



The bridge to possible

Self-Service Automation for your DC Network

using Ansible, Terraform and ServiceNow

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DEVNET-1892

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Cisco Webex App

Questions?

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How

- 1 Find this session in the Cisco Live Mobile App
- 2 Click “Join the Discussion”
- 3 Install the Webex App or go directly to the Webex space
- 4 Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until June 7, 2024.



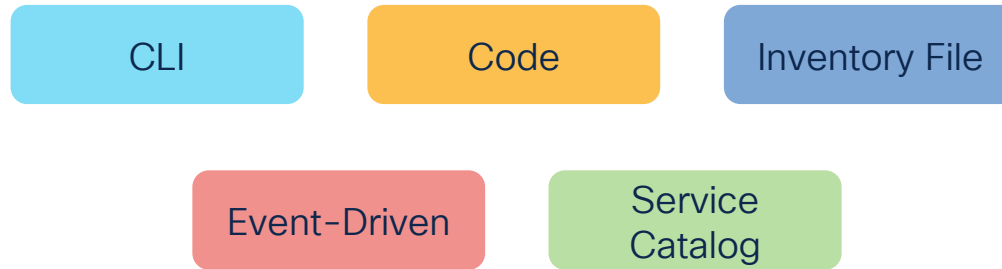


Agenda

- The Engineer Experience
- What/Why/How of ServiceNow?
- Cisco DC Networking Integrations with ServiceNow
- Creating a Service Catalog
- Recap and next steps

Thinking about the Engineer Experience first

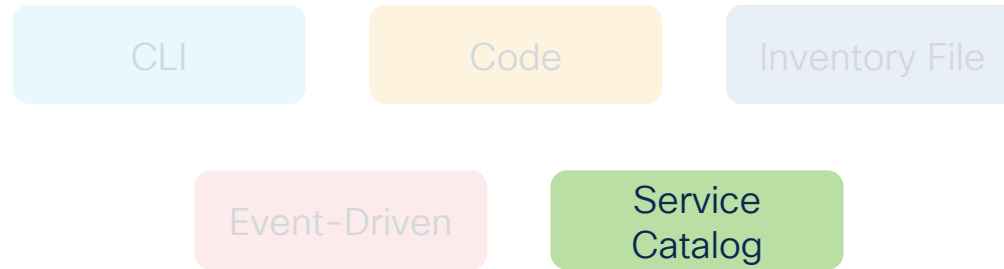
- Pick the Experience before the Tools
- What is the preferred way for you/your Engineers to make changes



- Then look at tools and technologies

Thinking about the Engineer Experience first

- Pick the Experience before the Tools
- What is the preferred way for you/your Engineers to make changes



- Then look at tools and technologies

What is ServiceNow?



- The Now Platform, a PaaS/SaaS platform for:
 - IT Services Management (ITSM)
 - IT Operations Management (ITOM)
 - IT Business Management (ITBM)
- Large Ecosystem of Partners and Integrations
- Build around data and workflows

ServiceNow Capabilities



Incident Management



Problem Management



Change Management



Configuration Management Database (CMDB)



Service Catalog

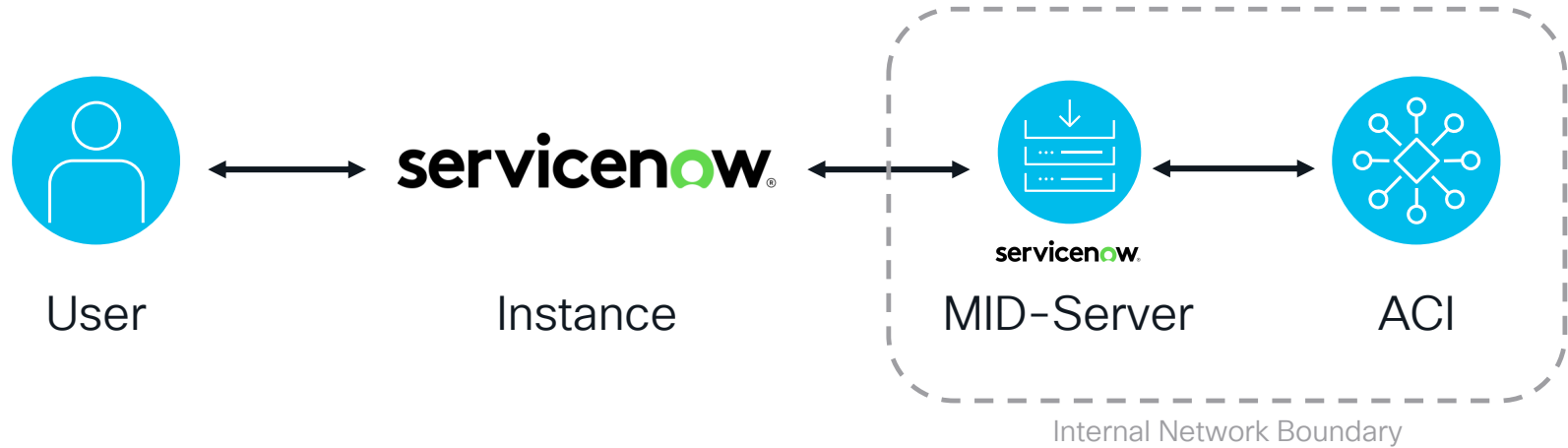
Why ServiceNow and Cisco DC Networking?

