features a 'Quantity' dropdown set to '1', a 'Delivery Time: 2 Days' indicator, and three buttons: 'Add to Cart', 'Save as Draft', and 'Order Now'. At the bottom of the form is an 'Add attachments' section with a 'Choose a file or drag it here.' prompt. The ServiceNow logo is in the bottom left, and a 'System Administrator' profile icon is in the bottom right.

**Employee Center is available to you**  
Join your peer organizations in creating a better employee experience with Employee Center, ServiceNow's new employee portal. [Learn More about Employee Center](#)

**servicenow** Knowledge Catalog Requests System Status Cart Tours System Administrator

Home > Service Catalog > Standard Changes > Network Standard Changes > Network Request Search Catalog

### Network Request

\*User Name  
Abraham Lincoln

\*Email ID  
abraham.lincoln@example.com

\*Phone Number  
8907654321

\*Type of Device  
Mobile

\*Please provide address here  
anna Nagar

Is this request opened on behalf of someone else?  
Yes

Quantity: 1  
Delivery Time: 2 Days  
Add to Cart  
Save as Draft  
Order Now

Add attachments  
Choose a file or drag it here.





## **11. Accessibility and User Experience Enhancements**

- Keyboard-friendly navigation
- Readable font sizes
- Error messages with corrective guidance

## **12. Conclusion**

The Project Design Phase provides a comprehensive technical and functional blueprint for implementing Automated Network Request Management in ServiceNow. By focusing on strong backend architecture, reliable automation, and intuitive UI/UX design, this phase ensures system efficiency, scalability, and user satisfaction.

This design enables seamless transition into the development and implementation phase while minimizing risks and rework.