



# Maîtrisez les templates Catalyst Center

community.cisco.com en français

Jerome Durand - Technical Solutions Architect

<https://gblogs.cisco.com/fr/reseaux/>

14 mai 2024



# Connectez, Engagez, Collaborez !

## Solutions

Acceptez les solutions qui sont correctes et complimentez ceux qui vous ont aidé ! Aidez autres utilisateurs à trouver les réponses correctes dans la fenêtre de recherche.

Accepter comme solution

## Compliments

Mettez en évidence les autres membres. Les votes utiles motivent les membres enthousiastes en leur offrant un signe de reconnaissance !



0 Compliments

# Prix Spotlight Awards

De nouveaux lauréats tous les mois !

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Rencontrez les gagnants de [novembre-janvier 2024](#)

Vous pouvez désormais également proposer un candidat !  
[Cliquez ici](#)



# Notre expert

## Jérôme Durand



Technical Solutions Architect

Jérôme a intégré le GIP RENATER en 2002, d'abord sur des projets R&D puis comme responsable des opérations en 2006, et enfin en charge de l'équipe services en 2009.

Jérôme a rejoint CISCO en 2011 comme expert sur les technologies de routage et commutation. Actuellement, il est très impliqué sur la programmation et l'automatisation des réseaux et notamment les solutions SD-WAN et SD-Access. Il est aussi auteur du RFC 7454 - BGP Operations and Security.



- Accompagnement des clients et partenaires sur Campus sur les projets Catalyst Campus et SD-WAN
- Evangéliste, Blogueur et Youtubeur
- Il a commencé l'aventure SD-Access depuis le tout début
- RFC 7454 - BGP Security BCP (et quelques Internet drafts...)

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 Passcode: **smzgdn**



# We all love Catalyst Center workflows !

<b>1.6</b> <b>Configure Cisco UDN</b> Configure Cisco User Defined Network which enables users to define their own personal network as a shared Wireless network. <b>Wireless</b>	<b>1.6</b> <b>Site to Site VPN</b> Create VPN configuration between two sites. <b>Wired</b>	<b>1.6</b> <b>Umbrella Deployment</b> Configure Cisco Umbrella on network elements, which send DNS queries for Umbrella to enforce security/content policies. <b>Wireless</b> <b>Wired</b>	<b>1.6</b> <b>Create Layer 3 Virtual Networks.</b> Create Layer 3 network overlays for segmenting routed traffic.	<b>1.6</b> <b>Create Layer 2 Virtual Networks</b> Create Layer 2 network overlays for segmenting switched traffic.	<b>1.6</b> <b>Create Fabric Sites and Fabric Zones</b> Scope a single SD-Access fabric which comprises at least one Border node, Control Plane node and Fabric Edge node.
<b>1.6</b> <b>Create Anycast Gateways</b> For each IP Pool, create an Anycast Gateway across Fabric Edge nodes.	<b>1.6</b> <b>Create a Port Channel</b> Create a Port Channel step by step.	<b>1.6</b> <b>Configure Multicast</b> Configure a Cisco SD-Access fabric site to support multicast routing in Layer 3 Virtual Networks.	<b>1.6</b> <b>Configure REP Ring (Fabric)</b> Configure a REP Ring to enable redundancy on the Extended Isides.	<b>1.6</b> <b>Configure REP Ring (Non-Fabric)</b> Configure a REP Ring to enable redundancy on the Extended Isides.	<b>1.6</b> <b>Telemetry Appliance Setup</b> Configure Switch Port Analyzer (SPAN) and Encapsulated Remote Switch Port Analyzer (ERSPAN) sessions to share IP traffic for application assurance and endpoint analytics. <b>Wired</b>
<b>1.6</b> <b>Create Sensor Test</b> Build a wireless test template for monitoring near-wireless Client experiences. <b>Wireless</b>	<b>1.6</b> <b>Replace Device</b> Replace your device in a few quick easy steps. <b>Wired</b> <b>Wireless</b>	<b>1.6</b> <b>Access Point Refresh</b> Replace Your Access Points with New ones. <b>Wireless</b>	<b>1.6</b> <b>Create a Remote Support Authorization</b> Start the Cisco specialized temporary access to Cisco DNA Center to stage the managed network. All events will be logged during the access. <b>Wired</b> <b>Wireless</b>	<b>1.6</b> <b>Smart License Compliance</b> Explore capabilities for Smart License Enabled devices.	<b>1.6</b> <b>Create a User Role</b> Create a custom role that fits your organizational needs.
<b>1.6</b> <b>Enable IoT Services</b> Deploy IoT apps like Zigbee, BLE on Access Points. <b>Wireless</b>	<b>1.6</b> <b>Configure Access Points</b> Configure AP and Radio Parameters. <b>Wireless</b>	<b>1.6</b> <b>Configure RLAN</b> Configure Remote LAN Ports on Access Points. <b>Wireless</b>	<b>1.6</b> <b>Configure AI RF Profile</b> Configure AI enabled features for RF Profiles. <b>Wireless</b>	<b>1.6</b> <b>Enable Apps on Switches</b> Deploy docker apps such as ThousandEyes, iPerf on switches. <b>Wired</b>	<b>1.6</b> <b>Learn Device Configuration (BETA)</b> Learn working configurations from a WLC to create reusable design entries in Cisco DNA Center. <b>Wireless</b>
<b>1.6</b> <b>Create Extranet Policy</b> Setting an Extranet Policy to allow access between virtual networks.	<b>1.6</b> <b>Provision Template</b> Provision templates directly to devices. <b>Wired</b> <b>Wireless</b>	<b>1.6</b> <b>Create Allowed AP List</b> This workflow is for security / network admin to process bulk update of allowed list of selected rogue access point MAC address. <b>Wireless</b>	<b>1.6</b> <b>Create Allowed Vendor List</b> Create a list of allowed vendors, so that Rogue Threats from these vendors are not marked as High Threats. <b>Wireless</b>	<b>1.6</b> <b>Create a Rogue Rule</b> This workflow is for creating custom rogue rule. <b>Wireless</b> 2 Dependent Workflows	<b>1.6</b> <b>Create Rogue Rule Profile</b> This workflow is for creating a Rogue Rule Profile. <b>Wireless</b> 2 Dependent Workflows
<b>1.6</b> <b>Create an aWIPS Profile</b> This workflow is for security / network admin to create an aWIPS Profiles. <b>Wireless</b> 2 Dependent Workflows	<b>1.6</b> <b>Assign an aWIPS Profile</b> This workflow is for security / network admin to assign an aWIPS Profiles to Devices. <b>Wireless</b> 2 Dependent Workflows	<b>1.6</b> <b>Discover Devices</b> Discover devices, assign them to a site, and gather telemetry to monitor the health of your network.	<b>1.6</b> <b>Create IP &amp; URL-Based Access Control Policy</b> Create IP-based and/or URL-based post-auth access control list for your network. <b>Wireless</b>	<b>1.6</b> <b>Add Link</b> LAN Automation - Add Link	<b>1.6</b> <b>Delete Link</b> LAN Automation - Delete Link
<b>1.6</b> <b>Endpoint Registration</b> Manually register and profile endpoints in AI Endpoint Analytics.	<b>1.6</b> <b>Generating a New Report</b> Configure and schedule a report.	<b>1.6</b> <b>Create a New Notification</b> Pick how you want to be notified about things that happen in your Cisco DNA Center.	<b>1.6</b> <b>Flexible Report</b> Configure and schedule a flexible report.		

# Agenda

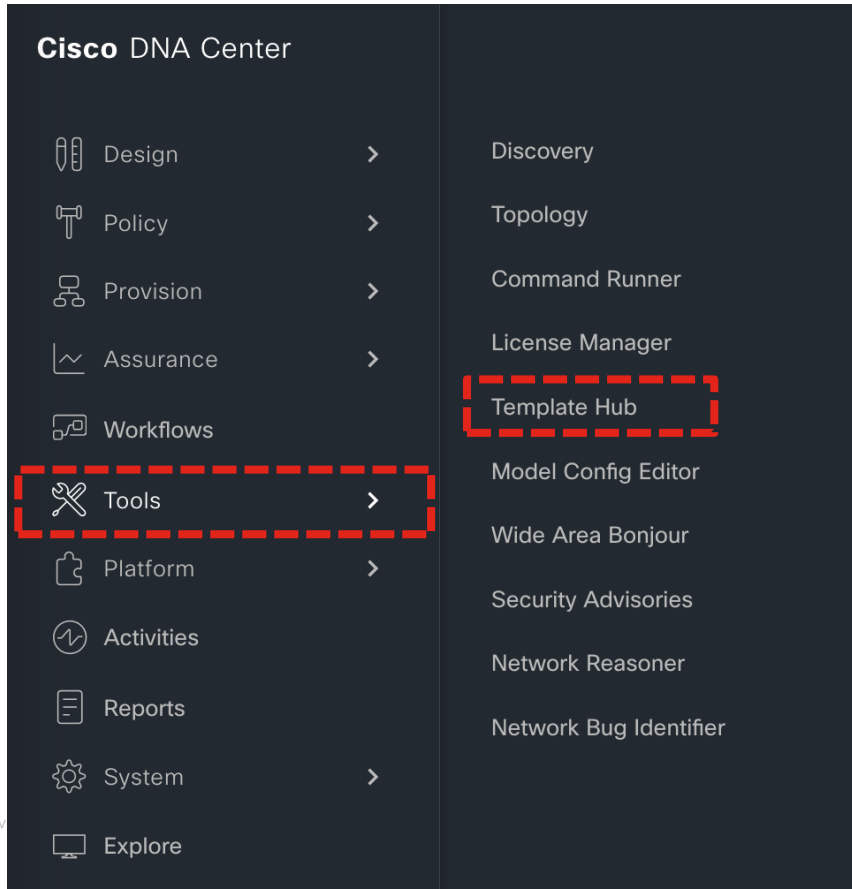
- Templates Basics
- Variables
- Advanced use cases
- Compliance
- API and integrations
- Plug and Play