- Enhance ServiceNow CMDB data with product specific information
- Automate Incident Management but creating Incidents from network events and alert
- Enrich Incidents with deep insights to speed up recovery
- Reduce MTTR by aggregating information in one location
- Increase IT efficiency by streamlining processes
- Provide a self-service experience

The ServiceNow Architecture



The ServiceNow Architecture



The ServiceNow Store

The screenshot displays the ServiceNow Store interface with a search for 'Cisco'. The top navigation bar includes the ServiceNow logo, a search bar with 'Cisco' entered, and a 'Log In' button. Below the navigation bar, a horizontal menu lists categories: Apps and Solutions, ServiceNow Products, Integrations, Innovation Lab, and Events. The main content area is divided into a left sidebar and a main product grid. The sidebar contains filters for Listing Type (Applications, Integrations, Built With ServiceNow, OEM Solutions, Ancillary Software, Content, Template, Utility/Tool), Offered By (Partners, ServiceNow), Release (Rome, San Diego, Tokyo, Utah), Price (Free, Paid), and Additional Filters (Free Trial, Demo, Plug & Play). The main grid shows 'Apps and Solutions (5)' and 'Integrations (26)'. The 'Apps and Solutions' section features the 'Cisco Nexus Dashboard Insights Application' by Cisco Systems Inc. The 'Integrations' section features a grid of products including 'Cisco Secure Endpoint', 'Cisco ACI Orchestration', 'Cisco SecureX threat response', 'Cisco Intersight ITSM Plugin', 'Cisco ACI Application', and 'Cisco BCS Operational Insights', all by Cisco Systems Inc.

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Q Cisco Search

Log In

Apps and Solutions ServiceNow Products Integrations Innovation Lab Events

Listing Type
[Clear All Listing Type Selections](#)

- ☒ Applications
- ☒ Integrations
- ☒ Built With ServiceNow
- ☒ OEM Solutions
- ☒ Ancillary Software
- ☒ Content
- ☒ Template
- ☒ Utility/Tool

Offered By
[Clear All Offered By Selections](#)

- ☒ Partners
- ☐ ServiceNow

Release

- ☐ Rome
- ☐ San Diego
- ☐ Tokyo
- ☐ Utah

Price

- ☐ Free
- ☐ Paid

Additional Filters

- ☐ Free Trial
- ☐ Demo
- ☐ Plug & Play

Ancillary Software X Applications X Built With ServiceNow X Content X Integrations X OEM Solutions X Template X Utility/Tool X Partners X [Clear](#)

[All Filters](#)

Apps and Solutions (5) [View More](#)

Cisco Nexus Dashboard Insights Application
Monitor and analyze your data center fabric in real time
Cisco Systems Inc ☆☆☆☆☆

Integrations (26) [View More](#)

Cisco Secure Endpoint
Stop attacks and simplify security operations.
Cisco Systems Inc ☆☆☆☆☆

Cisco ACI Orchestration
Inventory discovery and CMDB update for Cisco ACI
Cisco Systems Inc ☆☆☆☆☆

Cisco SecureX threat response
Security that works together
Cisco Systems Inc ☆☆☆☆☆

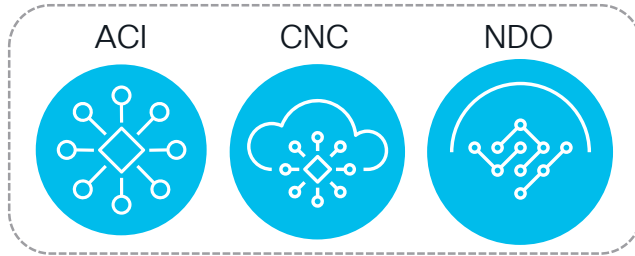
Cisco Intersight ITSM Plugin
Visibility and monitoring for Cisco UCS and HyperFlex.
Cisco Systems Inc ★★★★★

Cisco ACI Application
Inventory discovery and CMDB update for Cisco ACI.
Cisco Systems Inc ☆☆☆☆☆

Cisco BCS Operational Insights
Cisco BCS Operational Insights API Plugin
Cisco Systems Inc ☆☆☆☆☆

Cisco DC Networking ServiceNow Integrations

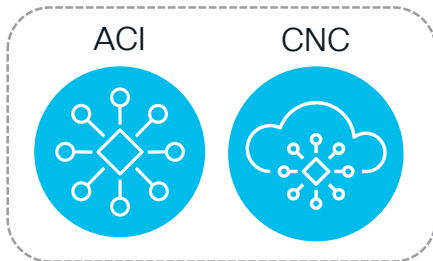
Cisco ACI Application



Nexus Dashboard Insights



Cisco ACI Orchestration



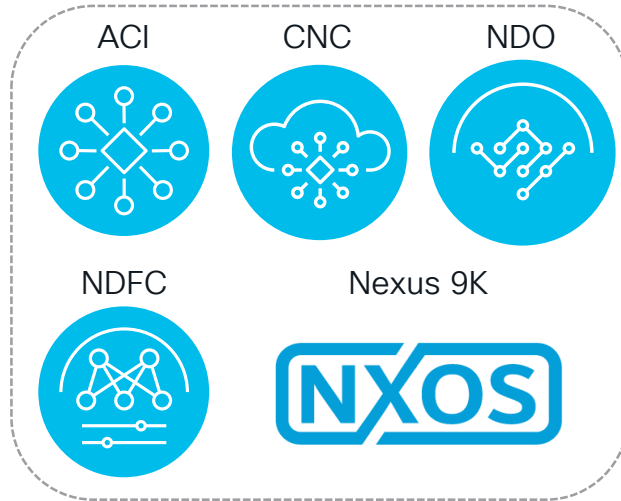
Nexus 9K



Cisco DC Networking ServiceNow Integrations

Cisco DC Networking Application

Nexus Dashboard Insights



Use Case: Service Catalog and Orchestration

- To create a Service Catalog, ServiceNow need a way to modify the configuration of the device it targets
- 3 Ways to make it happens:

servicenow®



HashiCorp

Terraform



ANSIBLE

Use Case: Service Catalog and Orchestration

- To create a Service Catalog, ServiceNow need a way to modify the configuration of the device it targets
- 3 Ways to make it happens:

servicenow®



HashiCorp

Terraform



ANSIBLE

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What is Terraform?



