Project Documentation & Implementation Guide

Project Overview

The Automated Network Request Management System is a ServiceNow-based solution designed to modernize the lifecycle of network service requests. By moving away from manual email and spreadsheet-based tracking, this project implements an end-to-end automated flow using ServiceNow Flow Designer. The system ensures seamless approvals, real-time notifications, and robust data integrity while maintaining a low-code architecture for future maintainability.

Project Roadmap

The project was executed following a strict 5-phase roadmap:

1. Catalog Creation: Defining the interface and inputs.
2. Form Setup: Configuring UI policies and behavior.
3. Approval Integration: Building logic for role-based sign-offs.
4. Testing & Security: Validating flows and ACLs.
5. Deployment: Finalizing the update set for production readiness.

2. Problem Statement

Manual handling of network requests resulted in:

- High turnaround times due to human latency.
- Lack of transparency for requesters regarding status.
- Data inconsistency and potential for human error.
- Difficulty in auditing approvals for compliance.

3. Technical Implementation

3.1. Architecture & Design

The solution prioritizes "Low-Code/No-Code" features to ensure ease of handoff to future administrators.

- Automation Engine: Flow Designer (Zero custom Script Includes/Business Rules).
- Scripting: Minimal usage of Catalog Client Scripts and UI Policies only for essential dynamic form behavior.
- **Database Schema:**
    - u_network_database: Custom table for storing request records.
    - u_network_task: Custom table for fulfillment tasks.

3.2. Service Catalog Configuration

Variables Configured:

- Request Type: Determines the approval path.
- Justification: Required for audit trails.
- Portal Details: Specifics regarding the network requirement.
- Urgency: Drives prioritization logic.

Form Behaviour:

- Validated via Service Portal preview.
- Implemented UI Policies to handle field visibility (e.g., hiding specific fields unless "High Urgency" is selected).
- Resolved variable alignment issues using Variable Sets.

3.3. Automation Logic (Flow Designer)

The workflow logic mimics real enterprise IT handling:

1. Trigger: User submits request via Service Portal.
2. Approval Routing (Conditional):
    - *Standard Request:* Routes to Manager for approval.
    - *Department Specific:* Triggers Group Approval.
3. Fulfillment: System generates a task in u_network_task upon approval.
4. Notification: Automated emails sent at Submission, Approval, and Completion stages.

4. Testing & Validation

A rigorous testing phase ensured system reliability.

4.1. Debugging Protocol

- Flow Execution Logs: Used Execution Details to trace step-by-step logic, identifying failure points in the approval loop.
- Email Logs: Verified System Logs → Email → Sent/Received to confirm triggers fired correctly.
- Variable Debugging: Fixed missing data bindings using Catalog Client Scripts for dynamic population.

4.2. Functional Testing

- Role Perspectives: Tested as Requester, Approver, and Fulfillers.
- UI Behavior: Confirmed dynamic fields appear/disappear correctly based on user input.