DEMOS

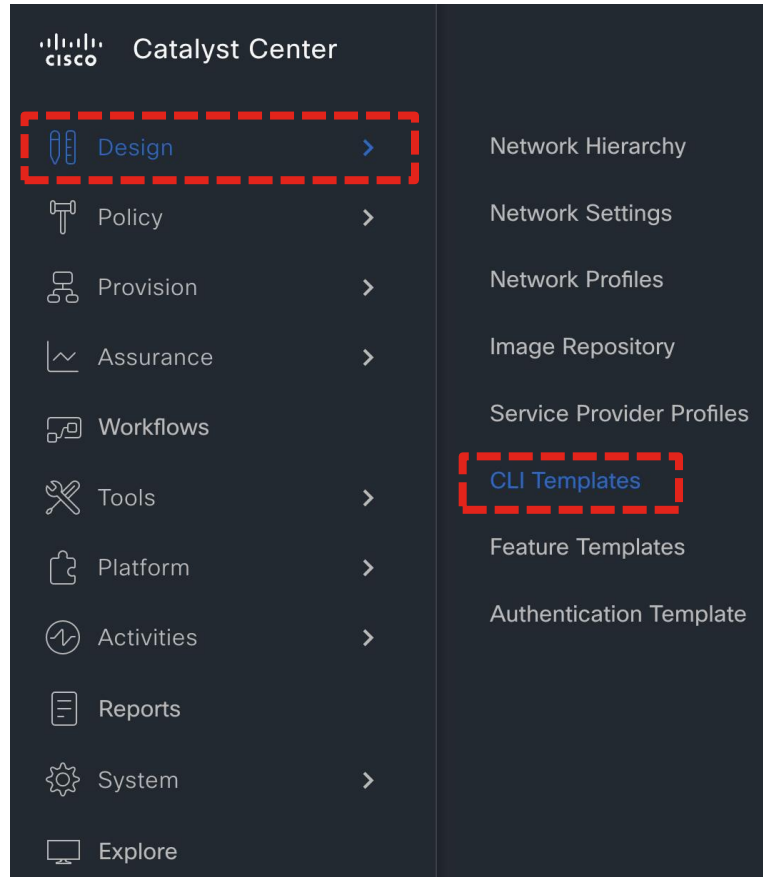
# Template Basics

# Catalyst Center Tools - Template Hub (2.3.5)

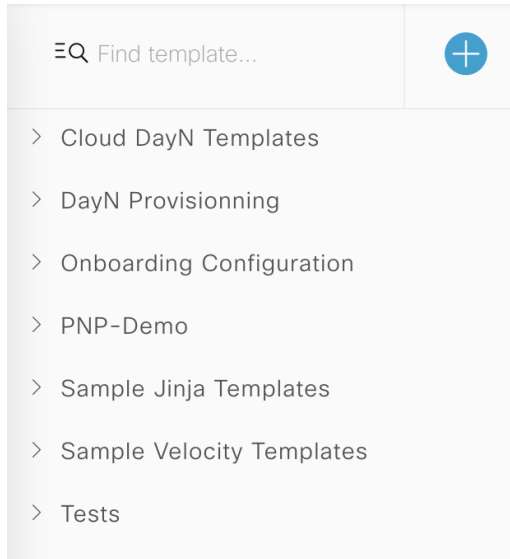




# Catalyst Center Tools – CLI Templates (2.3.7)

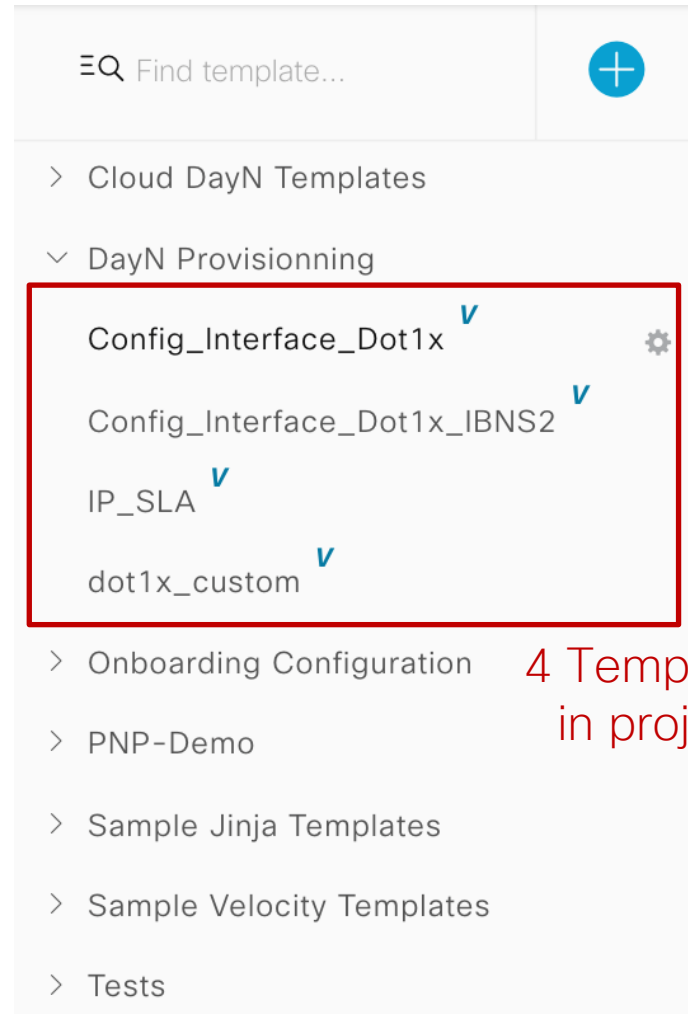
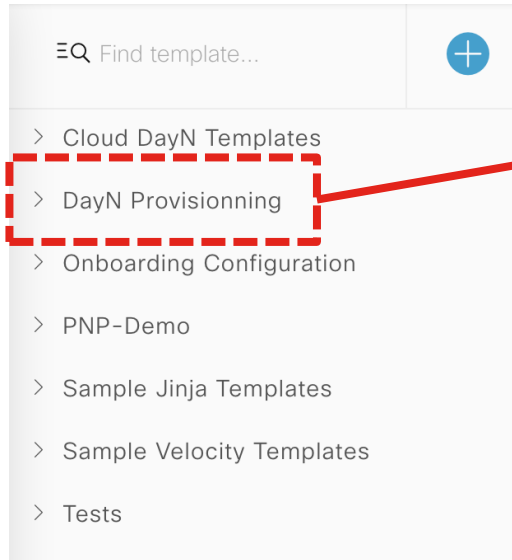


# Projects and templates



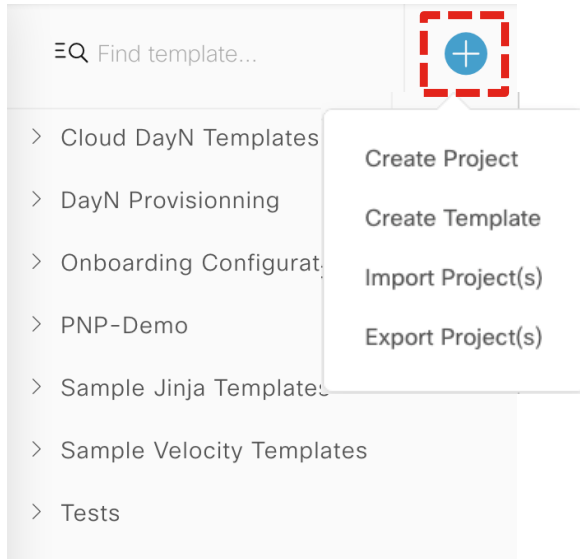
Projects are templates « directories »

# Projects and templates



4 Templates  
in project

# Projects and templates



Create your own projects

Create your own templates

# Add New Template

## Template Details

Define the properties for the template.

Template Name\*

Project Name\*

Template Type

Regular Template  Composite Sequence

Template Language

JINJA  VELOCITY

Software Type\*

## Device Type Details

Add the types of devices you want to associate with the template

DEVICE DETAILS\*

[Add Device Details](#)

Device Family

Devices

## Additional Details

Device Tags

Device Tags

Software Version

Template Description

[Add New Template](#) / [Add Device Details](#)

## Add Device Details

Device Family\*

Switches and Hubs

9300

Type

Device Series

Device Models

Device

Cisco Catalyst 9300 Series Switches

Cisco Catalyst IE9300 Rugged Series

# Templates at a glance

Line vty ×

Actions ▾ | Edit ▾ | Properties

Template

```
1 line vty 0 4
2 transport input ssh
```

Type your CLI here

## Actions ▾

Show history

Save

Commit

Clone

Export

Commit to validate and track changes

Commit

Commit Note


First version

# Template history

## Template History



Search

>  Latest Content  
Author: admin

▼  Version 4  
Author: admin | 29 April 2024, 10:30 PM

Improve security

Compare

View

>  Version 3  
Author: admin | 29 April 2024, 10:29 PM

>  Version 2  
Author: admin | 29 April 2024, 10:29 PM

>  Version 1  
Author: admin | 29 April 2024, 10:29 PM

# Compare template versions

Template Hub / Port-config (1) Properties

Templates Variables Simulation Provision Conflicts

(x) System Variables Assistant Template History Attach to Network Profile  Show Design Conflicts ⓘ

Version 1 - 29 April 2024, 10...  EQ Search Save as latest Clone Export Local

<pre>1 vlan {{ vlan_number }} 2   name {{ vlan_name }} 3 4 {% for interface in interfaces %} 5 int {{ interface }} 6   switchport mode access 7   switchport access vlan {{ vlan_number }} 8 {% endfor %} 9</pre>	<pre>1 vlan {{ vlan_number }} 2   name {{ vlan_name }} 3 4 {% for interface in interfaces %} 5 int {{ interface }} 6   switchport mode access 7   switchport access vlan 12 8 {% endfor %} 9</pre>
---	--