HashiCorp

Terraform

- Open-source Infrastructure Provisioning Tool
- Commercial support from HashiCorp
- Declarative and idempotent
- Immutable infrastructure concept
- Can manage a wide range of systems:
 - VMs, network devices, cloud instances, etc.
- Agentless, single binary file
- Zero server-side dependencies

Cisco DC Networking Terraform Providers



Network
Central
Cloud

ACI
Cloud / Onprem



CiscoDevNet/aci

Nexus
Dashboard
Orchestrator



CiscoDevNet/mso

Nexus
Dashboard
Fabric
Controller



CiscoDevNet/dcnm

All Cisco providers can be found here: <https://registry.terraform.io/search/providers?namespace=CiscoDevNet>

Integrating ServiceNow with Ansible

The screenshot shows the ServiceNow Store interface. At the top, the 'servicenow' logo is on the left, followed by a 'Store' link. A search bar contains the text 'Ansible' and a 'Search' button. On the right, there are 'Log In' and a menu icon. Below the header, a navigation bar includes 'Apps and Solutions', 'ServiceNow Products', 'Integrations' (which is highlighted), 'Innovation Lab', and 'Events'. A 'Back to Search Results' link is on the left. The main content area features a large green banner for 'Ansible Spoke' with the text 'Simplify and accelerate how you integrate with Ansible'. Below this, it says 'ServiceNow' and 'Compatibility: Utah, Tokyo, San Diego, Rome | Other App Versions'. A note states: 'Automatically entitled on customer sub-prod instances without purchase or license'. There are five stars and 'No Reviews' below the banner. To the right of the banner are 'Share With' links for Twitter and Facebook. Below the banner, there are tabs for 'Product Details' and 'Ratings and Reviews'. The 'Product Details' tab is active. Under 'Summary', it says: 'Automate job scheduling, job templates, inventory, and user management in your Ansible Tower environment from the ServiceNow instance.' and 'From March 11, 2021 IntegrationHub Standard is not available as a separate package to new customers. Existing IntegrationHub Standard customers' entitlements are not affected. New IntegrationHub customers can purchase IntegrationHub Professional or Enterprise to obtain capabilities previously available in'. To the right of the summary is a 'Search Actions' box with a list of actions: 'Most Recent', 'Popular', 'INSTALLED SPOKES', 'ServiceNow Core', 'Ansible', 'Adhoc Command Management', and 'Look up Status From Ad-Hoc ...'. A blue box above the 'Ansible' action says 'This spoke requires an IntegrationHub subscription for production use.' Below the 'Ansible' action is a 'Run An Ad-Hoc Command' button. On the right side of the page, there is a 'Get' button. Below it, there are sections for 'Type' (Integration), 'Version' (2.2.7, Other App Versions), 'Dependencies and Licensing' (View Dependencies and Licensing Requirements), 'Subscription Required' (Yes. This app is associated with a for-free subscription. More Info), 'Compatibility' (Utah, Tokyo, San Diego, Rome), and 'Supporting Links and Docs' (ServiceNow Store Terms Of Use, ServiceNow Store App Addendum).

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Q Ansible Search

Log In

Apps and Solutions ServiceNow Products **Integrations** Innovation Lab Events

← Back to Search Results

Ansible Spoke
Simplify and accelerate how you integrate with Ansible
ServiceNow
Compatibility: Utah, Tokyo, San Diego, Rome | [Other App Versions](#)
Automatically entitled on customer sub-prod instances without purchase or license

☆☆☆☆ No Reviews

Share With

Product Details ☆ Ratings and Reviews

Summary

Automate job scheduling, job templates, inventory, and user management in your Ansible Tower environment from the ServiceNow instance.

From March 11, 2021 IntegrationHub Standard is not available as a separate package to new customers. Existing IntegrationHub Standard customers' entitlements are not affected. New IntegrationHub customers can purchase IntegrationHub Professional or Enterprise to obtain capabilities previously available in

Search Actions

- Most Recent
- Popular
- INSTALLED SPOKES
- ServiceNow Core
- Ansible
- Adhoc Command Management
- Look up Status From Ad-Hoc ...

This spoke requires an IntegrationHub subscription for production use.

Run An Ad-Hoc Command

Get

Type
Integration

Version
2.2.7
[Other App Versions](#)

Dependencies and Licensing
[View Dependencies and Licensing Requirements](#)

Subscription Required
Yes. This app is associated with a for-free subscription.
[More Info](#)

Compatibility
Utah
Tokyo
San Diego
Rome

Supporting Links and Docs
[ServiceNow Store Terms Of Use](#)
[ServiceNow Store App Addendum](#)

What is Ansible?



ANSIBLE

- Open-source Configuration Management Tool
- Commercial support from RedHat
- Declarative (when possible) and idempotent
- Can manage a wide range of systems:
 - VMs, network devices, cloud instances, etc.
- Agentless
- Python server-side dependencies

Cisco DC Networking Collections



Cisco NXOS



cisco.nxos

ACI
Cloud / Onprem



cisco.aci

Nexus
Dashboard



cisco.nd
cisco.mso
cisco.nae

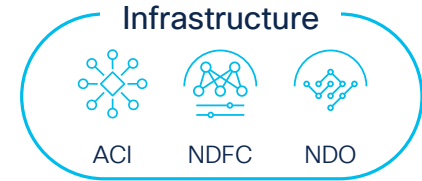
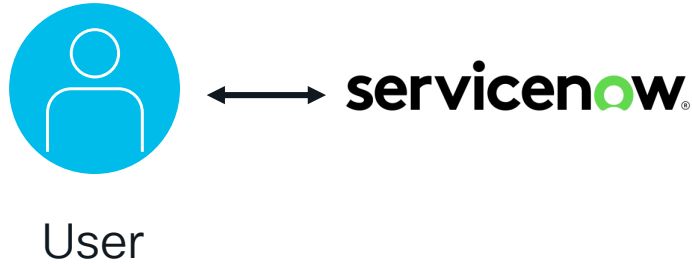
Nexus
Dashboard
Fabric Controller



