



# Introduction to NDFC:

## Simplifying Management of Your Data Center

Richard Licon  
Principal Technical Marketing Engineer  
BRKDCN-1619

# Webex App

## Questions?

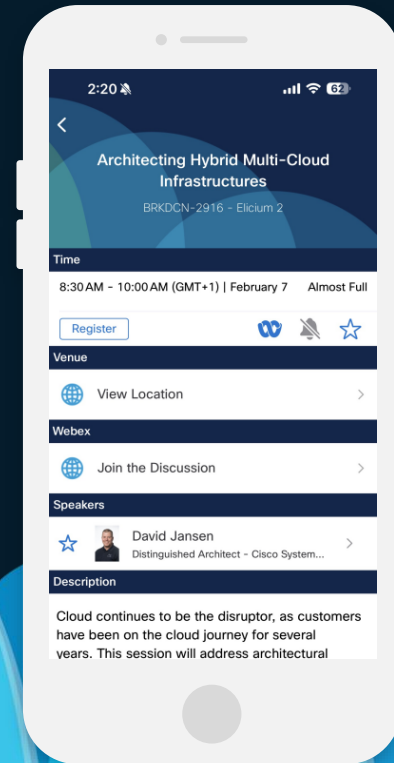
Use the Webex app to chat with the speaker after the session

## How

- 1 Find this session in the Cisco Events 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 February 28, 2025.

**CISCO** *Live!*



# Agenda

- Introduction to NDFC
- Automation
- Automation Demo
- Management
- Visibility
- Summary

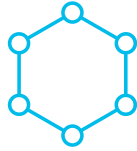
# The new normal is a hyper-distributed, extremely diverse IT landscape



