

# ServiceNow Change Management Approval Process

## Contents

Requirements .....	1
Change Management workflow.....	1
Approval Process Integration workflow.....	1
Form Customization in ServiceNow .....	5
NetBrain parameters to note before updating script .....	5
Enable External Authentication in NetBrain .....	6
Business rules' functionality .....	7
Business Rules configuration .....	8

## Requirements

1. NetBrain requirements
  - a. We have credentials of NetBrain, and know which domain and tenant is in use.
  - b. ServiceNow instance should be able to reach out to NetBrain server (no firewall)
2. ServiceNow requirements
  - a. We have to create custom field in "Change Management" form
  - b. We have to configure 2 business rules

## Change Management workflow

To understand the use case of the NetBrain Change management workflow, please refer below. This document concerns a portion of the Change management workflow – the approval process.

<https://www.netbraintech.com/docs/ie80/help/index.html?manage-network-change.htm>

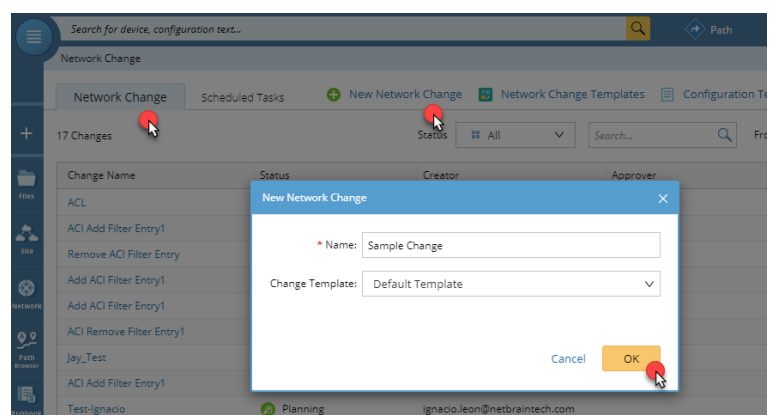
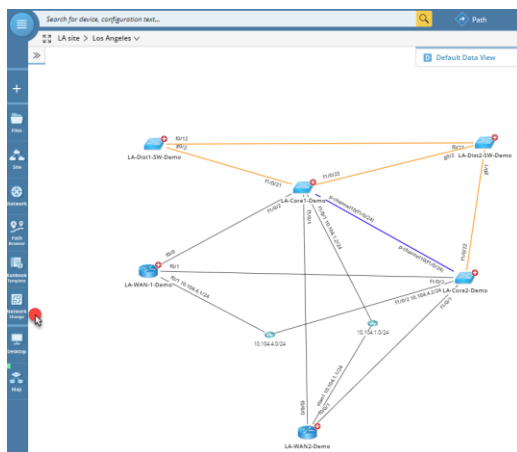
## Approval Process Integration workflow

### Step 0: Requester creates Change Management runbook

Click **Network Change** on the taskbar.

In the **Network Change** pane, click **New Change**.

In the **New Network Change** dialog, enter the task name, select a template and click **OK**.



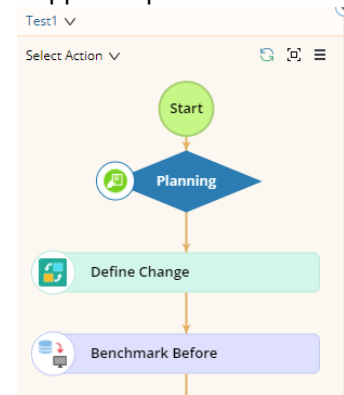
In the runbook pane, you can define the network change task node by node in the runbook. More

details on that can be found here:

<https://www.netbraintech.com/docs/ie80/help/index.html#create-network-change.htm>

The approval node in the runbook is shown in this figure as “planning”. As the approval process proceeds, the status is updated in this node.

The user cannot push changes to devices until the status is “approved”.



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

Requester copies the ID, pastes it in the ServiceNow field, and update the form.

The screenshot shows the 'Approval' tab of a 'Change Request - CHG0030218'. The 'Approval System' is set to 'External'. A message states: 'Please create a ticket on external system and link the ticket to this Network Change ID.' followed by the ID 'cab38624-f584-f22a-b55b-c016c13f5a04' with a 'Copy' button. Below this, the 'NetBrain CM ID' field is populated with the same ID and is highlighted with a red box. A context menu is open over the 'Copy' button, showing options like 'Save', 'Add to Visual Task Board', 'Close Change', etc. The form also includes fields for 'Number', 'Requested by', 'Category', 'Configuration Item', 'Priority', 'Risk', 'Impact', 'Short description', and 'Description'.

When the binding is successful, you see the following log in NetBrain.

The screenshot shows the NetBrain interface for a change request. On the left, a workflow diagram shows the process from 'Start' to 'Planning' (a decision diamond), then to 'Define Change', and finally to 'Benchmark Before'. The 'Approval' section on the right shows the 'Approval System' set to 'External' and the 'Status' as 'Planning'. The 'External Approval Ticket ID' is CHG0030218. A log table shows a 'Ticket Linked' event with the comment 'Linked to Ticket CHG0030218 on ServiceNow' by user 'nb\_cxl' on 07/26/2019 at 10:24 AM.