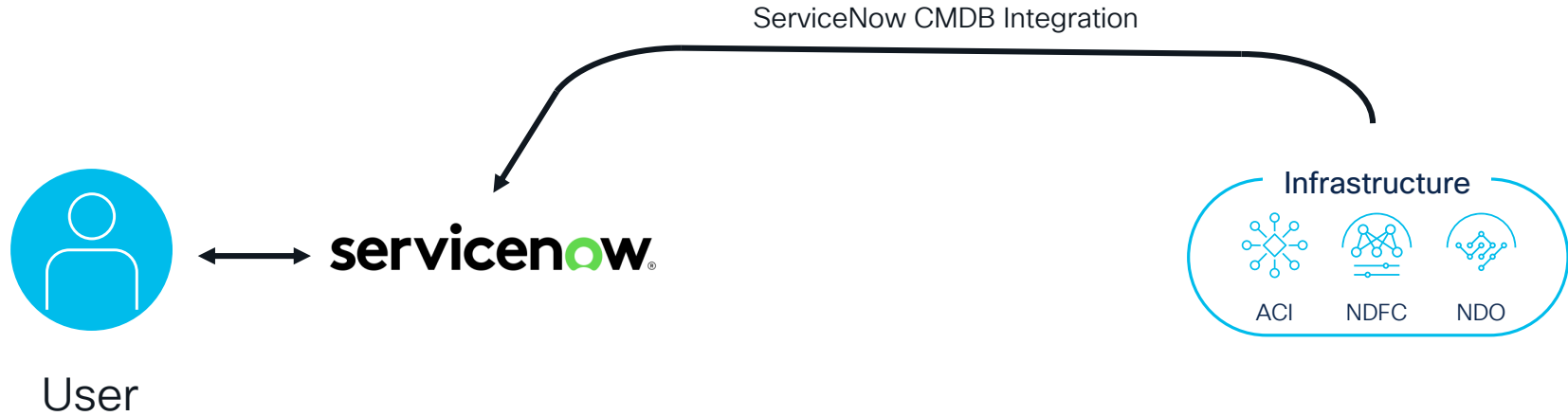
cisco.dcnm

All Cisco collections can be found here: <https://galaxy.ansible.com/cisco/>

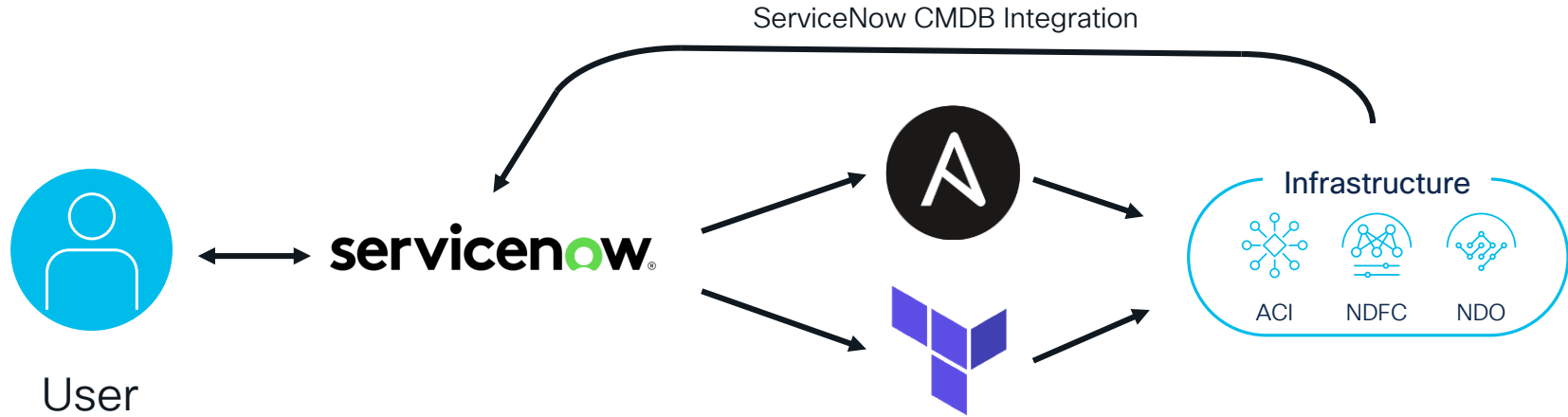
ServiceNow as a Service Catalog for Automation



ServiceNow as a Service Catalog for Automation



ServiceNow as a Service Catalog for Automation



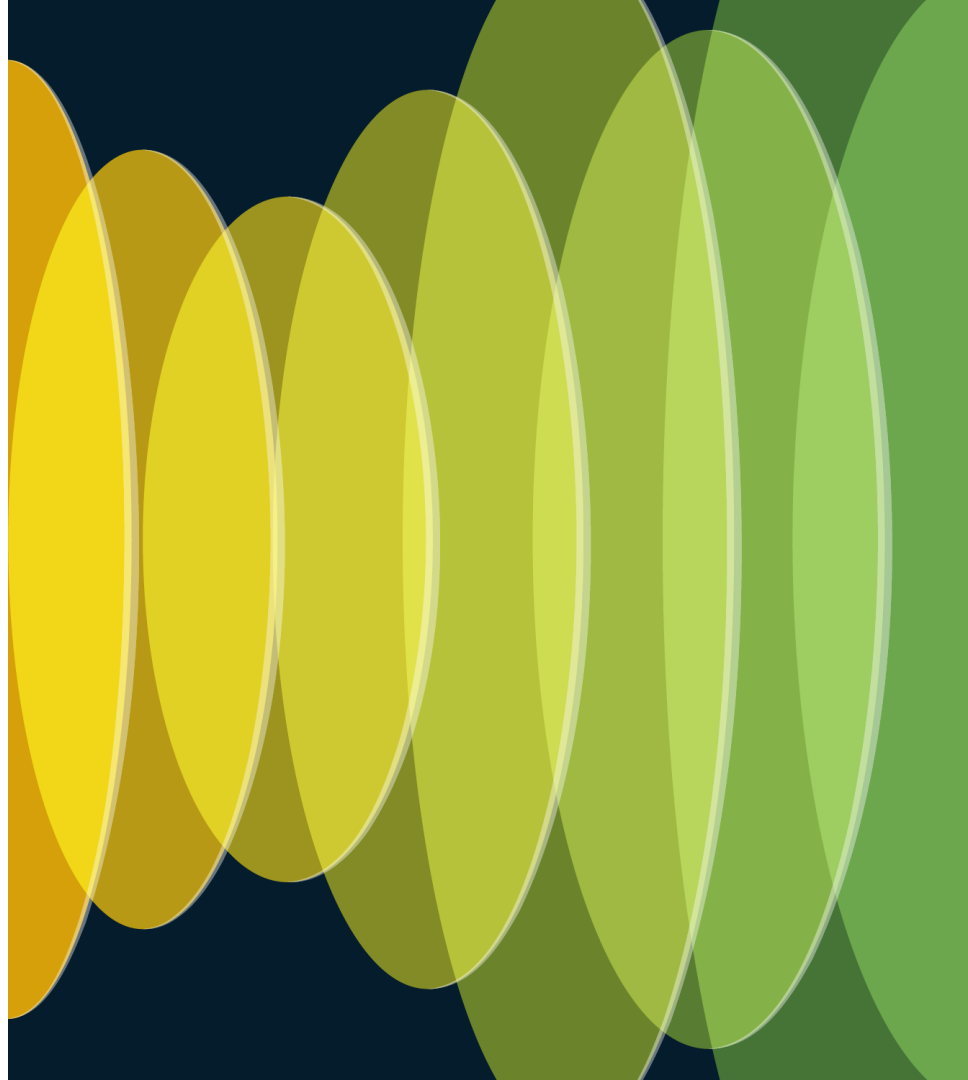
ServiceNow as a Service Catalog for Automation

