

ServiceNow Change Management Approval Process

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Description

Managing network changes can be a challenging task for network engineers during regular maintenance, which is prone to human errors and requires seamlessly planning, implementation and verification. Based on Network Change Management Runbook and ticketing system Integration, NetBrain provides the best practices of change management process and workflow to ensures a safer network change task. During this workflow, NetBrain Change executor and ServiceNow Change approver are fully isolated which means they are not necessary to have access cross systems. In this document, NetBrain integrate with ServiceNow ticketing system as an example.

Requirements

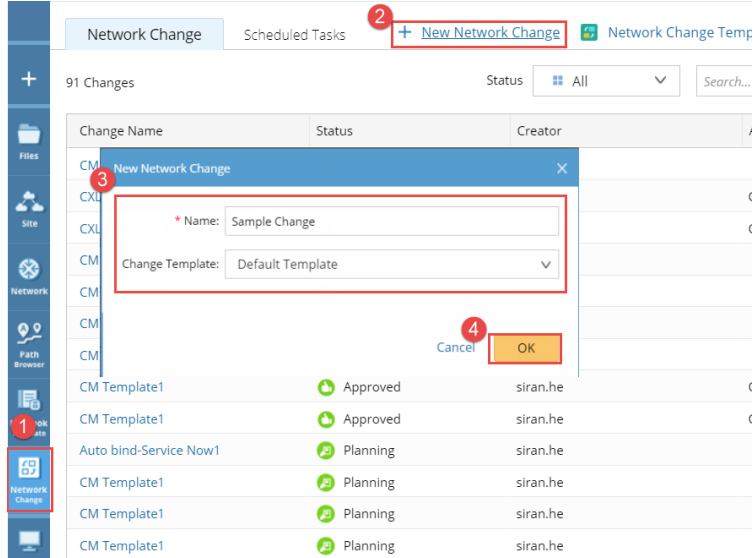
1. NetBrain requirements
 - a. NetBrain login credential with Domain admin, Create Network Change and Execute Network Change and Approve Network Change account
 - b. ServiceNow instance should be able to reach out to NetBrain server (no firewall)
 - c. NetBrain Qapp—Trigger Change Creation - ServiceNOW.xapp (Ask support@netbraintech.com to provide Qapp)
2. ServiceNow requirements
 - a. ServiceNow admin user account allow to create a custom field in “Change Management” form
 - b. ServiceNow admin user account allow to configure 2 new business rules

Integration workflow

Binding Change Management Runbook to ServiceNow Change ticket

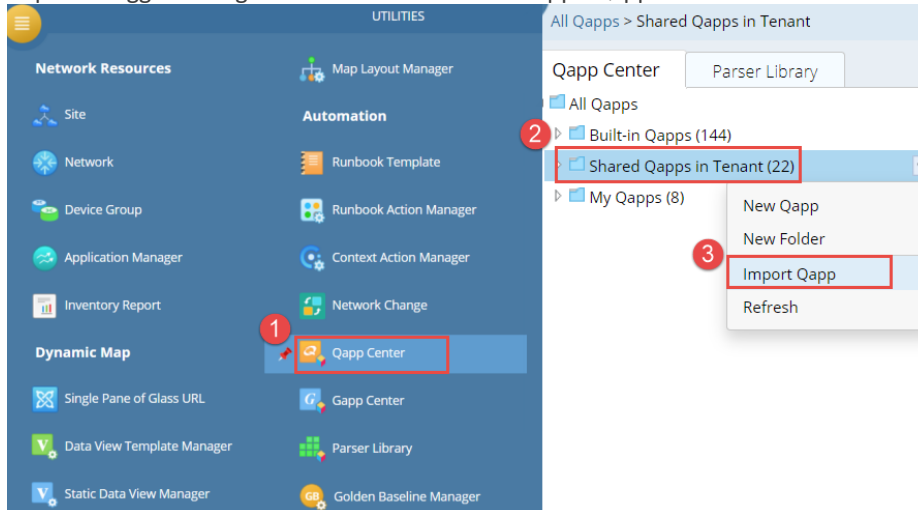
Step 1: NetBrain user create a new Change Management Runbook

- Click **Network Change** on taskbar.
- In **Network Change** panel, click **New Network Change**.
- In **New Network Change** dialog, enter the task name, select a template and click **OK** to create a new Runbook.