Status	Comment	By	Date
Ticket Linked	Linked to Ticket CHG0030218 on ServiceNow	nb_cxl	07/26/2019 10:24 AM

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

The screenshot shows the 'Change Request - CHG0030218' details in NetBrain. The 'Number' is CHG0030218, requested by 'Nick Liu', category 'Other', configuration item 'US-BOS-R1', priority '4 - Low', risk 'Moderate', impact '3 - Low', and NetBrain CM ID 'cab38624-f584-f22a-b55b-c016c13f5a04'. The 'Short description' is 'demo8 - Network Change: Update QoS settings'. The 'Description' is a URL. The 'Approval' dropdown is set to 'Requested'. Other fields include 'Type' (Comprehensive), 'State' (Open), 'Conflict status' (Not Run), 'Conflict last run', 'Assignment group' (NOC Tier 1 Team), and 'Assigned to' (Chris Lopez).

When the status update is successful, you see the following log in NetBrain.

The screenshot shows the NetBrain interface for a change request. On the left, a workflow diagram shows the process from 'Start' to 'Pending' (a decision diamond), then to 'Define Change', and finally to 'Benchmark Before'. The 'Approval' section on the right shows the 'Approval System' set to 'External' and the 'Status' as 'Pending'. The 'External Approval Ticket ID' is CHG0030218. A log table shows a 'Pending' event with the comment 'Status updated via ServiceNow' by user 'nb\_cxl' on 07/26/2019 at 10:26 AM.

Status	Comment	By	Date
Ticket Linked	Linked to Ticket CHG0030218 on ServiceNow	nb_cxl	07/26/2019 10:24 AM
Pending	Status updated via ServiceNow	nb_cxl	07/26/2019 10:26 AM

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

Change Request - CHG0030218

Number

CHG0030218

Requested by

Nick Liu

Category

Other

Configuration Item

US-BOS-R1

Priority

4 - Low

Risk

Moderate

Impact

3 - Low

NetBrain CM ID

cab38624-f584-f22a-b55b-c016c13f5a04

Short description

demo8 - Network Change: Update QoS settings

Description

http://unity.netbraintech.com/map.html?i=ee9ed2ec-7e47-d1a7-b40e-b48a8ae9a9da&d=2cabb1df-ddc0-44bc-8872-a761bb309225&id=45606cce-dd7e-4462-a305-e4f29ab51c14&maptype=1&rba=1636264e-a7d4-4cce-adaf-30296865e2ec

Approval

Approved

Type

Comprehensive

State

Open

Conflict status

Not Run

Conflict last run

Assignment group

NOC Tier 1 Team

Assigned to

Chris Lopez

When the status update is successful, you see the following log in NetBrain.

Test1

Select Action

Start

Approved

Define Change

Benchmark Before

Approval

Approval System: External NetBrain

Status: Approved External Approval Ticket ID: CHG0030218 cab38624-f584-f22a-b55b-c016c13f5a04 Copy

Status	Comment	By	Date
Ticket Linked	Linked to Ticket CHG0030218 on ServiceNow	nb_cxl	07/26/2019 10:24 AM
Pending	Status updated via ServiceNow	nb_cxl	07/26/2019 10:26 AM
Approved	Status updated via ServiceNow	nb_cxl	07/26/2019 10:27 AM

## Form Customization in ServiceNow

A field has to be added to the Change Request form called “NetBrain CM ID”.

The identifier for the field is ‘u\_netbrain\_cm\_id’.

Change Request - CHG0030218

Number: CHG0030218

Requested by: Nick Liu

Category: Other

Configuration item: US-BOS-R1

Priority: 4 - Low

Risk: Moderate

Impact: 3 - Low

**NetBrain CM ID**: cab38624-f584-f22a-b55b-c016c13f5a04

Steps:

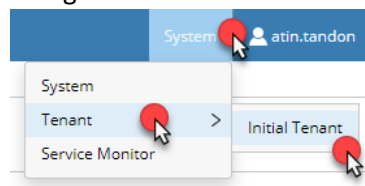
1. Navigate to change request table.
2. Right-click the form header and select the appropriate option for your version:
  - Configure > Form Layout
3. In the Create new field section, fill in the following fields:
  - Name: Enter the name of the field – NetBrain CM ID
  - Database column name: Enter 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.