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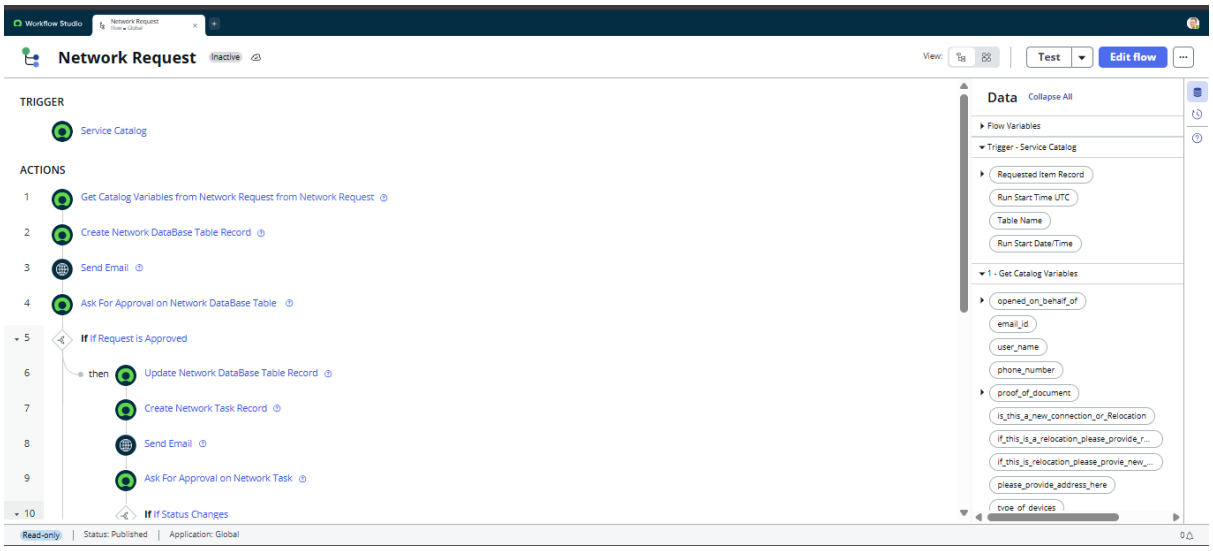
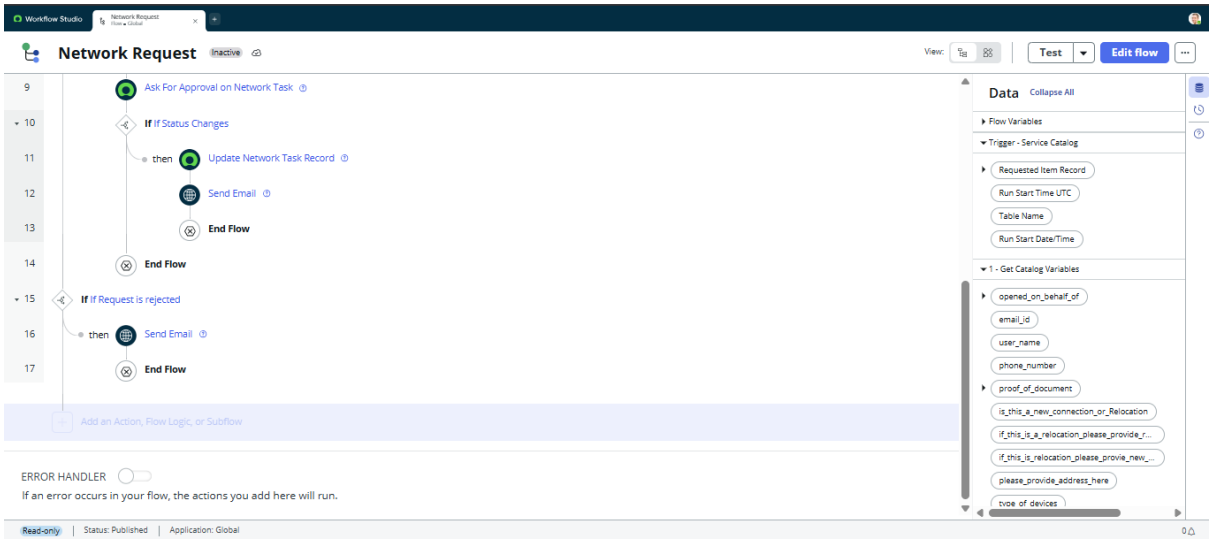
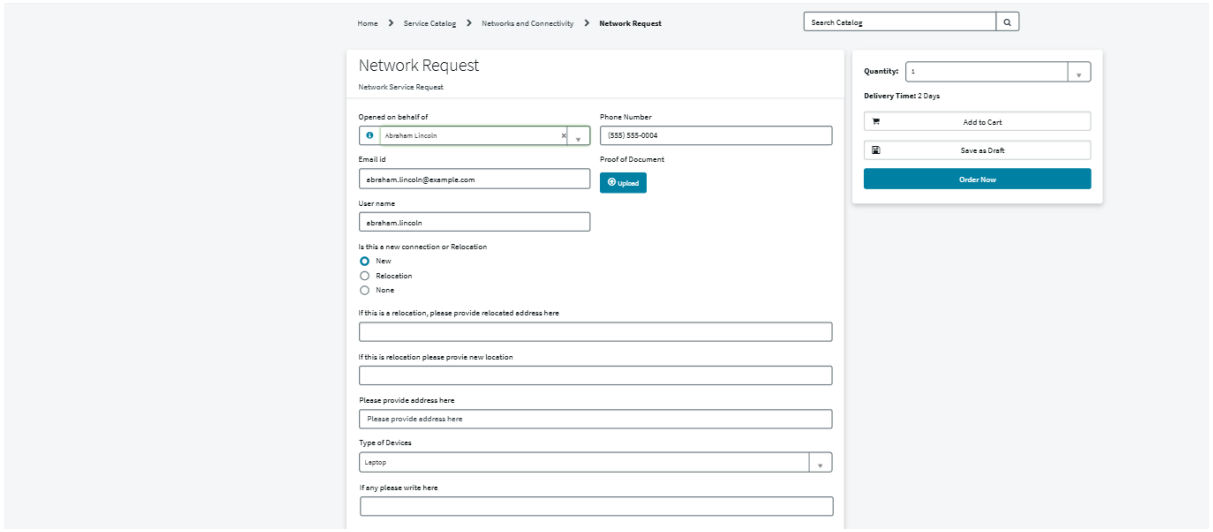
5. Replication Manual (PDI Setup)