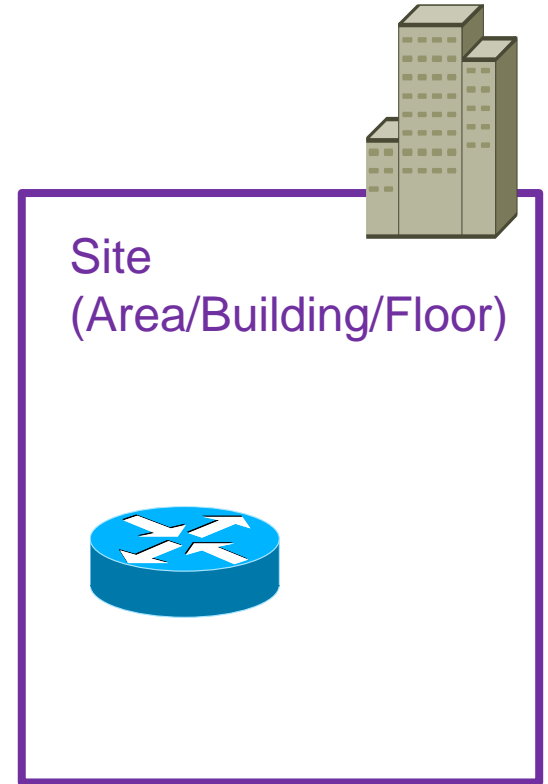
# Apply a template to a device

Template	
1	line vty 0 4
2	transport input ssh



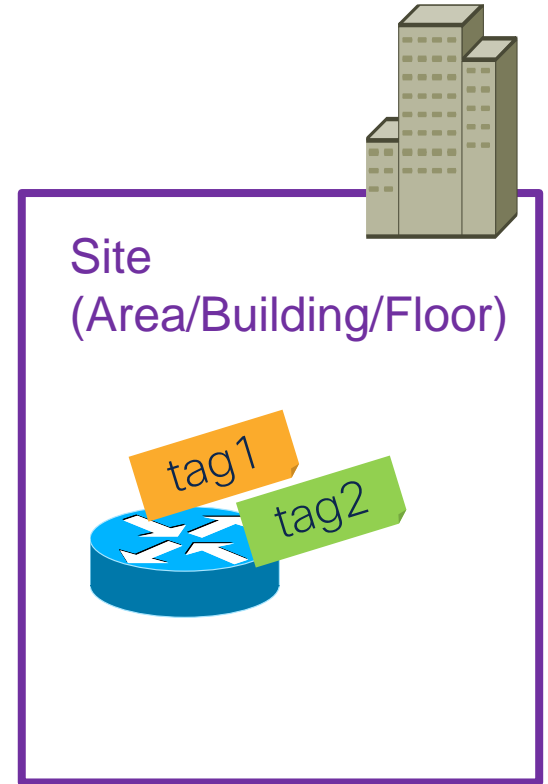
# Apply a template to a device

Template	
1	line vty 0 4
2	transport input ssh

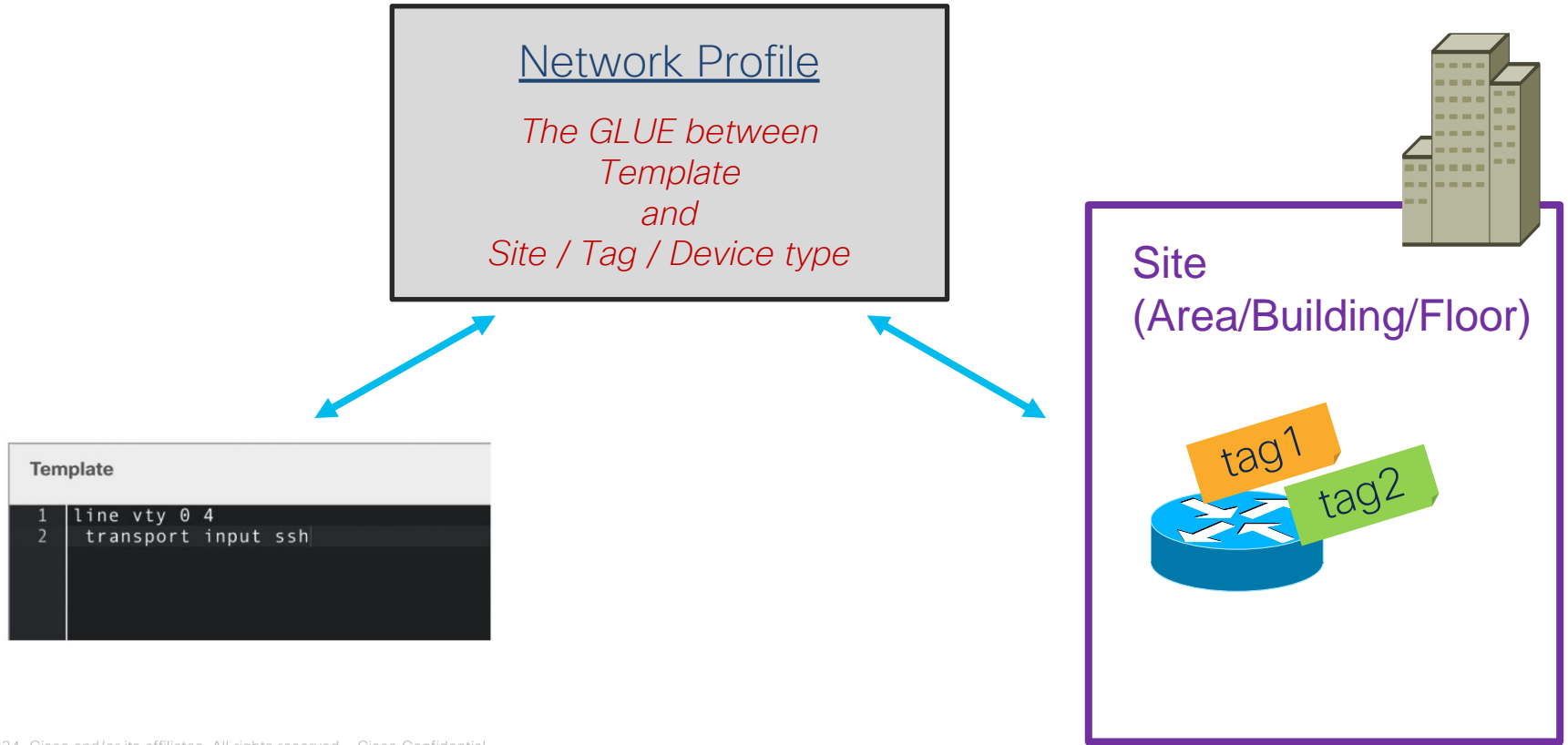


# Apply a template to a device

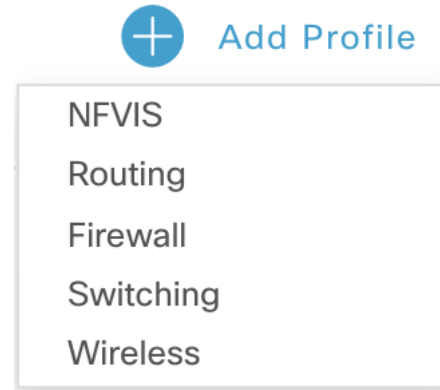
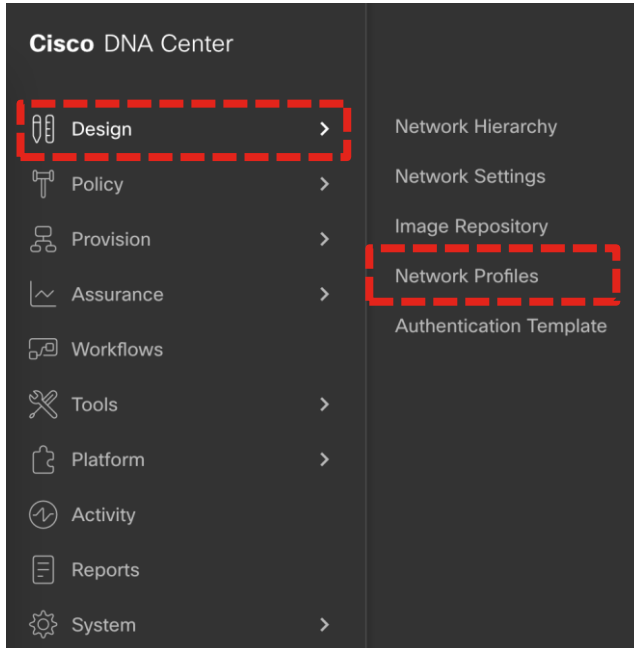
Template	
1	line vty 0 4
2	transport input ssh



# Apply a template to a device



# Create network profile



# Define network profile

Network Profiles > Switching

Specify:

- Device Type
- Tags (if any)
- Select among the corresponding template

Profile Name  
SWITCHTEST

Profile Type  
switching

## Edit Network Profile

Templates are created in the [Template Editor](#)

OnBoarding Template(s)

Day-N Template(s)

## Attach Template(s)



 Add

Device Type

Device Tag 

Template

Switches and  
Hubs


test  

Line vty 

Edit

Remove

# Associate network profile with sites

Profile Name 	Type	Sites	Action
ILM-PROFILE	switching	3 Sites	<a href="#">Edit</a>   <a href="#">Delete</a>
Italy profile	switching	3 Sites	<a href="#">Edit</a>   <a href="#">Delete</a>
Madrid-Wireless	Wireless	3 Sites	<a href="#">Edit</a>   <a href="#">Delete</a>
Router	Routing	3 Sites	<a href="#">Edit</a>   <a href="#">Delete</a>
SDA-BOULOGNE-PROFILE	Wireless	2 Sites	<a href="#">Edit</a>   <a href="#">Delete</a>
SDA-ILM-PROFILE	Wireless	3 Sites	<a href="#">Edit</a>   <a href="#">Delete</a>
SWITCH-PNP-BCN	switching	3 Sites	<a href="#">Edit</a>   <a href="#">Delete</a>
SWITCHTEST	switching	<a href="#">Assign Site</a>	<a href="#">Edit</a>   <a href="#">Delete</a>

# Associate network profile with sites

Profile Name ▲	Type	Sites	Action
ILM-PROFILE	switching	3 Sites	<a href="#">Edit</a>   <a href="#">Delete</a>
Italy profile	switching	3 Sites	<a href="#">Edit</a>   <a href="#">Delete</a>
Madrid-Wireless	Wireless	3 Sites	<a href="#">Edit</a>   <a href="#">Delete</a>
Router	Routing	3 Sites	<a href="#">Edit</a>   <a href="#">Delete</a>
SDA-BOULOGNE-PROFILE	Wireless	2 Sites	<a href="#">Edit</a>   <a href="#">Delete</a>
SDA-ILM-PROFILE	Wireless	3 Sites	<a href="#">Edit</a>   <a href="#">Delete</a>
SWITCH-PNP-BCN	switching	3 Sites	<a href="#">Edit</a>   <a href="#">Delete</a>
SWITCHTEST	switching	<a href="#">Assign Site</a>	<a href="#">Edit</a>   <a href="#">Delete</a>

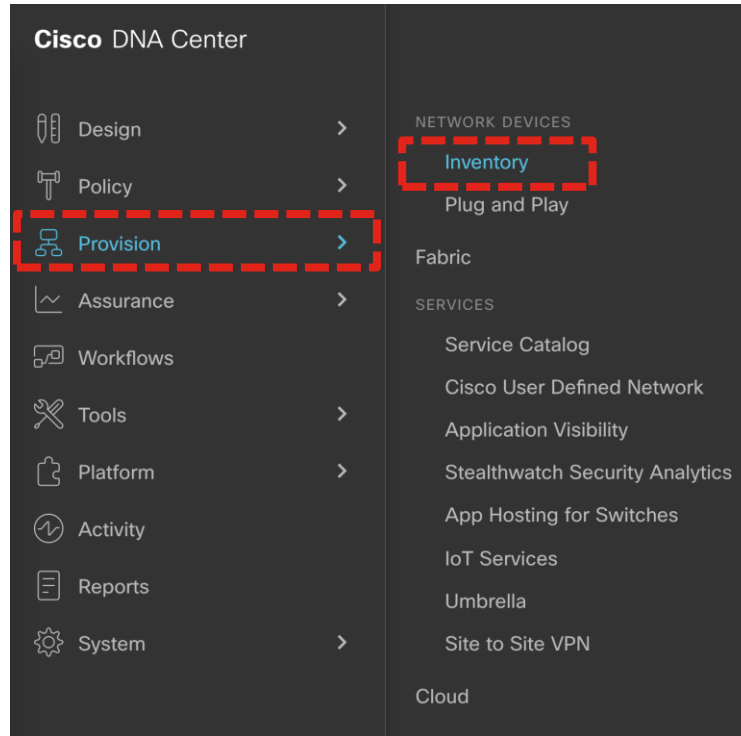
### Add Sites to Profile

- Global (3)
  - AMERICA (2)
  - APAC (3)
- EMEA (6)
  - France (8)
  - Germany
  - Italy (2)
  - Portugal (2)
  - Spain (2)

[Cancel](#) [Save](#)



# Provision devices with template



# Select devices and provision

The screenshot displays the Cisco Inventory management interface. On the left, a navigation pane shows a hierarchy: Global > EMEA > France > Germany. The main area is titled 'Inventory' and 'Plug and Play'. It shows a list of 18 devices, with the focus on 'Inventory'. An 'Actions' dropdown menu is open, highlighting the 'Provision' option. A sub-menu for 'Provision' is also visible, with 'Provision Device' highlighted. The device list includes columns for Device Name, IP Address, Platform, and status (Reachability and Manageability).

Device Name	IP Address	Platform	Reachability	Manageability
SA-AP-1	0.0.0.0	0.0.0.0	Reachable	Managed
SA-AP-2	0.0.0.0	0.0.0.0	Reachable	Managed
SA-Border-1.cisco.com	0.0.0.0	0.0.0.0	Reachable	Managed
SA-Border-2.cisco.com	0.0.0.0	0.0.0.0	Reachable	Managed
SA-Edge-1.cisco.com test	0.0.0.0	0.0.0.0	Reachable	Managed
SA-Edge-2.cisco.com	0.154.17.68	Switches and Hubs (WLC Capable)	Reachable	Managed
SA-Edge-3.cisco.com test	0.154.17.74	Switches and Hubs	Reachable	Managed
SA-Ext-C3560CX-1.cisco.com	10.154.21.166	Switches and Hubs	Reachable	Managed
SA-Ext-IE4000-1.cisco.com	10.154.21.165	Switches and Hubs	Reachable	Managed

# Provisioning step 2

Device is in a site with a Network Profile and a template is defined for device category / tag  
➔ Template is automatically applied

Inventory > Provision Devices

1 Assign Site    2 Advanced Configuration    3 Summary

### Devices

Select devices to fill out provisioning parameters

Find  Show **All** ▾

▾ Line vty (1)

SA-Edge-3.cisco.com

Provision these templates even if they have been deployed before

Copy running config to startup config

### Line vty

No variables found in template

No variables in the template ...  
... Nothing to do !

# Configuration preview

Provision Device



Now

Later

**Generate configuration preview**

Creates preview which can be later used to deploy on selected devices. If Site assignment is invoked during configuration preview, Device controllability configuration will be pushed to corresponding device(s).

Task Name\*

**Provision Device - Configuration preview**

Cancel

Apply

# Configuration preview

PROVISION

## Provision Device - Configuration preview

May 1, 2021 11:16 PM | Status:  Success

Last updated: 11:17:01 PM

### DEVICES

10.154.17.74

### Configuration Preview

Device Name : SA-Edge-3.Cisco.Com

```
line vty 0 4
transport input ssh
```

# Want to change a template ?



Architects design what the network should look like  
Operations roll out changes at the right pace

# Composite template

## Add New Template

Template Type \*

Regular Template  Composite Sequence

Control sequence  
order of templates



Port exceptions ×

Actions ▾ | Properties

## Composite Sequence

Drag and drop templates from the left panel to create your sequence.

1 10M ports  
Tests

2 100M ports  
Tests

3 Half duplex ports  
Tests

4 Full duplex ports  
Tests

5 Description  
Tests

# Audit Logging

The screenshot displays the Cisco DNA Center Audit Logs interface. The top navigation bar shows 'Cisco DNA Center' and 'Activity - Audit Logs'. Below this, there are tabs for 'Audit Logs' and 'Scheduled Tasks'. A filter bar indicates the date range 'By Date: Jul 31, 2019 12:00 am - Jul 31, 2020 12:00 am' with a 'Refresh' button. A timeline at the top shows the date range from 8/1 to 7/1. The main content area is divided into two sections: a list of logs on the left and a detailed view of a selected log on the right.