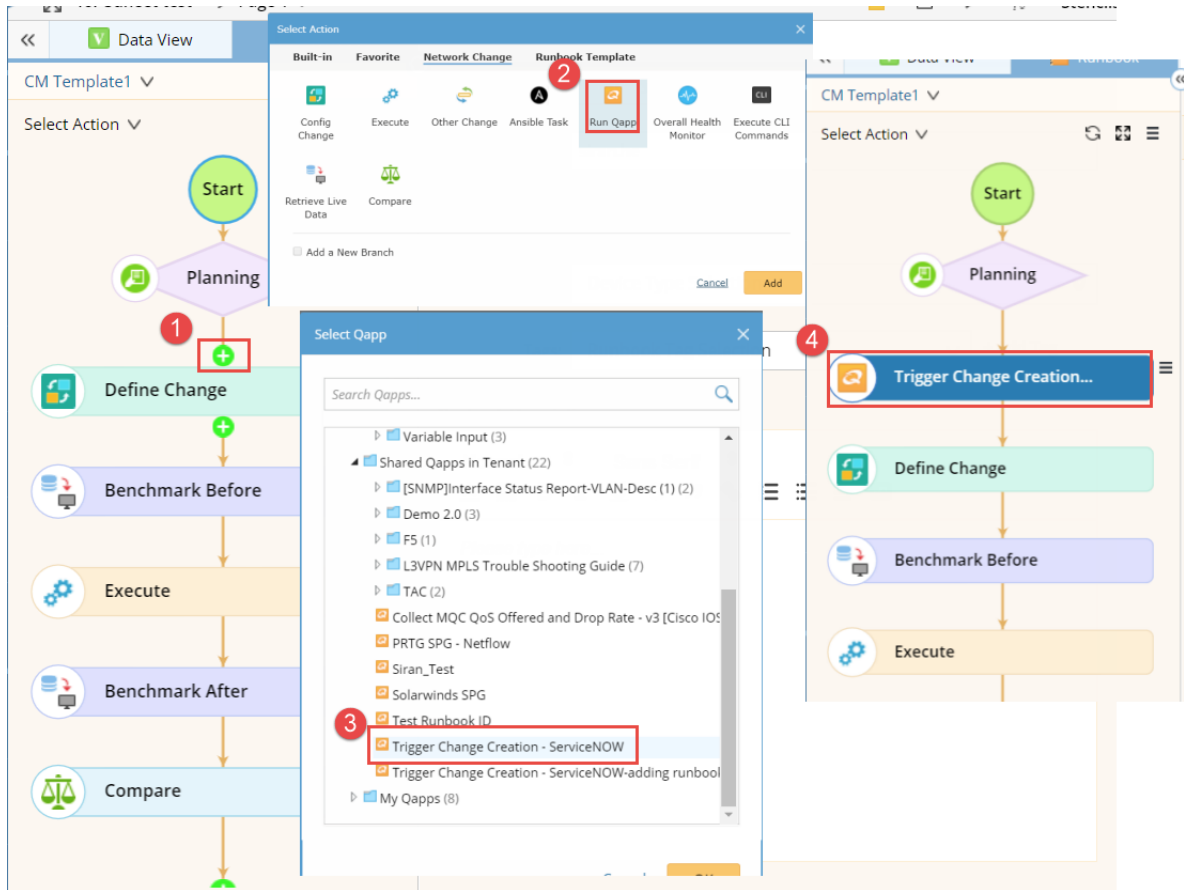


Step 2: NetBrain user add Qapp “Trigger Change Creation - ServiceNOW.xapp” to Change Management Runbook

- Import “Trigger Change Creation - ServiceNOW.xapp” Qapp to NetBrain.