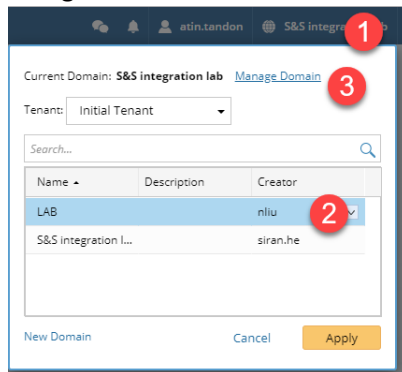
[https://github.com/NetBrainAPI/North-Bound-](https://github.com/NetBrainAPI/North-Bound-API/blob/master/REST%20APIs%20Documentation/Authentication%20and%20Authorization/Get%20All%20Accessible%20Tenants%20API.md)

[API/blob/master/REST%20APIs%20Documentation/Authentication%20and%20Authorization/Get%20All%20Accessible%20Tenants%20API.md](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>

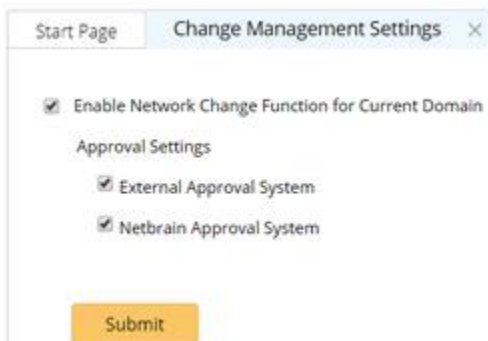
Tip: This info can be retrieved from REST APIs as well.

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

[API/blob/master/REST%20APIs%20Documentation/Authentication%20and%20Authorization/Get%20All%20Accessible%20Domains%20API.md](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

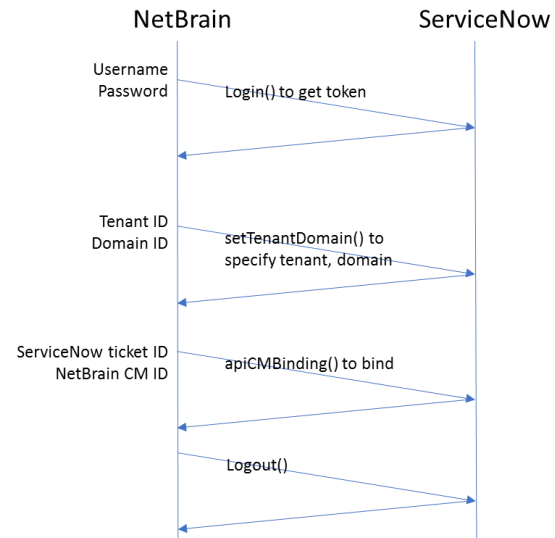
The following major steps describe a general flow:

### 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.



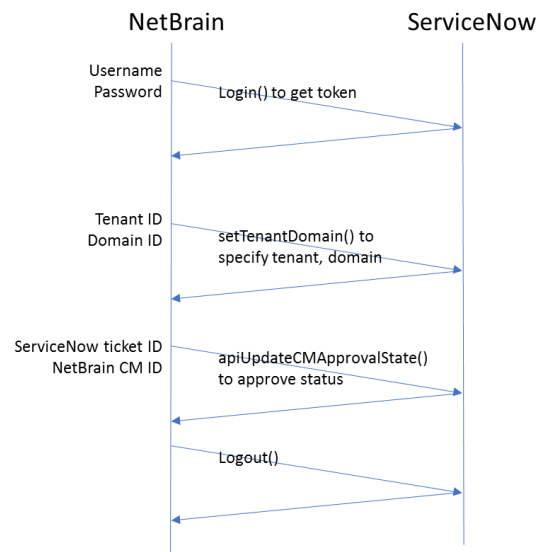
### 2. Add business rule to approve the process

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 interface includes the following sections:

- General Information:**
  - Name: NetBrain\_CM\_Binding Demo7
  - Table: Change Request [change\_request] (highlighted with a red box)
  - Application: Global
  - Active: ☒ (with a red mouse cursor icon)
  - Advanced: ☒ (with a red mouse cursor icon)
- When to run:**
  - When: after
  - Order: 100
  - Triggers: Insert ☒ (with a red mouse cursor icon), Update ☒ (with a red mouse cursor icon), Delete ☐, Query ☐
- Filter Conditions:**
  - Buttons: Add Filter Condition, Add "OR" Clause
  - Logic: All of these conditions must be met
  - Conditions (highlighted with a red box):
    - NetBrain CM ID is not empty AND OR X
    - NetBrain CM ID changes AND OR X

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 a business rule is a server-side script that runs when a record is displayed, inserted, deleted, or when a table is queried. The configuration is divided into several sections:

- General Settings:**
  - Name:** NetBrain\_CM\_Update Demo7
  - Table:** Change Request [change\_request] (highlighted with a red box)
  - Application:** Global
  - Active:** ☒ (with a red circle and mouse cursor)
  - Advanced:** ☒ (with a red circle and mouse cursor)
- When to run:**
  - When:** after
  - Order:** 500
  - Events:** Insert ☐, Update ☒ (with a red circle and mouse cursor), Delete ☐, Query ☐
- Filter Conditions:**
  - Buttons: "Add Filter Condition" and "Add 'OR' Clause"
  - Text: "All of these conditions must be met"
  - Conditions (highlighted with a red box):
    - NetBrain CM ID is not empty
    - Approval changes

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)