- Step 1: Gathering the inputs from the User
- Step 2: Processing the inputs, approvals and formatting the data
- Step 3: Making the change to the infrastructure

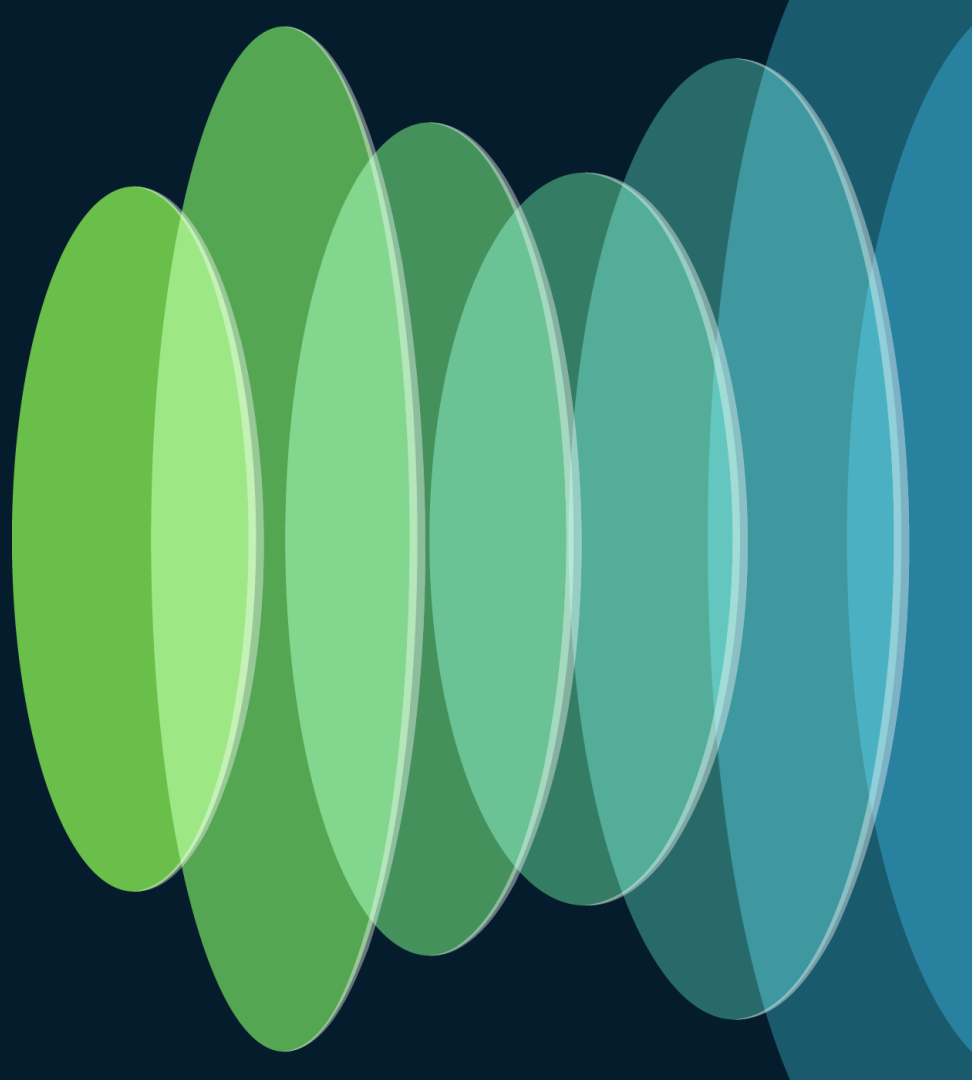
ServiceNow as a Service Catalog for Automation

- Step 1: Gathering the inputs from the User
 - Catalogs, Catalog Items, References and CMDB Integrations
- Step 2: Processing the inputs, approvals and formatting the data
 - Flow Designer, Ansible Spoke and Terraform Integration
- Step 3: Making the change to the infrastructure
 - Terraform Cloud and Ansible Automation Platform (Tower)

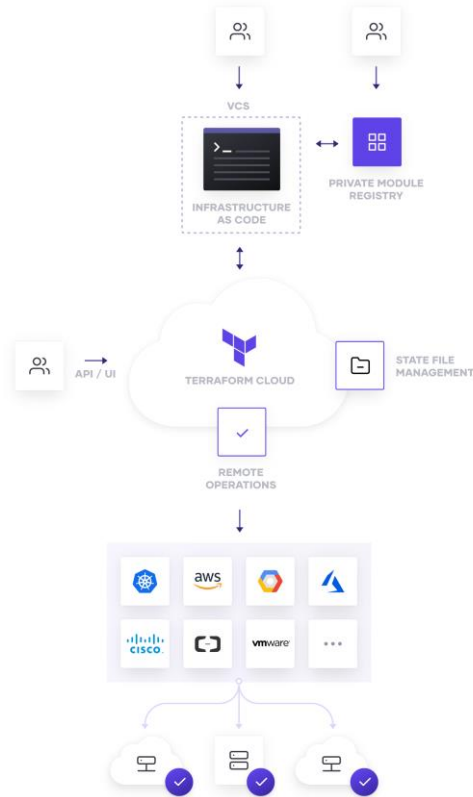
Let's see how it works!