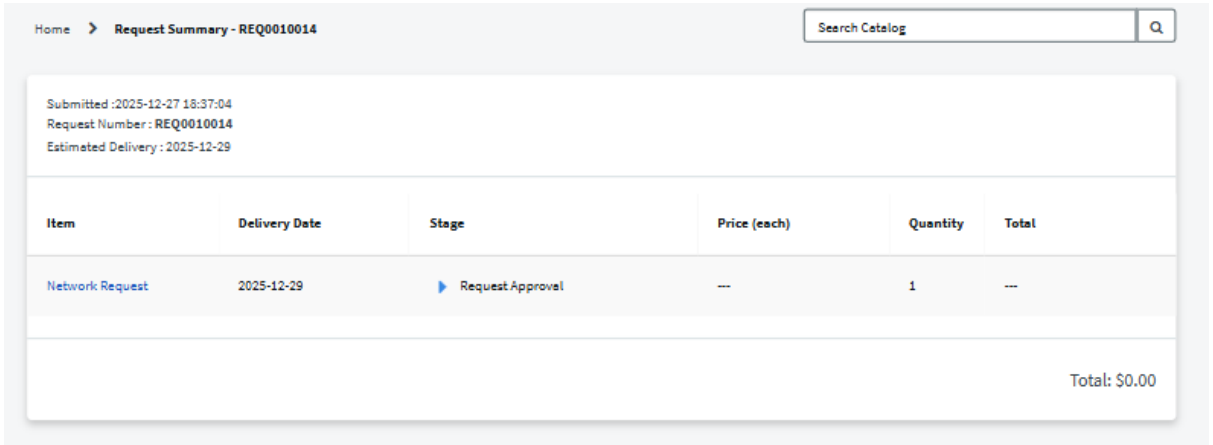
For developers wishing to recreate this solution in a Personal Developer Instance:

1. Catalog Item Creation: Navigate to Service Catalog > Maintain Items and create "Network Request".
2. Variable Configuration: Set up the 4 core variables and map them to the target table columns.
3. Flow Setup: Open Flow Designer > New Flow. Set Trigger to "Service Catalog". Add "Ask for Approval" actions based on Request Type conditions.
4. Security: Configure ACLs (Access Control Lists) to allow read/write access to u_network_database for specific roles.
5. Test Data: Create dummy users for Manager and Network Security roles to test approval routing.