**Audit Log List (Left Panel):**

Timestamp	Description
Jul 30, 2020 23:43:45.275 (IST)	Successfully committed template Multiple Switch Template to version B7
Jul 30, 2020 23:43:40.512 (IST)	Successfully updated template with name Multiple Switch Template
Jul 30, 2020 23:42:09.215 (IST)	Successfully updated simulation test
Jul 30, 2020 23:41:43.841 (IST)	Successfully updated simulation test
Jul 30, 2020 23:41:18.115 (IST)	Successfully updated simulation test
Jul 30, 2020 23:40:53.589 (IST)	Successfully committed template Multiple Switch Template to version B6
Jul 30, 2020 23:40:47.793 (IST)	Successfully updated template with name Multiple Switch Template
Jul 30, 2020 23:38:15.775 (IST)	Successfully updated template with name Multiple Switch Template
Jul 30, 2020 23:12:42.660 (IST)	Successfully updated template with name Multiple Switch Template
Jul 30, 2020 23:11:42.083 (IST)	Successfully updated template with name Multiple Switch Template
Jul 30, 2020 23:07:59.049 (IST)	The tag members were updated.
Jul 30, 2020 23:07:57.049 (IST)	Successfully updated template with name Demo-Clone
Jul 30, 2020 23:07:46.189 (IST)	Click on view details for the deployment details

**Log Detail View (Right Panel):**

**Log ID:** Jul 30, 2020 23:43:40.512 (IST)

**Description:** Successfully updated template with name Multiple Switch Template

**User:** admin

**Destination:** SYSTEM

**Interface:** API

**templateParams:**

```
{
  "parameterName": "inputsvlIP",
  "rootParam": false,
  "dataType": "IPADDRESS",
  "defaultValue": null,
  "description": null,
  "required": true,
  "displayName": null,
  "instructionText": null,
  "group": null,
  "order": 3,
  "customOrder": 20,
  "selection": [
    "selectionType": "MULTI_SELECT",
    "selectionValues": [
      {
        "id": "3.3.3.3",
        "label": "3.3.3.3",
        "value": "3.3.3.3"
      },
      {
        "id": "8.8.8.8",
        "label": "8.8.8.8",
        "value": "8.8.8.8"
      }
    ]
  },
  "defaultSelectedValues": [],
  "id": "a22ccbd0-770b-40c6-a3cf-5f8718a80b1a",
  "range": [],
  "key": null
}
```

- Audit Logging capturing the modifications made to the Template in detail
- Also provides details on which user did the modification and at what time stamp
- Flexibility to do Time travel to check the logs





Join at  
**slido.com**

**#2194 815**

🔒 Passcode:

**smzgdn**

## Quelle est l'action qui permet de déployer un template sur un équipement ?

a) commit

0%

b) provision

0%

c) deploy

0%




d) audit

0%

Variables

# Use variables in templates

My config \* ×

Actions ▾ | Edit ▾ | Properties | Template System Variables   

**Template**

```
1 hostname {{ hostname }}  
2
```

# Variables details

Input Form

Preview  Custom order

Hostname \*  
**switch**



Maybe that's not a variable !

Data Type (string, integer, IPv4 address, MAC address...)

hostname

Not a variable  Required

Field Name  
**Hostname**

Tooltip Text

Enter host name of device

Default Value  
**switch**

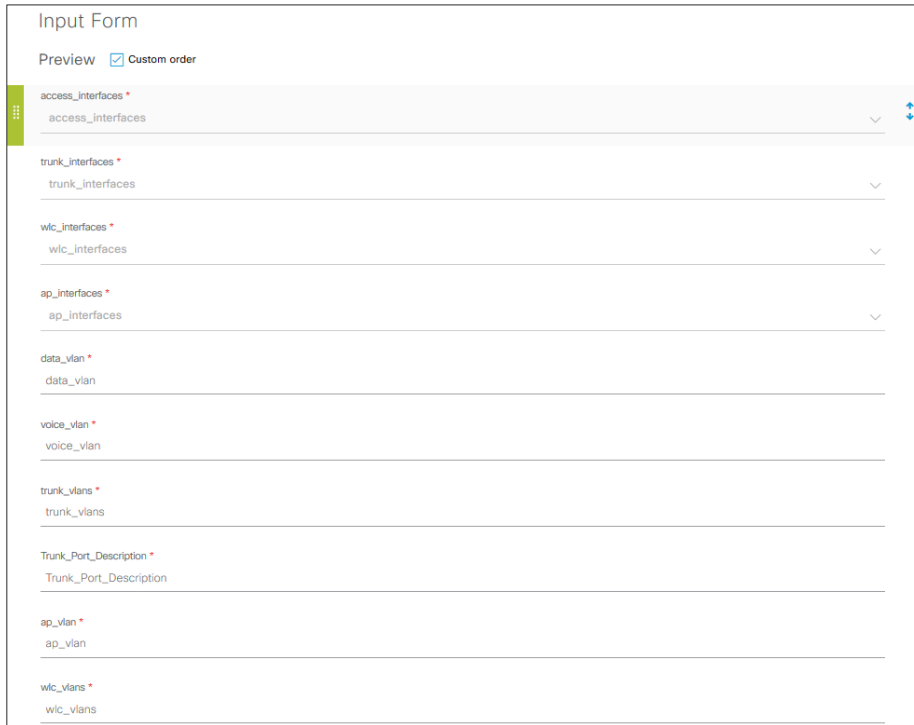
Instructional Text

Maximum Characters

Definition of hostname

Data Type Display Type  
**String** Text Field

# Many variables into a same form






The screenshot shows a web interface titled "Input Form". At the top, there is a "Preview" section with a checked "Custom order" option. Below this, a list of variables is displayed, each with a corresponding form field. The variables and their fields are:

- access\_interfaces \***: access\_interfaces
- trunk\_interfaces \***: trunk\_interfaces
- wlc\_interfaces \***: wlc\_interfaces
- ap\_interfaces \***: ap\_interfaces
- data\_vlan \***: data\_vlan
- voice\_vlan \***: voice\_vlan
- trunk\_vlans \***: trunk\_vlans
- Trunk\_Port\_Description \***: Trunk\_Port\_Description
- ap\_vlan \***: ap\_vlan
- wlc\_vlans \***: wlc\_vlans

Each variable can have different set of form attributes like “Data\_Type”, “FieldName”, “Bind to Source” etc.

# Test your template / form

**My config \*** ×

Actions ▾ | Properties | Template System Variables   

## Simulation Input

Simulation Name \*  
**My simulation**

Hostname \*  
**Hostname-test**

[Reset](#) [Cancel](#) [Save](#) [Run](#)

Template Preview		
1	hostname	Hostname-test

# Provision template with variables

Inventory > Provision Devices

1

Assign Site

2

Advanced Configuration

3

Summary

## Devices

Select devices to fill out provisioning parameters

Find

Show

🔍 Device

All ▾

▾ My config (1)

✔ C9300-PNP-1.cisco.c...

Provision these templates even if they have been deployed before

Copy running config to startup config

Export

Import

## My config

Hostname \*

switch

Enter variables manually

# Import variables

Inventory > Provision Devices

- 1 Assign Site
- 2 Advanced Configuration
- 3 Summary

### Devices

Select devices to fill out provisioning parameters

Find  Show

My config (1)

- ✓ C9300-PNP-1.cisco.c...

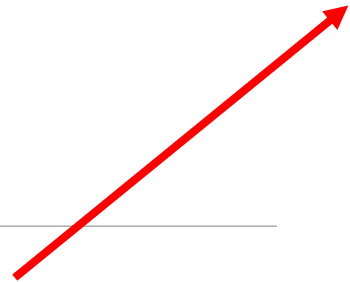
- Provision these templates even if they have been deployed before
- Copy running config to startup config

### My config

Hostname \*

switch

Export Import



Tired of typing ?  
Import a csv files with all parameters  
(use Export to get a csv template)



# Bind variable to a « source »

## Tons of possibilities

- Inventory (serial number, interfaces, IP addresses, OSPF status, device type...)
- Common settings (NTP, DHCP...)
- Network profile (SSID)

## Definition of Interfaces

Display Type

Multiple Select



## Content

Bind to Source

Source \*

Inventory



Entity \*

Interface



Attribute

portName



Filter by

portName



Condition

Starts With



Value \*

GigabitEthernet

Advanced use cases

# Scripting !

Template Language \*

Velocity

Jinja

100M ports \* ×

Actions ▾

Edit ▾

Properties

Template System Variables



## Template

```
1 {% for accessInterface in Interfaces -%}  
2   interface {{ accessInterface }}  
3   speed 100  
4 {% endfor %}  
5
```

# Provision

Inventory > Provision Devices

- 1 Assign Site
- 2 Advanced Configuration
- 3 Summary

## Devices

Select devices to fill out provisioning parameters

Find  Show

🔍 Device  All

100M ports (1)

✔ C9300-PNP-1.cisco.com

Provision these templates even if they have been deployed before

Copy running config to startup config

🔍 Filter | Reset Select All

### Interfaces ▲

GigabitEthernet0/0

GigabitEthernet1/0/1

GigabitEthernet1/0/10 ✕

GigabitEthernet1/0/12 ✕

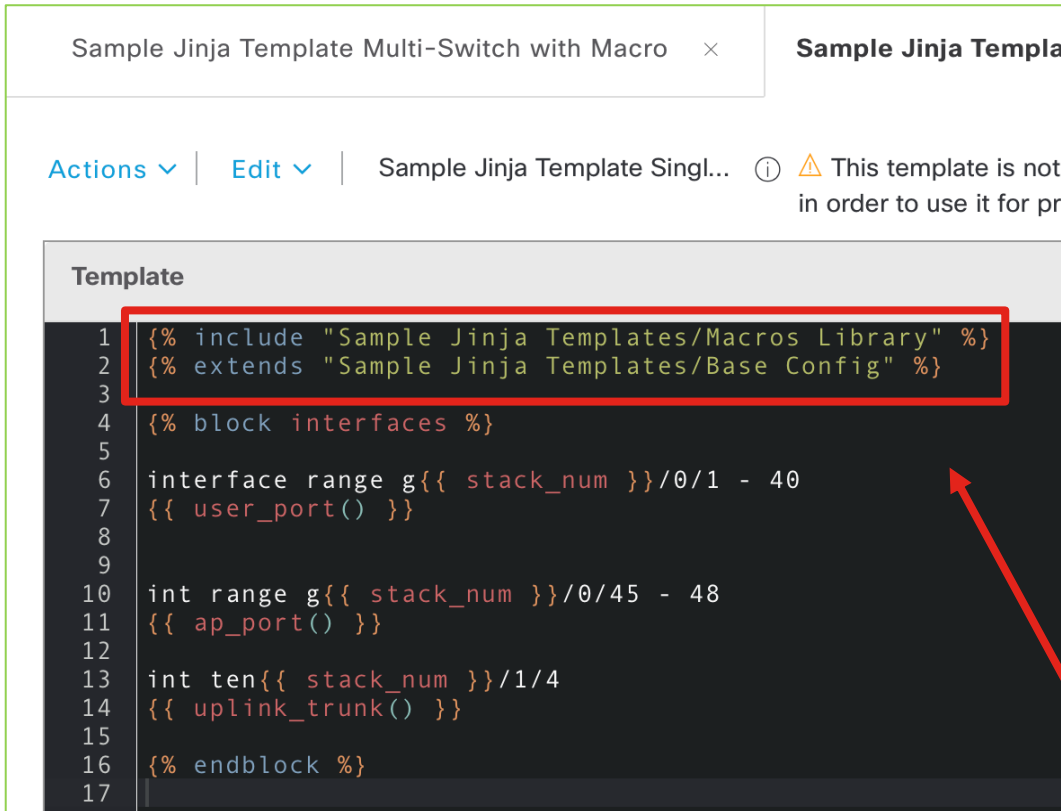
GigabitEthernet1/0/14 ✕

Selected interfaces



Select interfaces among existing GigabitEthernet interfaces on the switch

# Jinja Template Language



The screenshot shows a web interface for editing a Jinja template. The title bar reads "Sample Jinja Template Multi-Switch with Macro" and "Sample Jinja Template". Below the title bar, there are tabs for "Actions" and "Edit". The main content area is titled "Template" and contains the following code:

```
1 {% include "Sample Jinja Templates/Macros Library" %}
2 {% extends "Sample Jinja Templates/Base Config" %}
3
4 {% block interfaces %}
5
6 interface range g{{ stack_num }}/0/1 - 40
7   {{ user_port() }}
8
9
10 int range g{{ stack_num }}/0/45 - 48
11   {{ ap_port() }}
12
13 int ten{{ stack_num }}/1/4
14   {{ uplink_trunk() }}
15
16 {% endblock %}
17
```

A red box highlights the first two lines of code, and a red arrow points from a box at the bottom right towards the code.