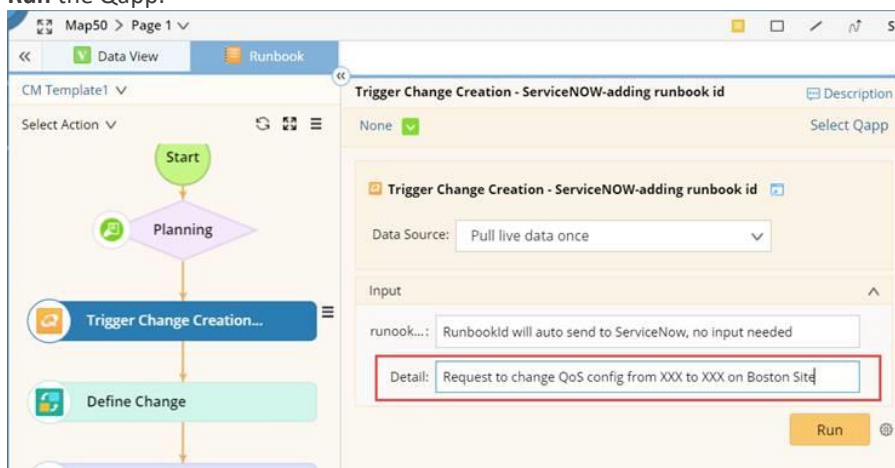


- Click plus sign at the first node of Runbook
- Select **Run Qapp** and navigate to **Trigger Change Creation - ServiceNOW.xapp**



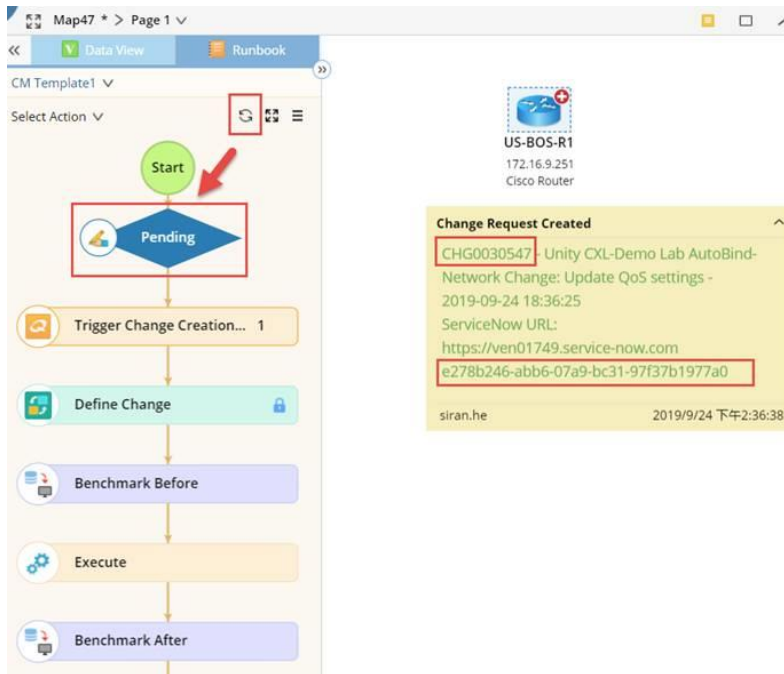
Step 3: NetBrain user run the Qapp to create a new Change ticket in ServiceNow

- Adding change detail information in **Detail** before running this Qapp
- **Run** the Qapp.



Step 4: NetBrain user check ticket number and Runbook status

- Check map note to get ticket number and related detail information
- Click Refresh button to check Runbook binding status, it will be changed from **Planning** to **Pending**



Update Change Request Status from ServiceNow to NetBrain

Step 1: ServiceNow user review ticket detail and make decision.

The screenshot shows the ServiceNow Change Request detail page for CHG0030547. The page includes various fields for request details and a dropdown menu for the Approval status.