# And your world is constantly changing...



# How do you adapt to change now and stay in control for the future?



Connectivity



Operations



App experience



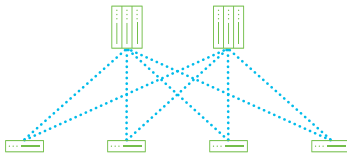
# The Need for a Controller

Automation

Observability



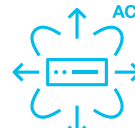
Consolidated Management



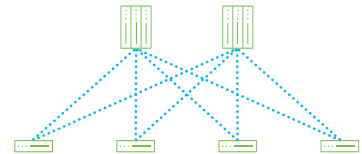
Cisco NX-OS Fabric



NDFC



APIC

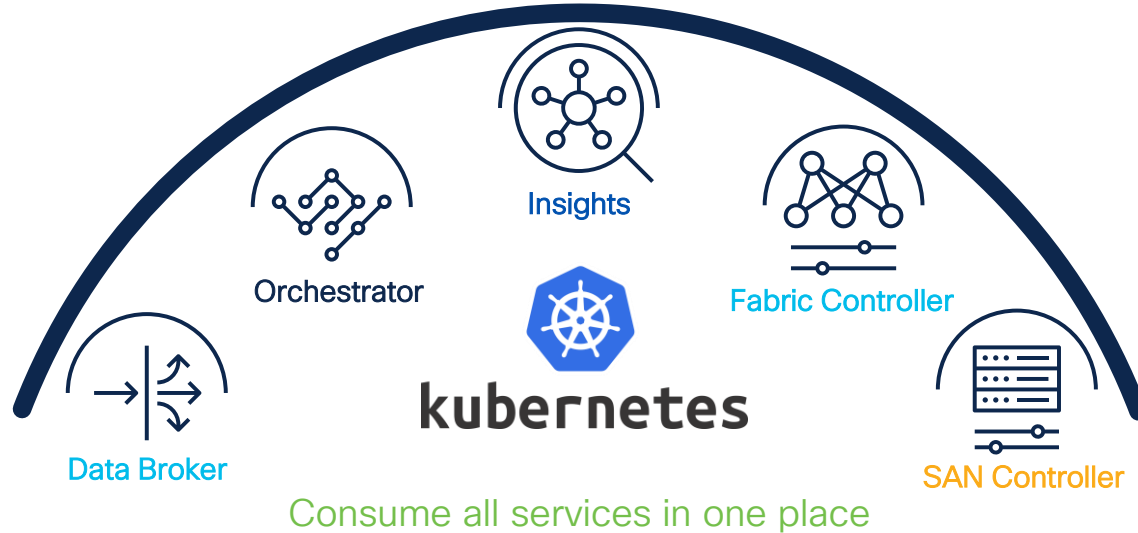


Cisco ACI Fabric

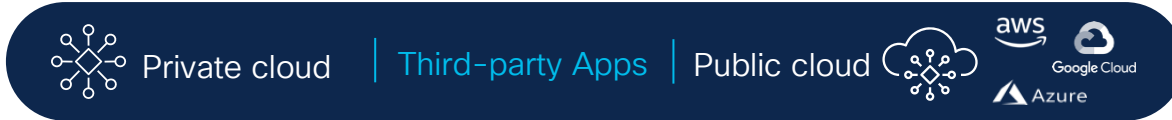
# Cisco Nexus Dashboard

Simple to automate, simple to consume

Powering automation  
Unified agile platform



Consume all services in one place



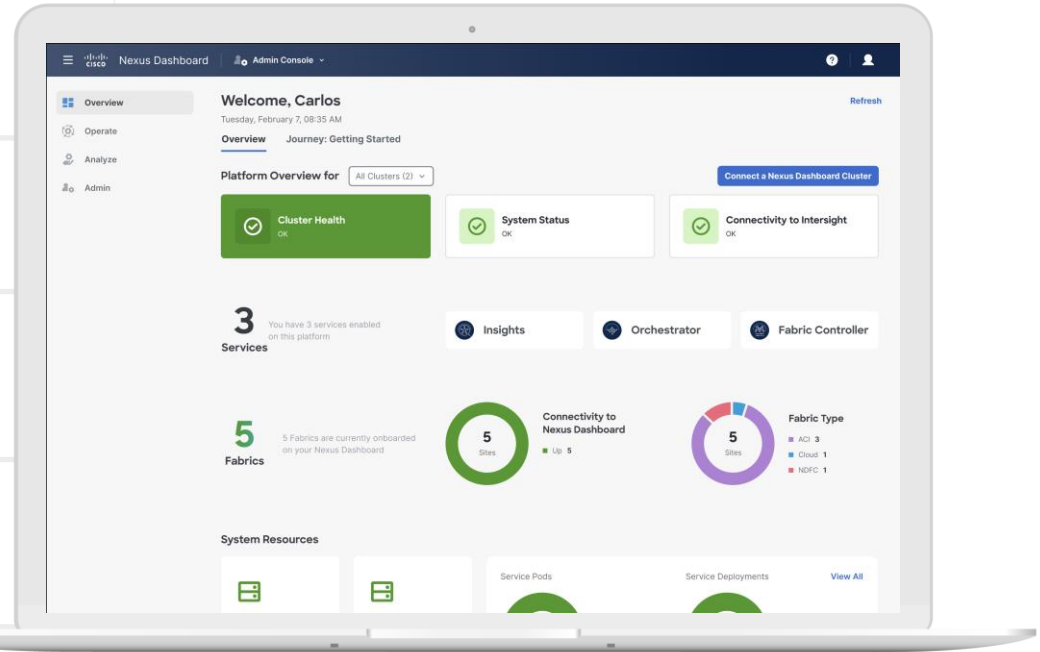
# Cisco Nexus Dashboard

Microservices architecture

Supported on both Virtual and Physical ND

Multi-cluster support

3-node active-active High Availability



Increased flexibility and scalability

Highly customizable

Single pane of glass view



# Cisco Nexus Dashboard

## Unified experience – Install & Upgrade



1

All Services (NDO, NDI, NDFC) and integrations are part of product shipment, install and upgrade images

2

Single Product version starting from ND 3.1 release following semantic versioning

3

Ability to enable/disable and erase any feature-based services (NDO, NDI, NDFC)

4

First step in the journey to make Cisco Nexus Dashboard a single product unifying all services

Benefit

Single product versioning

Ease of Use

# Nexus Dashboard

## Form Factors



### Physical Form Factor

Appliance ND-NODE-L4  
1 or 3 nodes



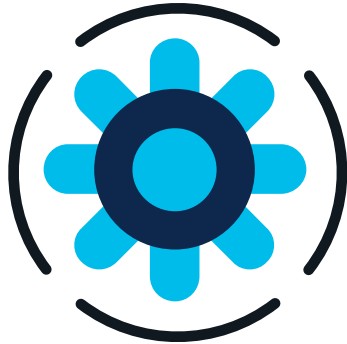
### Virtual Form Factor

VMware OVA or KVM  
1, 3 or 5 nodes



For details about supported form factors and maximum scale  
use [Nexus Dashboard Capacity Planning](#)