Terraform Cloud and the ND Connector

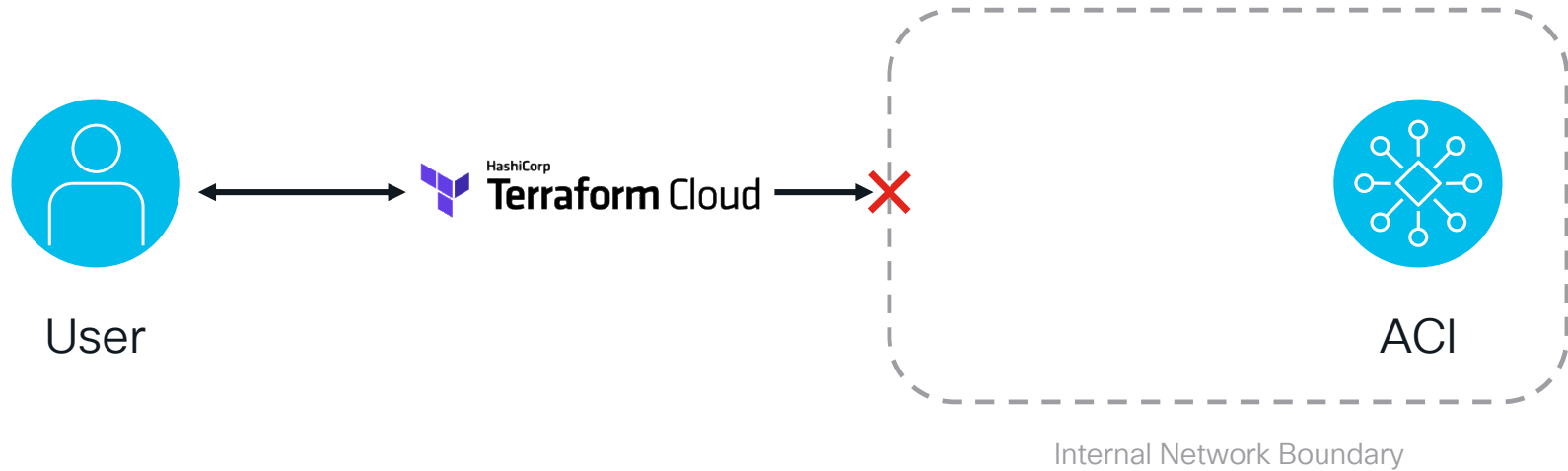


What is Terraform Cloud?

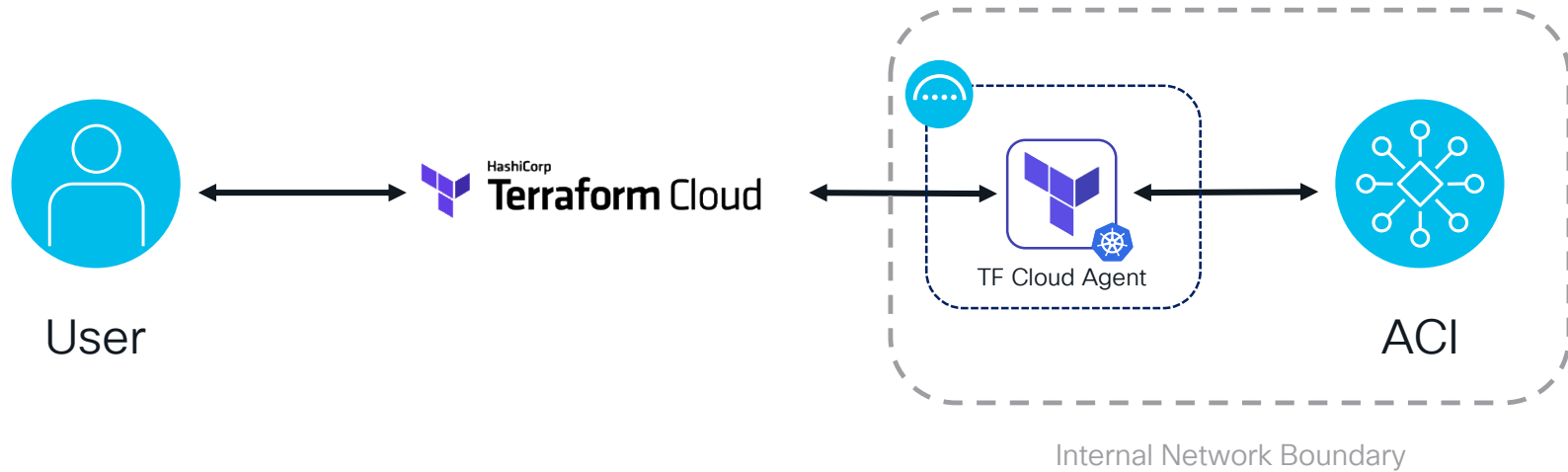


- HashiCorp Infrastructure as Code Cloud Service
- Can trigger plan, apply and destroy any Terraform plan.
- Can be triggered by a source control hook
 - A commit / PR to a repository can be used as a hook
- Provides Enterprise level features:
 - State File Management and Sharing
 - Private Module Registry
 - Config Compliance Checks (Sentinel)

Why do you need a Terraform Cloud Agent?