Change Request - CHG0030547

Number: CHG0030547

Requested by: zheng xiang

Category: Other

Configuration item: US-BOS-R1

Priority: 4 - Low

Risk: Moderate

Impact: 3 - Low

NetBrain CM ID: e278b246-abb6-07a9-bc31-97f37b1

Short description: Unity CXL-Demo Lab AutoBind- Network Change: Update QoS settings

Description: Request to change QoS config from XXX to XXX on Boston Site

Approval: Requested (dropdown menu)

Type: Not Yet Requested

State: Requested

Conflict status: Not Run

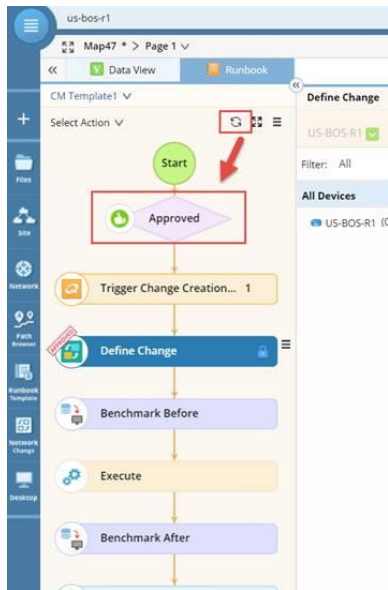
Conflict last run:

Assignment group: NOC Tier 2 Team

Assigned to:

Step 2: NetBrain user check ticket status in NetBrain and process to next step.

- Click Refresh button to check request status.



Customization in ServiceNow

Add one field in Change Request form, and name as “NetBrain CM ID”. The identifier for the field is ‘u_netbrain_cm_id’.

Change Request - CHG0030218

Number	<input type="text" value="CHG0030218"/>		
Requested by	<input type="text" value="Nick Liu"/>	<input type="button" value="Q"/>	<input type="button" value="i"/>
Category	<input type="text" value="Other"/>		
Configuration item	<input type="text" value="US-BOS-R1"/>	<input type="button" value="Q"/>	<input type="button" value="i"/> <input type="button" value="d"/>
Priority	<input type="text" value="4 - Low"/>		
Risk	<input type="text" value="Moderate"/>		
Impact	<input type="text" value="3 - Low"/>		
NetBrain CM ID	<input type="text" value="cab38624-f584-f22a-b55b-c016c13f5a04"/>		

Steps:

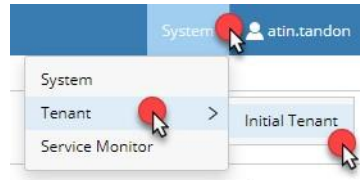
1. Navigate to change request table.
2. Right-click the form header and select the appropriate option for your version:
 - Configure > Form Layout
3. In the Create new field section, fill in the following fields:
 - Name: Enter the name of the field – NetBrain CM ID
 - Database column name: Enter the database name for the field - u_netbrain_cm_id
 - Type: Select to “string”
 - Field length: Select a field length. This field is visible only for certain field types.
4. Click Add.
5. Click Save.

NetBrain parameters to note before updating script

1. NetBrain URL
2. Username
3. Password
4. Tenant ID

To find the tenant ID

- a) Login to the admin page at [http\(s\)://<netbrain server>/admin.html](http(s)://<netbrain server>/admin.html)
- b) Navigate to the desired tenant management page like following



- c) Note the tenantID from the URL

<https://integrationlabv71.netbraintech.com/admin.html#/tenantAdmin/a39cf019-9663-1437-5d12-746cb85e5ea0>

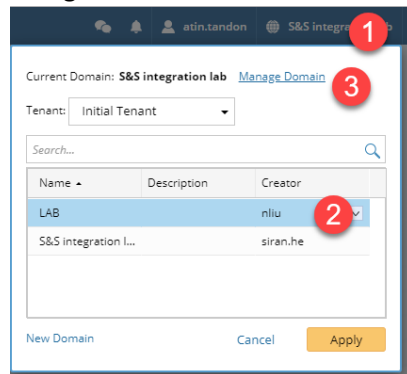
Tip: This info can be retrieved from REST APIs as well.