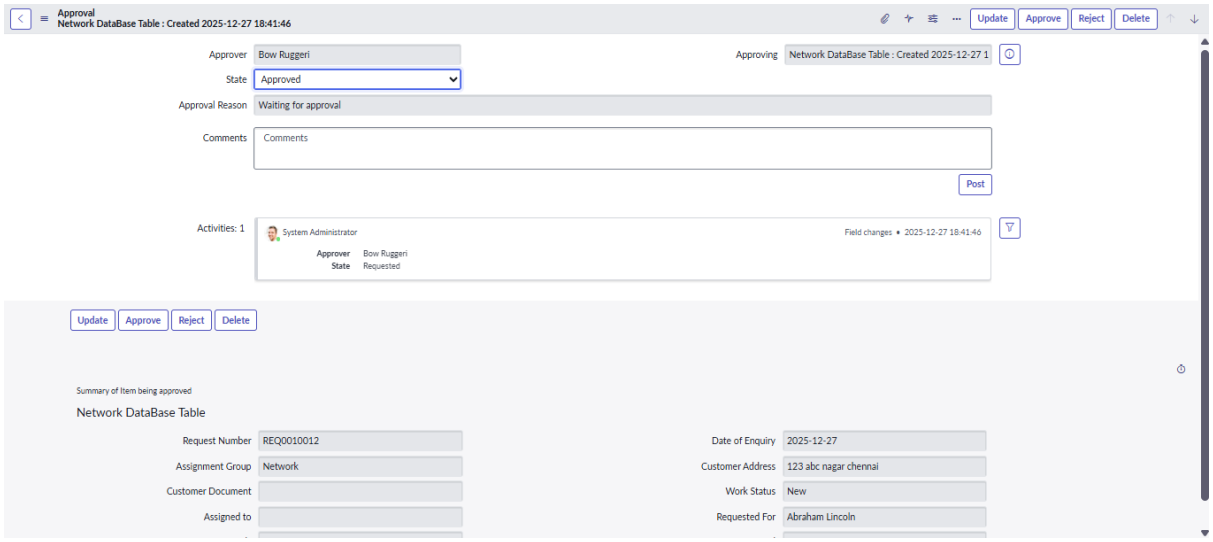

Workflow Studio
Network Request
Inactive
View:
Test
Edit flow
9
Ask For Approval on Network Task
10
If If Status Changes
11
then
Update Network Task Record
12
Send Email
13
End Flow
14
End Flow
15
If If Request is rejected
16
then
Send Email
17
End Flow
Add an Action, Flow Logic, or Subflow
ERROR HANDLER
If an error occurs in your flow, the actions you add here will run.
Read-only
Status: Published
Application: Global
Data
Collapse All
Flow Variables
Trigger - Service Catalog
Requested Item Record
Run Start Time UTC
Table Name
Run Start Date/Time
1 - Get Catalog Variables
opened_on_behalf_of
email_id
user_name
phone_number
proof_of_document
is_this_a_new_connection_or_Relocation
if_this_is_a_relocation_please_provide_r...
if_this_is_relocation_please_provie_new_...
please_provide_address_here
type_of_devices

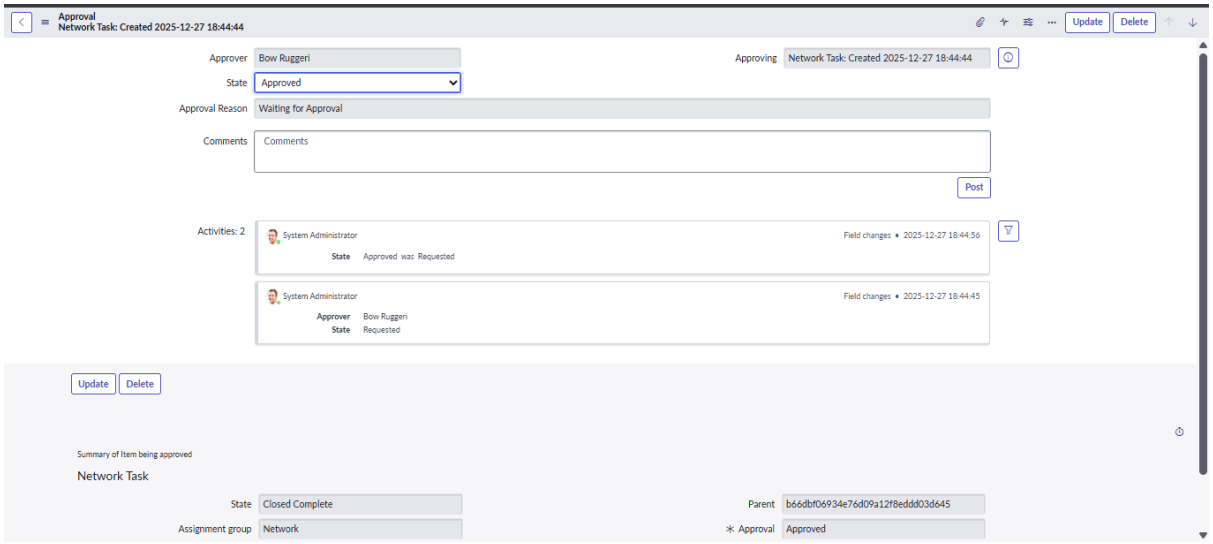

Home
Service Catalog
Networks and Connectivity
Network Request
Search Catalog
Network Request
Network Service Request
Opened on behalf of
Abraham Lincoln
Phone Number
(555) 555-0004
Email id
abraham.lincoln@example.com
Proof of Document
Upload
User name
abraham.lincoln
Is this a new connection or Relocation
New
Relocation
None
If this is a relocation, please provide relocated address here
If this is relocation please provie new location
Please provide address here
Please provide address here
Type of Devices
Laptop
If any please write here
Quantity:
1
Delivery Time: 2 Days
Add to Cart
Save as Draft
Order Now