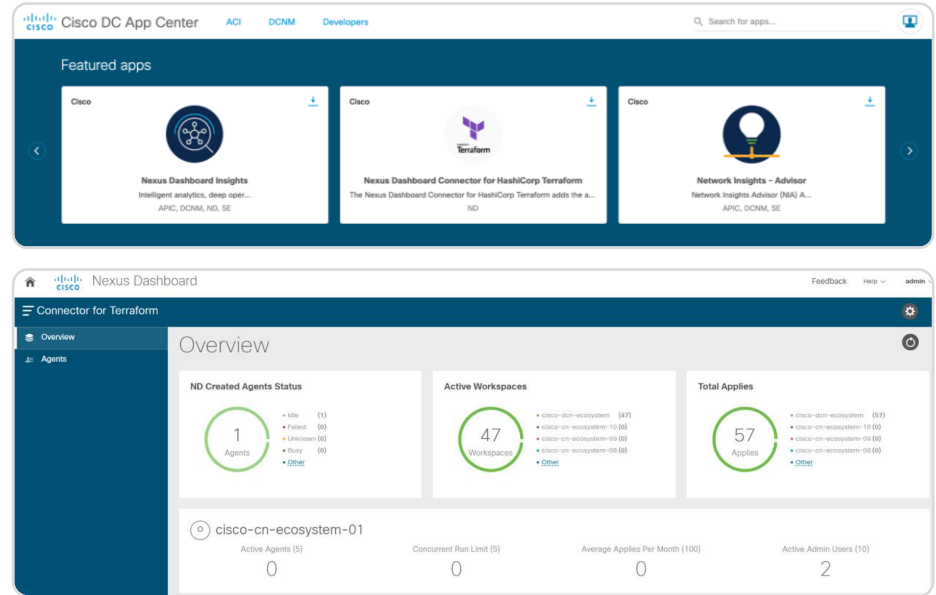
Why do you need a Terraform Cloud Agent?



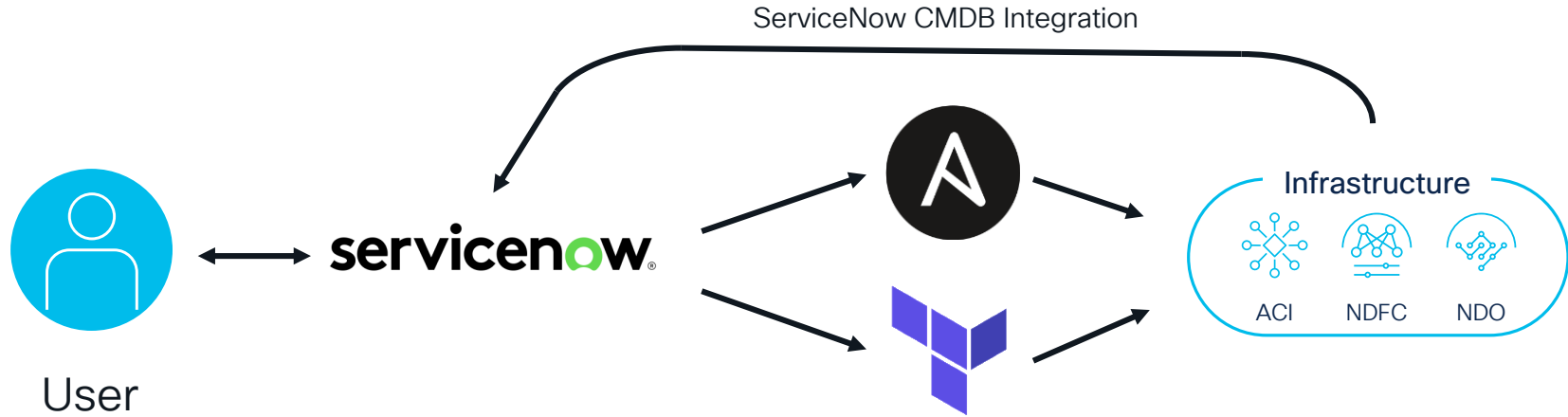
Nexus Dashboard Connector for Terraform

Overview

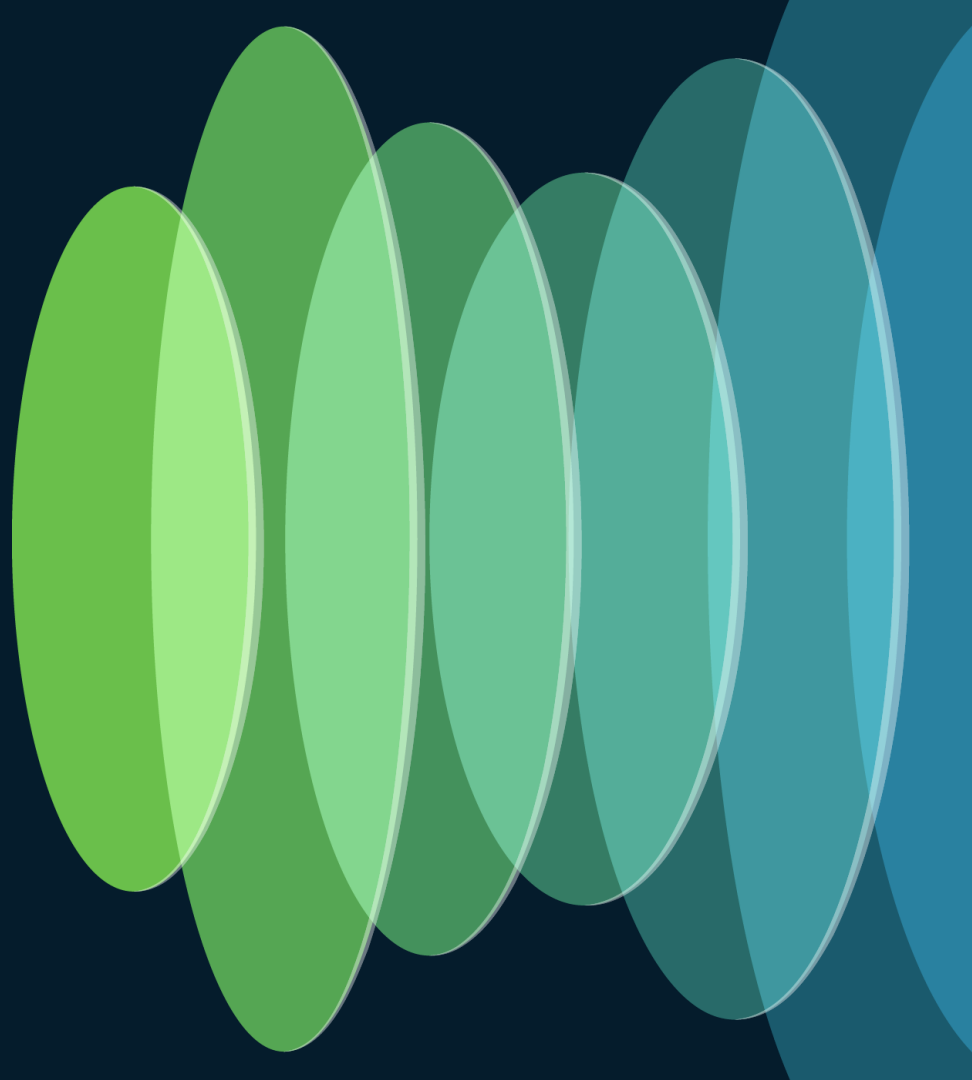
- ✓ Third-Party Connector running on the Nexus Dashboard
- ✓ Available as a free download from the DC App Center
- ✓ Acts as a hosting spot and life cycle manager for the Terraform Cloud Agent