## Jinja Template Language

- A modern and designer-friendly templating language for Python
- Community driven development
- User friendly
- Good documentation
- Python scripting language
- Powerful filtering & macro capabilities

Create Macro libraries to reuse code

# Special keywords in templates

```
#MODE_ENABLE  
<<commands>>  
#MODE_END_ENABLE
```

```
#INTERACTIVE  
<IQ>Question<R>Reponse  
#END_INTERACTIVE
```

## Template

```
1 #MODE ENABLE  
2 crypto key generate rsa modulus 4096  
3 #MODE_END_ENABLE  
4
```

## Template

```
1 template Inter_Template_dot1x_Mab  
2 dot1x pae authenticator  
3 switchport mode access  
4 switchport access vlan 580  
5 mab  
6 #INTERACTIVE  
7 access-session closed<IQ>continue<R>yes  
8 #END_INTERACTIVE  
9 access-session port-control auto  
10 authentication periodic  
11 authentication timer reauthenticate server
```

# Multiline Commands

```
<MLTCMD>first line of multiline command  
second line of multiline command  
...  
...  
last line of multiline command</MLTCMD>
```

## Template

```
1 crypto pki certificate chain TEST-CA  
2 certificate ca 00AC1165BD4C3208A0  
3 <MLTCMD>308202F7 308201DF A0030201 02020900 AC1165BD 4C3208A0 300D0609 2A864886  
4 F70D0101 0B050030 12311030 0E060355 04030C07 6B756265 2D636130 1E170D31  
5 39303130 34313130 3633355A 170D3231 30393330 31313036 33355A30 12311030  
6 0E060355 04030C07 6B756265 2D636130 82012230 0D06092A 864886F7 0D010101  
7 .. snip ..  
8 05000382 010F0030 82010A02 82010100 BDE69ED0 EC47A51E F437161D D85C73A8  
9 4BCFCCFC 41C5D331 4934C923 4C5696F6 8C1F64FD 3F250379 E63BCDA8 E11C32B9  
10 702F1C03 DB42968C A23B18EA 882A9841 4376A4E7 040920D5 0220A214 830F4CAC</MLTCMD>
```

# Automate EEM script deployment

```
1 event manager applet _L3Applet_FortyGigabitEthernet1/0/1
2 event timer countdown time 1
3 action 1.0 cli command "enable"
4 action 1.1 cli command "config t"
5 action 1.2 cli command "interface FortyGigabitEthernet1/0/1"
6 action 1.3 cli command "no switchport"
7 action 1.4 cli command "ip address 10.32.58.37 255.255.255.252"
8 action 1.5 cli command "ip router isis"
9 action 1.6 cli command "isis network point-to-point"
10 action 1.7 cli command "no shutdown"
11 action 1.8 cli command "bfd interval 100 min_rx 100 multiplier 3"
12 action 1.9 cli command "no bfd echo"
13 action 2.0 cli command "dampening"
14 action 2.1 cli command "logging event link-status"
15 action 2.2 cli command "load-interval 30"
16 action 2.3 cli command "description Fabric Physical Link"
17 action 2.5 cli command "exit"
18 action 3.1 cli command "no event manager applet _L3Applet_FortyGigabitEthernet1/0/1"
19 action 3.2 cli command "end"
20 action 3.3 cli command "exit"
```



# NETCONF templates

## For NFVIS (UCPE) and Catalyst 9800 WLC only

```
Template
1 <secure-overlays xmlns="http://www.cisco.com/nfvis/secure-overlay">
2   <secure-overlay>
3     <name>TO_DNAC</name>
4     <local-id>$local-id</local-id>
5     <local-bridge>$local-bridge</local-bridge>
6     <local-system-ip-addr>$local-system-ip-addr</local-system-ip-addr>
7     <remote-id>$remote-id</remote-id>
8     <remote-interface-ip-addr>$remote-interface-ip-addr</remote-interface-ip-addr>
9     <remote-system-ip-addr>$remote-system-ip-addr</remote-system-ip-addr>
10    <psk>
11      <local-psk>$psk</local-psk>
12      <remote-psk>$psk</remote-psk>
13    </psk>
14  </secure-overlay>
15 </secure-overlays>
```

# Don't reinvent the wheel !

kebdwi / **DNAC-TEMPLATES** Public template

<> Code Issues 1 Pull requests Actions Projects Wiki Security Insights

master 6 Branches 0 Tags Go to file Code

kebdwi Merge pull request #262 from kebdwi/kebdwi 054a95f · 2 weeks ago 1,964 Commits

.github/workflows	Create static.yml	3 months ago
ASSETS	Update qr_2.png	3 months ago
CODE	small mods	3 months ago
DAYN	small mods	3 months ago
LABS	Update module5-telemetry.md	2 weeks ago
ONBOARDING	small mods	3 months ago
TUTORIALS	download links	last month



Join at  
**slido.com**  
**#2194 815**

🔒 Passcode:  
**smzgdn**

## Quel(s) language(s) de programmation sont supportés dans le Template Hub ?

a) C++

0%

b) Velocity

0%

c) Jinja

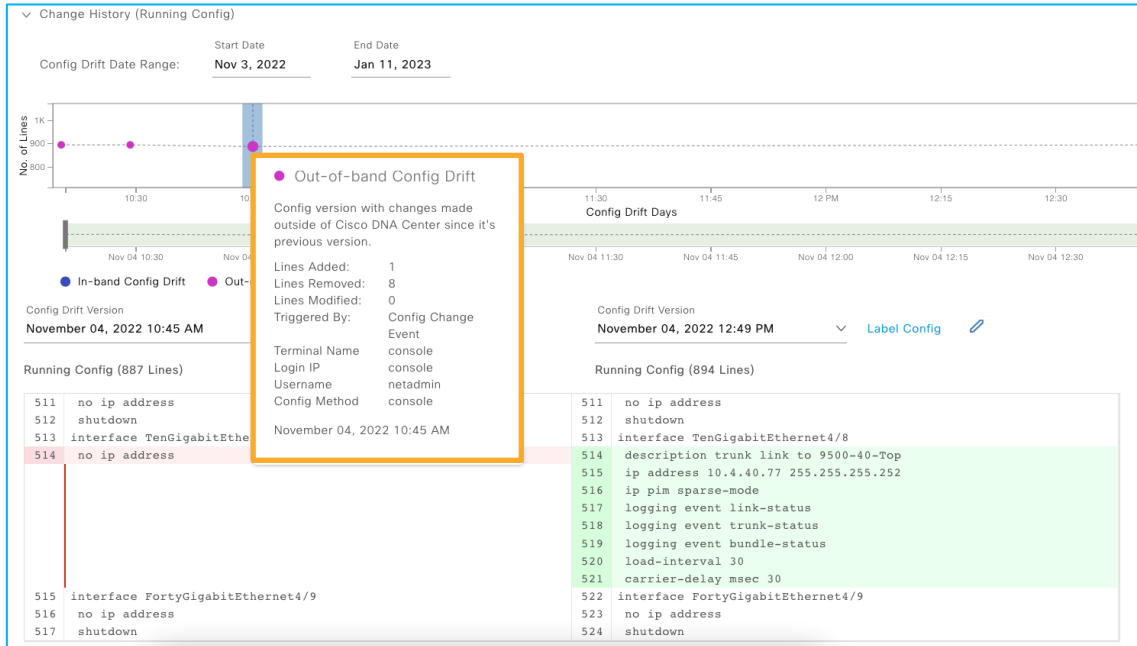
0%

d) Visual Basic

0%

Compliance

# Configuration Drift – WHO, WHAT, WHEN



- Time graph for better visualization
- Differentiate In-band and out-of-band changes
- Side by side comparison of changes

# Network Profile Compliance

Compliance Summary [View Preference for Ad](#)

No events detected to trigger compliance check [Run Compliance Check](#)

- EoX - End of Life** (Warning icon)  
Compliance last run on: Jan 9th, 2023, 07:32:08 AM  
Software : ▲ **Compliant**  
Module : ▲ **Compliant**  
Hardware : ● **Compliant**
- Startup vs Running Configuration** (Info icon)  
Compliance last run on: Jan 9th, 2023, 04:30:00 AM  
**26 days** since in sync  
Lines added: **0**  
Lines removed: **0**  
Lines modified: **0**
- Network Profiles** (Error icon)  
Non-Compliant since Oct 21st, 2022, 04:30:02 AM  
Compliance last run on: Jan 9th, 2023, 04:30:00 AM  
**1** Open Violations  
CLI Template: 1
- Application Visibility** (Error icon)  
Non-Compliant since Jan 9th, 2023, 04:30:12 AM  
Compliance last run on: Jan 9th, 2023, 04:30:12 AM  
**1** Open Violations  
CBAR configuration - Protocol Discovery: 1
- Software Image** (Error icon)  
Non-Compliant since Dec 6th, 2022, 06:25:19 AM  
Compliance last run on: Jan 9th, 2023, 04:30:00 AM  
**17.03.01** Golden Image Version  
Running Version: **17.3.5**
- Critical Security Advisories** (Info icon)  
Compliant since Jun 3rd, 2022, 05:31:25 AM  
Compliance last run on: Jan 9th, 2023, 04:30:00 AM  
**0**

- Deviations to network profile and CLI templates
- Out of band changes to defined intent
- Intent value vs Current value
- Isolate and report breached intent
- Remediate to reinstate intent
- Support for Wireless, Switching and Routing

# CLI Template Compliance

## Compliance Summary

[View Preference for Acknowledged Violations](#)

No events detected to trigger compliance check

[Run Compliance Check](#)

**⚠️ EoX - End of Life** ⓘ

Compliance last run on: Jan 9th, 2023, 07:32:08 AM

Software : ⚠️ Compliant

Module : ⚠️ Compliant

Hardware : ✅ Compliant

**✅ Startup vs Running Configuration** ⓘ

Compliance last run on: Jan 9th, 2023, 04:30:00 AM

**26 days** since in sync

Lines added: **0**

Lines removed: **0**

Lines modified: **0**

**❌ Network Profiles** ⓘ

Non-Compliant since Oct 21st, 2022, 04:30:02 AM

Compliance last run on: Jan 9th, 2023, 04:30:00 AM

**1** Open Violations

CLI Template: 1

**❌ Application Visibility** ⓘ

Non-Compliant since Jan 9th, 2023, 04:30:12 AM

Compliance last run on: Jan 9th, 2023, 04:30:12 AM

**1** Open Violations

CBAR configuration - Protocol Discovery: 1

**❌ Software Image** ⓘ

Non-Compliant since Dec 6th, 2022, 06:25:19 AM

Compliance last run on: Jan 9th, 2023, 04:30:00 AM

**17.03.01** Golden Image Version

Running Version: **17.3.5**

**✅ Critical Security Advisories** ⓘ

Compliant since Jun 3rd, 2022, 05:31:25 AM

Compliance last run on: Jan 9th, 2023, 04:30:00 AM

**0**

- Out of band changes to provisioned CLI template
- Lists violated template
- Pinpoint changed CLI

Compliance Summary / [Network Profiles](#)

[View Preference for Acknowledged Violations](#)

## CLI Template (1)

### CLI Deviations

As of: Jan 10, 2023 5:02 PM



Search Table



Open Violations (1)

Acknowledged Violations (0)

Template	Action
AD4-9300-DayN	<a href="#">Acknowledge</a>

1 Records

Show Records: 10

1 - 1



### Realize Template: AD4-9300-DayN ⓘ

7	7	switchport port-security aging time 2
8	8	switchport port-security aging type inactivity
9	9	switchport port-security
10		ip arp inspection limit rate 100
11		load-interval 30
12	10	ip verify source
13	11	ip dhcp snooping limit rate 100
14		spanning-tree portfast
15	12	spanning-tree bpduguard enable
16	13	!
17	14	interface GigabitEthernet1/0/5

# Acknowledge Compliance Violations

Compliance Summary / Network Profiles View Preference for Acknowledged Violations

CLI Template (1)

CLI Deviations As of: Jan 10, 2023 7:44 PM

Search Table

Open Violations (1) Acknowledged Violations (0)

Template	Action
AD4-9300-DayN	Acknowledge

1 Records Show Records: 10 1 - 1

Realize Template: AD4-9300-DayN

7	7	switchport port-security aging time 2
8	8	switchport port-security aging type inactivity
9	9	switchport port-security
10		ip arp inspection limit rate 100
11		load-interval 30
12	10	ip verify source
13	11	ip dhcp snooping limit rate 100
14		spanning-tree portfast
15	12	spanning-tree bpduguard enable
16	13	!
17	14	interface GigabitEthernet1/0/5

- Support for Model based template and CLI Template violations
- Acknowledge insignificant violation to suppress reporting
- Un-list the acknowledged violation to resume reporting
- History of acknowledged violations

Acknowledge Violation Preferences

Following are all the list of Acknowledged Violation Preference for this device. Any violations against these attributes will not be reported as open violations. To see such violations as open, you can unlist these from here.