<https://github.com/NetBrainAPI/North-Bound-API/blob/master/REST%20APIs%20Documentation/Authentication%20and%20Authorization/Get%20All%20Accessible%20Tenants%20API.md>

5. Domain ID

To find the domain ID

- Log in to the desktop page at [http\(s\)://<netbrain server>/desktop.html](http(s)://<netbrain server>/desktop.html)
- Navigate to the desired domain management page like following



- c) Note the domainID from the URL

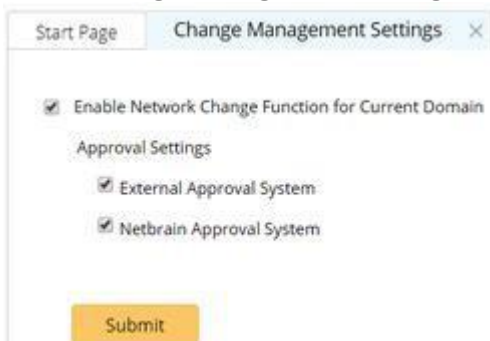
<https://integrationlabv71.netbraintech.com/domainAdmin.html#/domainAdmin/5afeceaf-5c71-4e7d-813e-3a98ee5436f9>

Tip: This info can be retrieved from REST APIs as well.

<https://github.com/NetBrainAPI/North-Bound-API/blob/master/REST%20APIs%20Documentation/Authentication%20and%20Authorization/Get%20All%20Accessible%20Domains%20API.md>

Enable External Authentication in NetBrain

- [Log into Domain Management page](#)
- In the Domain Management page, click **Operations > Domain Maintenance > Change Management Settings** from the quick access toolbar.
- On the **Change Management Settings** tab, enable the approval method you want to use.



4. Click **Submit**.

Business rules' functionality

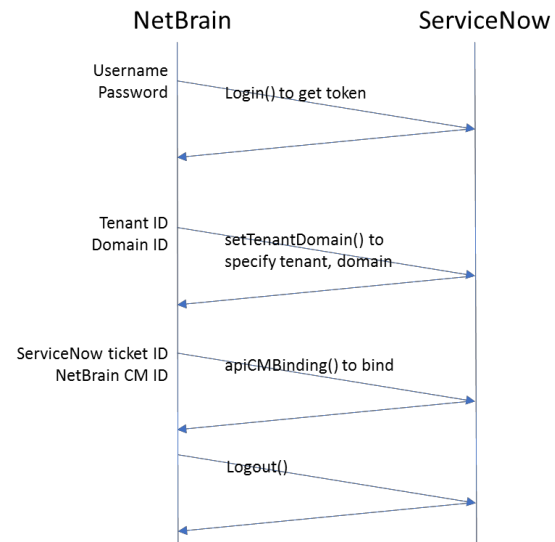
The following major steps describe a general flow:

1. Add business rule to bind NetBrain Runbook

This business rule handles step 1 in the workflow:

Step 1: Requester binds the NetBrain Change Management ID with the ServiceNow Change Request

The following 4 API calls are called in the business rule.



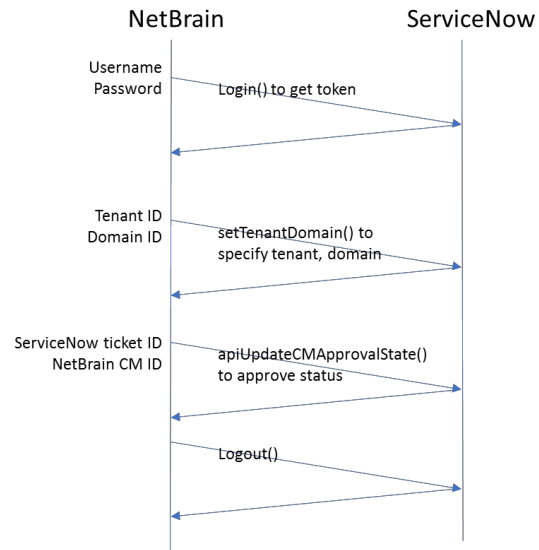
2. Add business rule to approve the process

This business rule handles step 1 in the workflow:

Step 2: Requester changes ServiceNow's Change Request status from "Non requested" to "Requested"

Step 3: Approver changes ServiceNow's Change Request status to "Approved"

The following 4 API calls are called in the business rule.