ServiceNow as a Service Catalog for Automation



What about
CI/CD pipelines?



Integrating ServiceNow with GitHub

The screenshot shows the ServiceNow Store interface for the 'GitHub Spoke' integration. The top navigation bar includes the ServiceNow logo, a search bar with 'GitHub Spoke' entered, and a user profile icon. Below the navigation bar, the 'Integrations' tab is selected. The main content area features a large green banner for 'GitHub Spoke' with the text 'Simplify and accelerate how you integrate with GitHub'. Below the banner, it lists compatibility for Utah, Tokyo, San Diego, and Rome, and mentions that it is automatically entitled on all sub-prod instances. A 'Ready to install' button is visible on the right. The right sidebar contains details about the integration, including its type, version (2.2.5), dependencies, and subscription requirements. The bottom section shows a 'Summary' with an attention note about licensing and a list of actions available within the integration, such as 'Create Branch', 'Delete Branch', and 'Look up Branch'.

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Q GitHub Spoke Search

Apps and Solutions ServiceNow Products **Integrations** Innovation Lab Services Events

← Back to Search Results

GitHub Spoke
Simplify and accelerate how you integrate with GitHub
ServiceNow
Compatibility: Utah, Tokyo, San Diego, Rome | [Other App Versions](#)
Automatically entitled on all sub-prod instances, all ServiceNow instances and all ServiceNow developer portal instances

☆☆☆☆ No Reviews

Share With

Product Details ☆ Ratings and Reviews

Summary

ATTENTION: Use of this product requires a license for either Integration Hub Professional or Software Asset Management.

GitHub Spoke is a comprehensive spoke that provides many popular actions to perform branch management, issue management, organization management, repository management, source code management, and user management. It supercharges and streamlines integrations between ServiceNow and GitHub workflow right at your fingertips. With just drag-n-drop, several of the GitHub Spoke actions can be used in the Flow Designer. A user can create a branch, add comments on commits, open a pull request, merge a pull request, and delete a branch. GitHub Spoke makes the branch management lifecycle way easier.

Ready to install

[Why is "Manage Entitlements" missing?](#)

Type
Integration

Version
2.2.5
[Other App Versions](#)

Dependencies and Licensing
[View Dependencies and Licensing Requirements](#)

Subscription Required
No

Compatibility
Utah
Tokyo
San Diego
Rome

Supporting Links and Docs
[ServiceNow Store Terms Of Use](#)
[ServiceNow Store App Addendum](#)
[GitHub spoke documentation \(Rome\)](#)

Actions

Q Search Actions

- DocuSign
- Dropbox Business
- FS BIG-IP
- First Advantage
- Flow Templates for Docum...
- GitHub**
- GitLab

Branch Management

- Create Branch
- Delete Branch
- Look up Branch
- Look up Branch Protection

You do not have a IntegrationHub subscription for this spoke.

Key Takeaways

- Cisco DC Networking has a deep integration with ServiceNow
- The new DC Networking Inventory Integration will bring a lot of new features and capabilities
- ACI, NDFC, NDO, N9K, NDI, they can all be integrated with ServiceNow

References

- BRKDCN-2969: Managing your data center network with ServiceNow
- BRKOPS-2032: 3 Cisco DNA Center and ITSM Workflows
- BRKSEC-2122: Leveraging Cisco's XDR solution with IT Service Management (ITSM) and SIEM Systems for Incident Investigation -
- BRKOPS-2471: Custom Workflows for the Cisco DNA Center integration with ServiceNow
- ServiceNow Store: <https://store.servicenow.com/>
- dCloud: <https://dcloud2-lon.cisco.com/content/instantdemo/cisco-nexus-dashboard-insights-for-aci-v3-1>

Complete Your Session Evaluations



Complete a minimum of 4 session surveys and the Overall Event Survey to be entered in a drawing to **win 1 of 5 full conference passes** to Cisco Live 2025.



Earn 100 points per survey completed and compete on the Cisco Live Challenge leaderboard.



Level up and earn **exclusive prizes!**



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- Book your one-on-one Meet the Engineer meeting
- Attend the interactive education with DevNet, Capture the Flag, and Walk-in Labs
- Visit the On-Demand Library for more sessions at www.CiscoLive.com/on-demand



The bridge to possible

Thank you

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