List of Acknowledged Violation Attributes (1)

Models **Templates**

1 Selected [Unlist](#)

Template	Action
AD4-9300-DayN	Unlist

1 Records Show Records: 25 1 - 1



# Compliance Remediation

The screenshot displays a network management interface for a device identified as AD4-9300-5.pseudoco.com. The interface includes a navigation sidebar on the left with categories like DETAILS, SECURITY, and COMPLIANCE. The main content area shows a 'Compliance Summary' section with a message: 'You can now fix all configuration compliance issues on this device. You will be able to review before the fix is applied.' A button labeled 'Fix All Configuration Compliance Issues' is highlighted with an orange box. Below this, a 'Next Compliance check is scheduled on Aug 31, 2023 07:38 PM' is shown with a 'Run Compliance Check' button. The summary consists of six compliance cards:

- EoX - End of Life**: Compliance last run on: Aug 31st, 2023, 02:29:18 PM. Module: ▲ Compliant. Software: ▲ Compliant. Hardware: ● Compliant.
- Network Settings**: Compliant since May 8th, 2023, 01:54:49 PM. Compliance last run on: Aug 31st, 2023, 02:29:18 PM. 0 Open Violations.
- Startup vs Running Configuration**: Compliance last run on: Aug 31st, 2023, 02:29:18 PM. 106 days since out of sync. Lines added: 0, Lines removed: 1, Lines modified: 0.
- Network Profiles**: Non-Compliant since Not Applicable. Compliance last run on: Aug 31st, 2023, 02:29:18 PM. 1 Open Violations. CLI Template: 1.
- Software Image**: Non-Compliant since Feb 9th, 2023, 04:32:04 PM. Compliance last run on: Aug 31st, 2023, 02:29:18 PM. 17.03.06 Golden Image Version. Running Version: 17.6.5.
- Critical Security Advisories**: Compliant since Jun 3rd, 2022, 05:31:25 AM. Compliance last run on: Aug 31st, 2023, 02:29:18 PM. 0 Open Violations.

- One click fix for reported non-compliance
- Remediation for
  - Network Profile
  - Network Settings
  - Model Config Templates
  - CLI Templates
  - App Visibility
- Remediate open and acknowledged violations
- Preview configuration prior to remediation
- On-demand and scheduled remediation

# Compliance Remediation

All Devices / AD4-9300-5.pseudoco.com

AD4-9300-5.pseudoco.com [Run Commands](#) [View 360](#)

Switch and Hub

Reachable | Managed Syncing... | IP Address: 10.4.111.25 | Device Model: Cisco Catalyst 9300 Switch | Device Role

**DETAILS**

Interfaces >

Hardware & Software

Configuration

Power

Fans

SFP Modules

User Defined Fields

Config Drift

REP Rings

**SECURITY**

Advisories

**COMPLIANCE**

Summary

You can now fix all configuration compliance issues on this device. You will be able to review and schedule the fix.

### Compliance Summary

Next Compliance check is scheduled on Aug 31, 2023 07:38 PM [Run Compliance Check](#)

**EoX - End of Life** 1

Compliance last run on: Aug 31st, 2023, 02:29:18 PM

Module : Compliant

Software : Compliant

Hardware : Compliant

**Network Settings** 0

Compliant since May 8th, 2023, 01:54:43 PM

Compliance last run on: Aug 31st, 2023, 02:29:18 PM

Open Violations

**Network Profiles** 1

Non-Compliant since Not Applicable

Compliance last run on: Aug 31st, 2023, 02:29:18 PM

1 CLI Template: 1

Open Violations

**Software Image** 17.03.06

Non-Compliant since Feb 9th, 2023, 04:15:12 PM

Compliance last run on: Aug 31st, 2023, 02:29:18 PM

Running Version: 17.03.06

Golden Image Version

### Fix Configuration Compliance Issues

2 compliance issues are listed to be fixed. Review and schedule the fix.

**Note: Routing, HA Remediation, Software Image, Securities Advisories and Workflow** related compliance issues will not be addressed in this fix. You can address these separately by following the actions in their respective sections.

Summary of Issues to be Fixed 1

Following are the different violations selected to be fixed. Click on the issues identified to view details in the respective compliance sections.

Compliance Type	Issues Identified
Network Profiles	1
Startup vs Running Configuration	1

Schedule the Fix

When would you like to apply the fix?

Now

Later

**Generate Preview**

Creates preview which can be later used to deploy on selected devices. View status in [Work Items](#)

Task Name\*

AD4-9300-5.pseudoco.com - Compliance Pre

[Cancel](#) [Apply](#)

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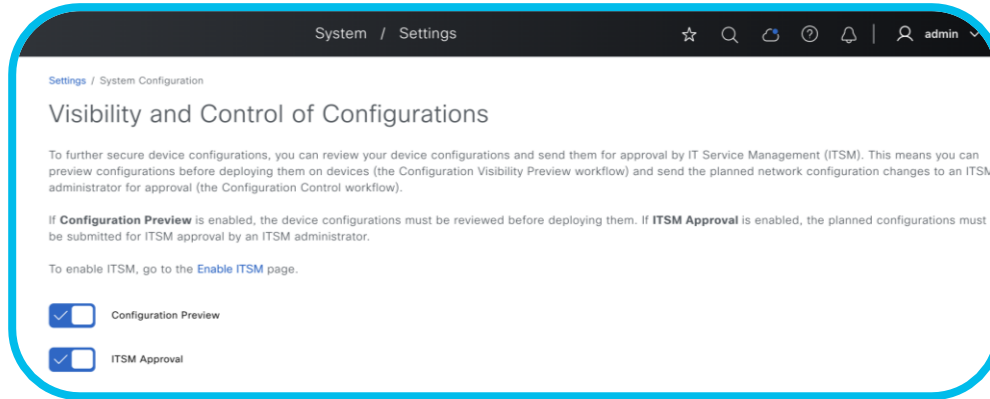
61

API and integrations

# Don't reinvent the wheel !

The screenshot shows the Cisco DevNet Code Exchange search results for the query 'templates'. The page features a dark header with navigation links (Documentation, Learn, Technologies, Community, Events) and a search bar. Below the header, a large banner reads 'Discover code repositories related to Cisco technologies' with a search input field containing 'templates' and a 'Search' button. A call to action on the right says 'No interested Sample Codes? Contact us! Submit a request!'. The main content area is divided into a left sidebar for 'Refine Search Results' and a main grid of repository cards. The sidebar lists categories like Analytics & Automation, Cloud, Collaboration, Data Center, IoT, Networking, Observability, and Security, along with a 'Programming Languages' section with checkboxes for Ansible (1), C (0), C++ (0), and Go (0). The main grid shows 23 results, sorted by 'Most Relevant'. Three repository cards are visible: 'DNAC-TEMPLATES' by kebalidwi (4 contributors), 'gve\_devnet\_dnac\_vlan\_provisioning' by gve-sw, and 'dnac\_ansible\_workflows' by DNACENSolutions (1 contributor). Each card includes a description, tags, and engagement metrics (stars, forks, pulls).

# Visibility and Control of Configurations



## Catalyst Center ServiceNow Integration:

- Increased IT efficiency by streamlining and customizing processes
- Automated ServiceNow CMDB population with rich asset data
- Enhanced incident management with enriched issue data
- **Simplified change management with closed loop functionality**
- Endpoint attribute synchronization for client profiling

# Template Editor- API's

## Create, Update & Delete Project

Create Project				
<b>DESCRIPTION</b>				
Creates a new project				
<b>Method</b>	<b>URL</b>			
POST	https://10.104.49.61/dna/intent/api/v1/template-programmer/project			
<b>PARAMETERS</b>				
Request Headers Parameters				
Name	Description	Data Type	Default Value	Required
Content-Type	Request body content type	string	application/json	true

Update Project				
<b>DESCRIPTION</b>				
Updates an existing project				
<b>Method</b>	<b>URL</b>			
PUT	https://10.104.49.61/dna/intent/api/v1/template-programmer/project			
<b>PARAMETERS</b>				
Request Headers Parameters				
Name	Description	Data Type	Default Value	Required
Content-Type	Request body content type	string	application/json	true

MODEL SCHEMAS	
<b>Request</b>	
Description : project	
<b>Model</b>	<b>Model Schema</b>
1- 2- 3- 4- 5- 6- 7- 8- 9- 10- 11-	<pre>{   "createTime": "integer",   "description": "string",   "id": "string",   "lastupdateTime": "integer",   "name": "string",   "tags": [     "string"   ],   "templates": "any" }</pre>

Delete Project			
<b>DESCRIPTION</b>			
Deletes an existing Project			
<b>Method</b>	<b>URL</b>		
DELETE	https://10.104.49.61/dna/intent/api/v1/template-programmer/project/{projectId}		
<b>PARAMETERS</b>			
Request URL Parameters			
Name	Description	Data Type	Required
projectId	projectId	string	true

# Template Editor- API's

## Create, Update, Delete & Versioning Templates

### Create Template

#### DESCRIPTION

Creates a new template

Method	URL
POST	https://10.104.49.61/dna/intent/api/v1/template-programmer/project/{projectId}/template

#### PARAMETERS

Request Headers Parameters

Name	Description	DataType	Default Value	Required
Content-Type	Request body content type	string	application/json	true

Request URL Parameters

Name	Description	DataType	Required
projectId	projectId	string	true

### Version Template

#### DESCRIPTION

Creates Versioning for the current contents of the template

Method	URL
POST	https://10.104.49.61/dna/intent/api/v1/template-programmer/template/version

#### PARAMETERS

Request Headers Parameters

Name	Description	DataType	Default Value	Required
Content-Type	Request body content type	string	application/json	true

### Update Template

#### DESCRIPTION

Updates an existing template

Method	URL
PUT	https://10.104.49.61/dna/intent/api/v1/template-programmer/template

#### PARAMETERS

Request Headers Parameters

Name	Description	DataType	Default Value	Required
Content-Type	Request body content type	string	application/json	true

### Delete Template

#### DESCRIPTION

Deletes an existing template

Method	URL
DELETE	https://10.104.49.61/dna/intent/api/v1/template-programmer/template/{templateId}