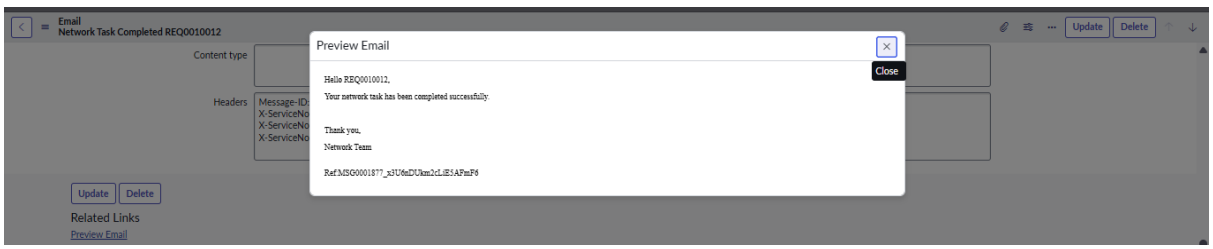

Home
Request Summary - REQ0010014
Search Catalog
Submitted :2025-12-27 18:37:04
Request Number : REQ0010014
Estimated Delivery : 2025-12-29
Item
Delivery Date
Stage
Price (each)
Quantity
Total
Network Request
2025-12-29
Request Approval

1

Total: $0.00


Approval
Network DataBase Table : Created 2025-12-27 18:41:46
Update
Approve
Reject
Delete
Approver
Bow Ruggeri
State
Approved
Approval Reason
Waiting for approval
Comments
Comments
Post
Approving
Network DataBase Table : Created 2025-12-27 1
Activities: 1
System Administrator
Field changes • 2025-12-27 18:41:46
Approver Bow Ruggeri
State Requested
Update
Approve
Reject
Delete
Summary of Item being approved
Network DataBase Table
Request Number
REQ0010012
Assignment Group
Network
Customer Document
Assigned to
Date of Enquiry
2025-12-27
Customer Address
123 abc nagar chennai
Work Status
New
Requested For
Abraham Lincoln


Approval
Network Task: Created 2025-12-27 18:44:44
Update
Delete
Approver
Bow Ruggeri
State
Approved
Approval Reason
Waiting for Approval
Comments
Comments
Post
Approving
Network Task: Created 2025-12-27 18:44:44
Activities: 2
System Administrator
Field changes • 2025-12-27 18:44:56
State Approved was Requested
System Administrator
Field changes • 2025-12-27 18:44:45
Approver Bow Ruggeri
State Requested
Update
Delete
Summary of Item being approved
Network Task
State
Closed Complete
Assignment group
Network
Parent
b66dbf06934e76d09a12f8eddd03d645
Approval
Approved


Email
Network Task Completed REQ0010012
Update
Delete
Content type
Headers
Preview Email
Hello REQ0010012,
Your network task has been completed successfully.
Thank you,
Network Team
Ref:MSG0001877_x3U6nDUkm2cLiE5APmF6
Close
Update
Delete
Related Links
Preview Email

6. Project Outcome & Demo

The final deployment resulted in a fully functional, self-service portal widget.

Demo Highlights:

- Walkthrough: Home → Network Services → Submit Request.
- Live Action: Real-time request submission showing the status change from "Draft" to "Pending Approval."
- Visibility: Annotated visuals in the documentation highlight the Flow execution path and successful email delivery.

7. Future Enhancements

To further scale this solution, the following upgrades are proposed:

- Orchestration: Use ServiceNow Integration Hub to connect with external tools.
- Auto-Provisioning: Integrate with Cisco DNA Center or Ansible to automatically configure network devices upon approval, removing the need for manual tasks.
- Analytics: Build a Performance Analytics Dashboard to report on Request Volume and Average Fulfillment Time.
- Scalability: Expand the logic to cover Device Provisioning and Access Requests.