API specific documentation can be found here:

1. Login

<https://github.com/NetBrainAPI/North-Bound-API/blob/master/REST%20APIs%20Documentation/Authentication%20and%20Authorization/Login%20API.md>

2. Logout
<https://github.com/NetBrainAPI/North-Bound-API/blob/master/REST%20APIs%20Documentation/Authentication%20and%20Authorization/Logout%20API.md>
3. Specify tenant and domain
<https://github.com/NetBrainAPI/North-Bound-API/blob/master/REST%20APIs%20Documentation/Authentication%20and%20Authorization/Specify%20A%20Working%20Domain%20API.md>
4. Bind CM runbook
<https://github.com/NetBrainAPI/North-Bound-API/blob/master/REST%20APIs%20Documentation/Change%20Management/Change%20Management%20Approval%20Process%20API%20Design%20--%20Binding%20Runbook.md>
5. Change CM runbook state
<https://github.com/NetBrainAPI/North-Bound-API/blob/master/REST%20APIs%20Documentation/Change%20Management/Change%20Management%20Approval%20Process%20API%20Design%20--%20Change%20state.md>

Business Rules configuration

1. Business Rule 1: Binding NetBrain Runbook

Following are the configuration of the business rule:

The screenshot shows the configuration for a business rule named "NetBrain_CM_Binding Demo7". The "Table" is set to "Change Request [change_request]". The "Application" is "Global". The "Active" and "Advanced" checkboxes are checked. Under the "When to run" section, the rule is configured to run "after" the record is updated, with an "Order" of 100. The "Filter Conditions" section shows two conditions: "NetBrain CM ID" is not empty, and "NetBrain CM ID" changes. The "When" dropdown is set to "after", and the "Order" is 100. The "Filter Conditions" section has two conditions: "NetBrain CM ID" is not empty, and "NetBrain CM ID" changes. The "When" dropdown is set to "after", and the "Order" is 100. The "Filter Conditions" section has two conditions: "NetBrain CM ID" is not empty, and "NetBrain CM ID" changes.

Update the attached script (01Change Management - Binding) with following parameters:

- NetBrain server (line 7)
- Username and password (line 15 and 16)
- Tenant and domain ID (line 18)

2. Business Rule 2: Approval of process

Following are the configuration of the business rule:

The screenshot shows the configuration page for a business rule named "NetBrain_CM_Update Demo7". The interface includes a header with navigation icons and an "Update" button. A blue informational banner explains that business rules are server-side scripts that trigger on record events. The main configuration area is divided into sections: "Name" (NetBrain_CM_Update Demo7), "Table" (Change Request [change_request]), "Application" (Global), "Active" (checked), and "Advanced" (checked). The "When to run" section specifies the rule runs "after" an event with an "Order" of 500. It also has checkboxes for "Insert", "Update" (checked), "Delete", and "Query". The "Filter Conditions" section, titled "All of these conditions must be met", contains two conditions: "NetBrain CM ID" is not empty and "Approval" changes, both connected by an "AND" operator. Red boxes highlight the "Table" and "Filter Conditions" sections. Red circles with arrows point to the "Active" and "Update" checkboxes.

Business Rule - NetBrain_CM_Update Demo7

A business rule is a server-side script that runs when a record is displayed, inserted, deleted, or when a table is queried. Use business rules to automatically change values in form fields when the specified conditions are met. [More Info](#)

Name: NetBrain_CM_Update Demo7

Table: Change Request [change_request]

Application: Global

Active: ☒

Advanced: ☒

When to run

Specify whether the business rule should run on Insert or Update. Use Filter Conditions to specify under which conditions the business rule should run.

When: after

Order: 500

Insert: ☐

Update: ☒

Delete: ☐

Query: ☐

Filter Conditions

Add Filter Condition Add "OR" Clause

All of these conditions must be met

NetBrain CM ID	is not empty	AND	OR	X
Approval	changes	AND	OR	X

Update the attached script (02Change Management - Approval) with following parameters:

- NetBrain server (line 7)
- Username and password (line 15 and 16)
- Tenant and domain ID (line 18)