#### PARAMETERS

Request URL Parameters

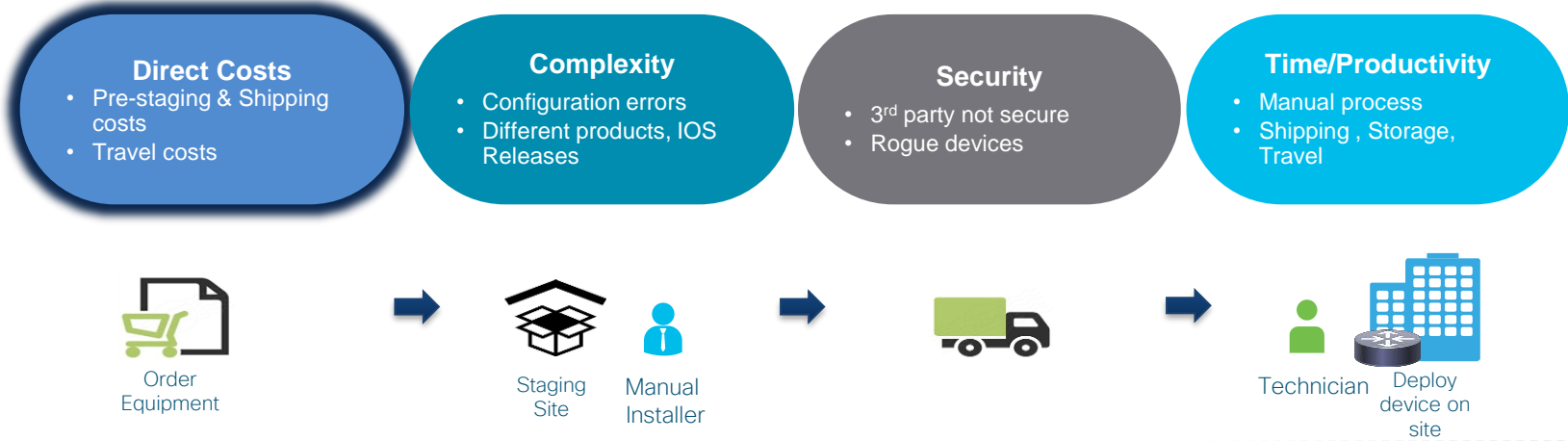
Name	Description	DataType	Required
templateId	templateId	string	true

Plug and Play

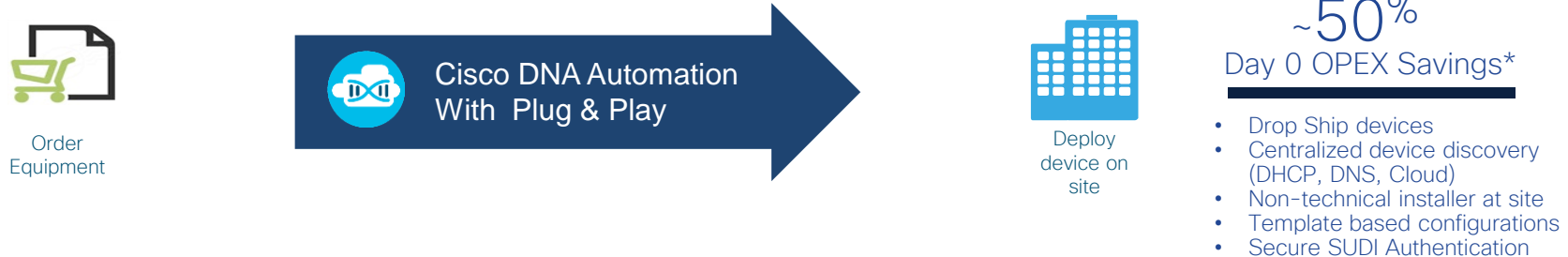


# Day 0 Deployment Challenges

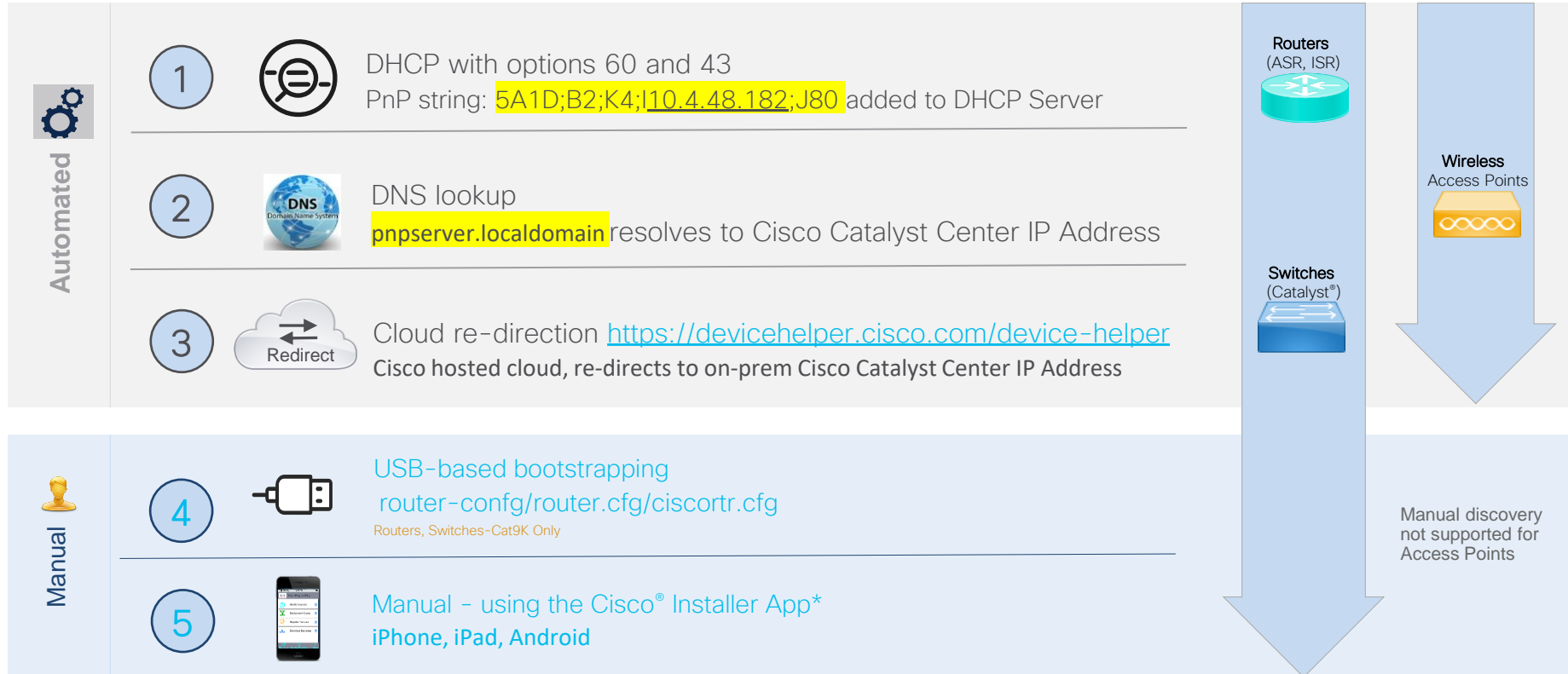
w/o Automation



## Cisco Catalyst Center PnP



# PnP Server Discovery Options



# Onboarding templates

The screenshot shows the Cisco DNA Center interface for editing a template. The breadcrumb path is "Tools > Template Editor". The search bar contains "AD3-9300-Day0". The left sidebar shows a tree view of templates under "Onboarding Configuration", with "AD3-9300-Day0" selected. The main area displays the Jinja2 template code for "AD3-9300-Day0".

Annotations in blue callouts point to various elements:

- "Out-of-Box Project for Day-0" points to the "AD3-9300-Day0" entry in the sidebar.
- "Jinja Template" points to the Jinja icon next to the selected template.
- "Velocity Template" points to the Velocity icon next to the selected template.
- "Day-0 Template" points to the "AD3-9300-Day0" entry in the sidebar.
- "Variable" points to the variable placeholder `{{data Vlan}}` in the code.

```
1 {% include "Onboarding Configuration/Macro Library" %}
2
3 timezone PST -8 0
4 summer-time PDT recurring
5
6 no ip dhcp snooping information option
7 ip dhcp snooping
8 !
9 vtp mode transparent
10 !
11 vlan {{data Vlan}}
12 name Data
13 !
14 vlan {{Voice_Vlan}}
15 name Voice
16 !
17 vlan {{Mgmt_Vlan}}
18 name Mgmt
19 !
20 vlan 999
21 name AntiHopping
22 !
23 interface TenGigabitEthernet{{uplink_port}}
24 {{ uplink_trunk() }}
25 !
26 interface Vlan {{Mgmt_Vlan}}
27 ip address {{inband_Mgmt_IP}} 255.255.255.0
28 !
29 ip default-gateway {{Mgmt_GW}}]
```

Only latest committed version of template can be used for provisioning, including PnP claim.

# Onboarding templates in Network Profile

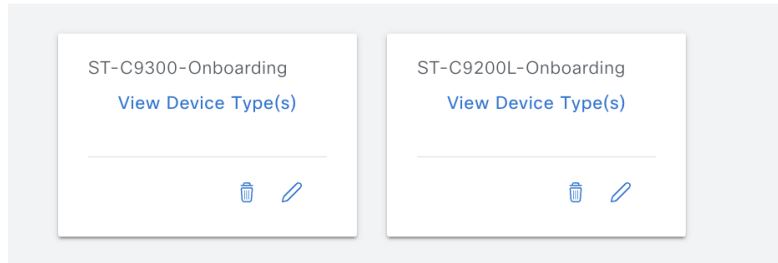
Edit Network Profile

Templates are created in the [Templates Hub](#)

**OnBoarding Template(s)**

Day-N Template(s)

Attach Templates



Recommendation : keep OnBoarding templates as simple as possible (management)  
Keep the main configuration in Day-N Template

# Step 1 PnP Claim

1a) Start Claiming


Inventory **Plug and Play**

DEVICE STATUS **Unclaimed (1)** Error (0) Provisioned (6) All (7)

**Devices (1)**

Last updated: 10:32 AM Refresh Add Devices

Filter Actions 1 Selected Find

#	Stack icon	Device Name	Product ID	IP Address	Source	Onboarding Progress	Site	Last Contact
1		FJC2330S176	C9300-24LUX	10.4.79.20	Network	<div style="width: 40%;"></div> 40%	N/A	Jan 20, 2021 10:31 AM

Context menu: Claim, Edit, Reset, Delete

# Step 1 PnP Claim

## 1b) Site Assignment

Cisco DNA Center Provision · Network Devices · Plug and Play

Inventory **Plug and Play**

1 Assign Site 2 Assign Configuration 3 Provision Templates 4 Summary

From the Select a site drop-down list, choose a site to assign to the device.

Filter Find

#	Device Name	Serial Number	Product ID	Site	Actions
1	AD2-9300-Stack	FJC2330S176	C9300-24UX	Global/San Jose/Building 4	<input type="checkbox"/> Apply Site to All <a href="#">Assign this Site to Other Devices</a>

Showing 1 of 1

Cancel Back Next

Change device hostname, not required to define it as variable in template

Assign to Site

# Step 1 PnP Claim

## 1c) Configuration

Cisco DNA Center Provision - Network Devices - Plug and Play

Inventory **Plug and Play**

1 Assign Site 2 **Assign Configuration** 3 Provision Templates 4 Summary

Clear Images Clear Templates Clear License Levels

Filter Find

#	Device Name	Serial Number	Product ID	Assigned Site	Configuration	Actions
1	AD2-9300-Stack	FJC2330S176	C9300-24UX	Global/San Jose/Building 4	Image: cat9k_iosxe.17.03.02a.SPA.bin Template: AD2-9300#4 (Switching) Stack Details: Assign	...

Showing 1 of 1

Cancel Back **Next**

1 If any configuration update is required, click on the device

2 By default, golden image and template are populated automatically for device.

# Step 1 PnP Claim

## 1g) Advanced Configuration

The screenshot shows the Cisco DNA Center Provisioning Wizard in the 'Advanced Configuration' step. The breadcrumb trail is 'Provision - Network Devices - Plug and Play'. The progress bar shows four steps: 'Assign Site' (checked), 'Assign Configuration' (checked), '3 Provision Templates' (active), and '4 Summary'. The main configuration area is titled 'AD2-9300#4' and includes a checkbox for 'Copy running config to startup config' which is checked. On the left, a 'Devices' list shows 'AD2-9300#4 (1)' selected. The configuration parameters are:

- Data Vlan for Wired Clients: 170
- Voice Vlan for Wired Collab devices: 171
- Mgmt VLAN for device: 179
- Port Interface number: 1/1/8
- Distribution Device Name: (empty)

A blue callout box points to the 'Voice Vlan for Wired Collab devices' field with the text 'Input value for variable'. At the bottom right, there are 'Cancel', 'Back', and 'Next' buttons, with 'Next' highlighted.



# Step 1 PnP Claim


1h) Summary

Cisco DNA Center Provision · Network Devices · Plug and Play

Inventory **Plug and Play**

Assign Site Assign Configuration Provision Templates **4 Summary**

Filter EQ Find

#	Device Name	Serial Number	Product ID	Assigned Site	Configuration	Day-0 Config
1	AD2-9300-Stack	FJC2330S176	C9300-24LUX	Global/San Jose/Building 4	Template: AD2-9300#4 (Switching)	 <a href="#">Preview Day-0 Config</a>

Showing 1 of 1

1 Click on device to review detailed info

2 Summary on what will be done by PnP

Green checkmark to indicate "Ready to Claim"

Cancel Back **Claim**

# Step 1 PnP Claim

## 1i) Summary

The screenshot shows the Cisco DNA Center interface for provisioning network devices. The main navigation bar includes 'Cisco DNA Center' and 'Provision · Network Devices · Plug and Play'. The 'Plug and Play' section is active, showing a table of devices and a detailed configuration preview for device 'AD2-9300-Stack'.

**Inventory - Plug and Play**

Assign Site  Assign Configuration  Provision Templates

Filter

#	Device Name	Serial Number	Product
1	AD2-9300-Stack	FJC2330S176	C9300-2

**Summary of device name: AD2-9300-Stack**

**Day-0 Configuration Preview**

CLI Username	"CiscoDNA"
SNMPV2C Write Community	"*****"
SNMPV2C Read Community	"*****"
Enable Password	"*****"
Host Name	"AD2-9300-Stack"
CLI User Password	"*****"
isError	false

**Device Details**

**Image Details**

**Template CLI Preview** (User-defined CLI Configuration)

**Network Settings**

Day-0 Configuration Generated by Cisco Catalyst Center

- Device Credentials (CLI and SNMP)
- Enable SSH v2 and SCP server
- Disable HTTP and HTTPS servers
- For switch, "vtp mode transparent" and "ip routing" are enabled in 1.2.8
- For switch, only "vtp mode transparent" is enabled in 1.2.10 or later.

[Sample Switch Day-0 Configuration - Generated by Cisco Catalyst Center](#)

Note that Day-0 configuration generated by Cisco Catalyst Center is applied first, then user-defined configuration.

# Step 1 PnP Claim

1j) PnP Complete-  
Provision Success

Inventory **Plug and Play**

DEVICES STATUS: Unclaimed (0) Error (0) **Provisioned (7)** All (7)

Devices (7) Last updated: 8:09 PM Refresh Add Devices

Filter Actions Find

#	Device Name	Serial Number	Product ID	IP Address	Source	Onboarding Progress	Site	Last Contact
1	AP70F3.5A88.4E80	KWC221000SN	AIR-AP1800S-B-K9	10.4.74.21	Network		Global/Milpitas/Building 24/Floor 1	Oct 15, 2019 01:37 PM
2	AD2-9200	JAD231501M5	C9200-24P	10.4.79.15	Network		Global/Milpitas/Building 24/Floor 3	Oct 04, 2020 01:37 PM
3	AP7069.5A76.3864	FGL2317L069	C9115AXI-B	10.5.20.20	Network		Global/Richfield/Branch 5/Floor 1	Sep 25, 2019 02:31 PM
4	Switch	FJC2313E0M3	C9300-24U	10.5.20.7	Network		Global/Richfield/Branch 5/Floor 2	Oct 05, 2020 08:29 AM
5	D5-9500	CAT2326L34M	C9500-24Y4C	10.4.40.6	Network		Global/Richardson/Richardson 5/Floor 2	Jan 19, 2021 07:03 AM
6	AD2-9300-Stack	FJC2330S176	C9300-24UX	10.4.79.12	Network		Global/San Jose/Building 4	Jan 20, 2021 08:05 PM
7	Ad3-9300	FCW2248BHJ3	C9300-24P	10.4.95.12	Network		Global/San Jose/Building 4	Jan 01, 2021 12:26 AM

After a few mins, device is provisioned successfully.

# Step 1 PnP Claim

1k) PnP Complete  
-Add to Inventory

**Cisco DNA Center** Provision · Network Devices · Inventory 🔍 ? 🟢

**Inventory** Plug and Play

EQ Find Hierarchy

- Global
  - Unassigned Devices (3)
  - Denver
  - Milpitas
  - New York
  - Richardson
  - Richfield
  - San Jose

DEVICES (47) 📍 Global 📄 🔄

FOCUS: **Inventory** 📄

🔍 Filter | ➕ Add Device 🏷️ Tag Device ⌵ Actions | 📄 Take a Tour Last updated: 8:07 PM 📄 Export 🔄 Refresh

<input type="checkbox"/>	Device Name	IP Address	Device Family	Reachability	Manageability	Compliance	Health Score	Site	MAC Address	Device Role	Image Version	Uptime
<input type="checkbox"/>	AD1-2960XR-1.cisco.local	10.4.15.8	Switches and Hubs	Reachable	Managed	Non-Compliant	10	.../Building 23/Floor 3	f8:4f:57:ee:9d:00	ACCESS	15.2(7)E0a	71 days 22
<input type="checkbox"/>	AD1-3650.cisco.local	10.4.15.7	Switches and Hubs	Reachable	Managed	Non-Compliant	10	.../Building 23/Floor 2	00:35:1a:1d:f5:80	ACCESS	16.9.5	111 days 9
<input type="checkbox"/>	AD1-3850-1.cisco.local 3850	10.4.15.5	Switches and Hubs	Reachable	Managed	Compliant	8	.../Building 23/Floor 2	1c:e8:5d:17:e7:80	ACCESS	16.12.4	61 days 11
<input type="checkbox"/>	AD1-3850-2.cisco.local 3850	10.4.15.6	Switches and Hubs	Reachable	Managed	Non-Compliant	10	.../Building 23/Floor 1	bc:c4:93:b2:87:00	ACCESS	16.12.4	110 days 6
<input type="checkbox"/>	AD2-3750X.cisco.local	10.4.79.6	Switches and Hubs	Reachable	Managed	Managed						days 4
<input type="checkbox"/>	AD2-9200.cisco.local	10.4.79.7	Switches and Hubs	Reachable	Managed	Managed						days 4
<input type="checkbox"/>	AD2-9200	10.4.79.8	Switches and Hubs	Reachable	Managed	Managed						days 8
<input type="checkbox"/>	AD2-9300-Stack	10.4.79.12	Switches and Hubs (WLC Capable)	Reachable	Managed	Managed						days 2

**Stack Switch**

Static IP is used as management IP automatically.

Note that when "Device Controllability" is on Cisco Catalyst Center, the following configurations are added when the switch is added into inventory:

- IP Device Tracking
- Cisco Catalyst Center Root CA
- SNMP Server and Enable SNMP Traps
- Syslog Server and Set it to "Critical"
- SSH Sourcing from Management IP
- Cisco TrustSec (CTS) Credential

[Sample Switch Configuration - Add to Inventory](#)

# Step 2 Complete Provisioning (as seen before)

The screenshot displays the Cisco DNA Center Provisioning interface. The top navigation bar shows 'Cisco DNA Center' and 'Provision · Network Devices · Inventory'. The left sidebar contains a 'Find Hierarchy' search bar and a tree view of locations: Global, Unassigned Devices (3), Denver, Milpitas, New York, Richardson, Richfield, and San Jose. The main content area shows a list of 47 devices under the 'Global' focus. A context menu is open over the device 'AD1-3850-2.cisco.local', with 'Provision' and 'Provision Device' highlighted. The table below lists the devices with their respective status and compliance information.

Device Name	IP Address	Inventory	Reachability	Manageability	Compliance	Health Score	Site	MAC Address	
AD1-2960XR-1.cisco.local	10.4.15	Software Image	Reachable	Managed	Non-Compliant	10	.../Building 23/Floor 3	f8:4f:57:ee:9d:00	
AD1-3650.cisco.local	10.4.15	Provision			Non-Compliant	10	.../Building 23/Floor 2	00:35:1a:1d:f5:80	
AD1-3850-1.cisco.local 3850	10.4.15	Telemetry			Compliant	8	.../Building 23/Floor 2	1c:e8:5d:17:e7:80	
AD1-3850-2.cisco.local 3850	10.4.15	Device Replacement			Non-Compliant	10	.../Building 23/Floor 1	bc:c4:93:b2:87:00	
AD2-3750X.cisco.local	10.4.79.5	Others			N/A	10	.../Building 24/Floor 2	44:d3:ca:08:d0:80	
AD2-4503.cisco.local	10.4.79.5	Compliance	Switches and Hubs	Reachable	Managed	Compliant	10	.../Building 24/Floor 3	a8:9d:21:d7:70:80
AD2-9200.cisco.local AD2-9200	10.4.79.15		Switches and Hubs	Reachable	Managed	Non-Compliant	10	.../Building 24/Floor 3	dc:8c:37:ff:11:00
AD2-9300-Stack	10.4.79.12		Switches and Hubs (WLC Capable)	Reachable	Managed	Compliant	8	.../San Jose/Building 4	10:b3:c6:58:66:00
AD2-9300.cisco.local	10.4.79.9		Switches and Hubs (WLC Capable)	Reachable	Managed	Non-Compliant	10	.../Building 24/Floor 1	00:c1:b1:12:f0:80



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## Quelle méthode NE peut PAS être utilisée par un équipement réseau pour découvrir le serveur Plug-and-Play ?

a) DHCP

0%

b) DNS

0%

c) Bluetooth

0%

d) Cloud redirection

0%

e) USB Bootstrapping

0%

Conclusion

# Conclusion

- Templates can automate any IOS-XE feature
- Switching / Routing / Wireless / IoT...
- It unleashes capabilities of Catalyst Center
- It's not just pushing config !
- And remember ... It's just a small part of what Catalyst Center can do for you 😊



# Q&R



## Avez-vous des questions ?

Si vous avez posé une question sur le panneau de Q&R (Q&A en anglais) ou que vous revenez sur la communauté dans les jours qui suivent notre webinaire, nos experts peuvent encore vous aider !

Soumettez vos questions jusqu'au 24 mai 2024.

<https://bit.ly/AMA-may24>



## Faites valoir votre opinion

Répondez à notre enquête pour...

- Proposer des nouveaux sujets
- Évaluer nos experts et contenus
- Envoyer vos commentaires ou suggestions

À la fin de cette session, une enquête s'ouvrira dans la fenêtre de votre navigateur, cliquez sur le lien.



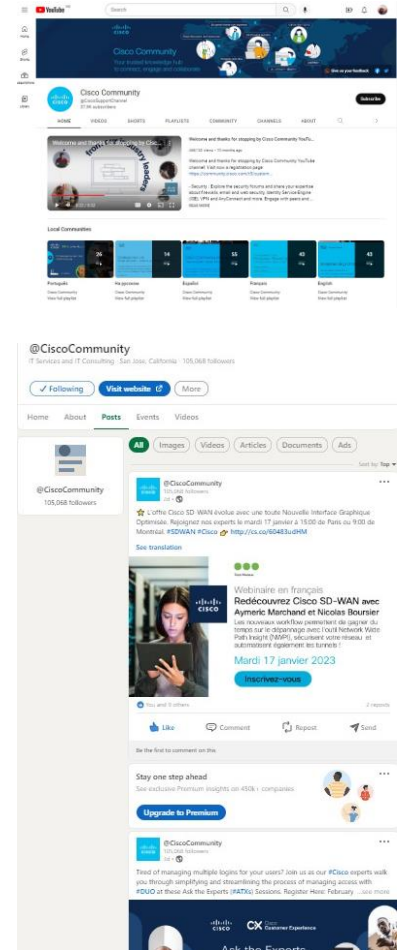
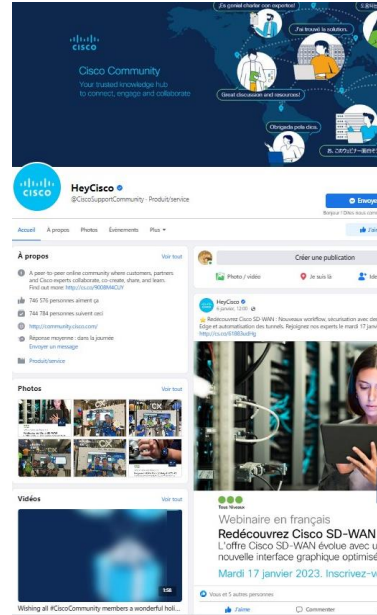
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