# Cisco Nexus Dashboard Fabric Controller



## Automation

Accelerate provisioning  
and simplify deployments



## Management

In depth Management  
and control for all  
network deployments

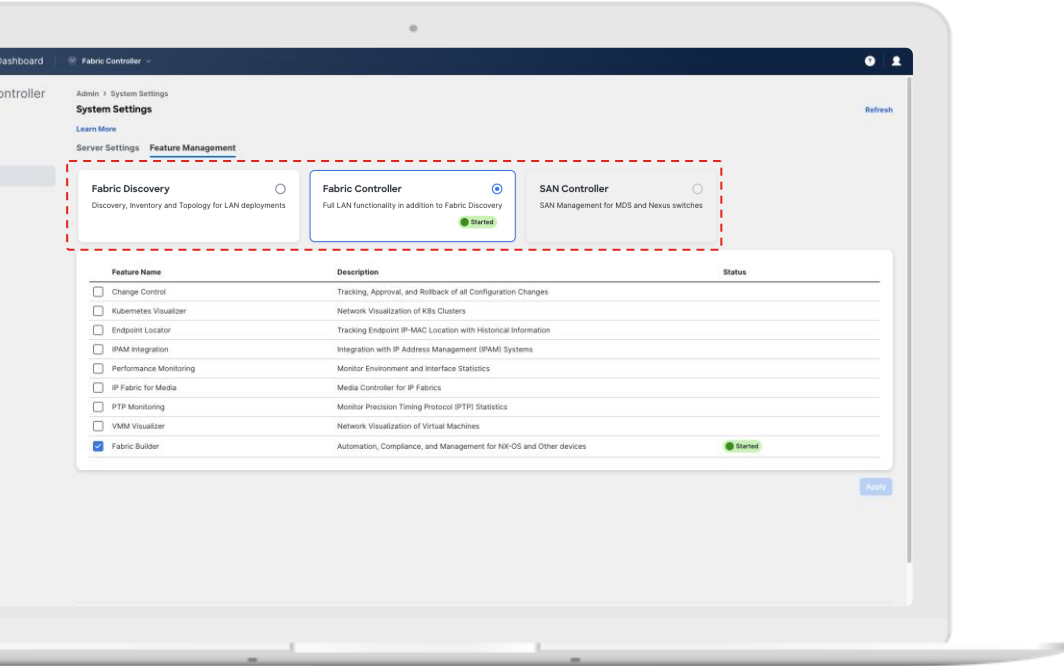


## Visibility

Get Centralized Visibility  
and Monitoring views

# Nexus Dashboard Fabric Controller

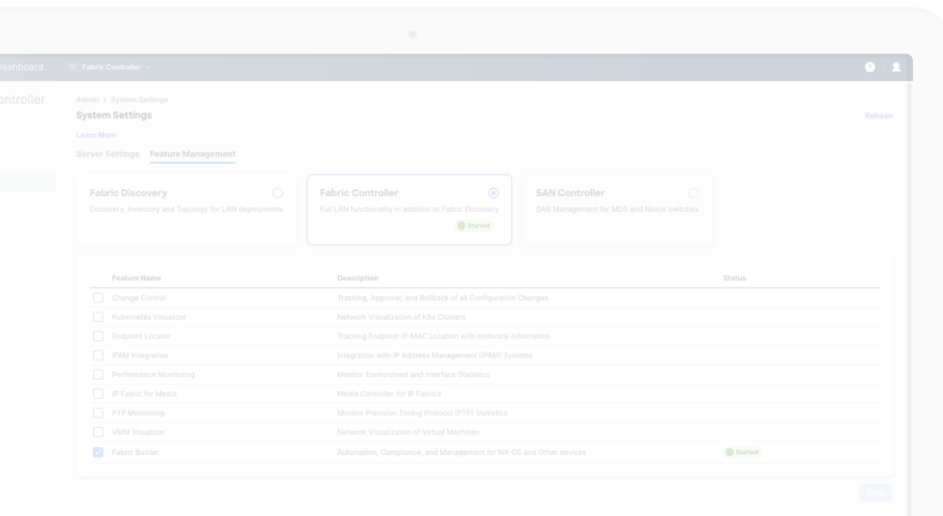
## Modes



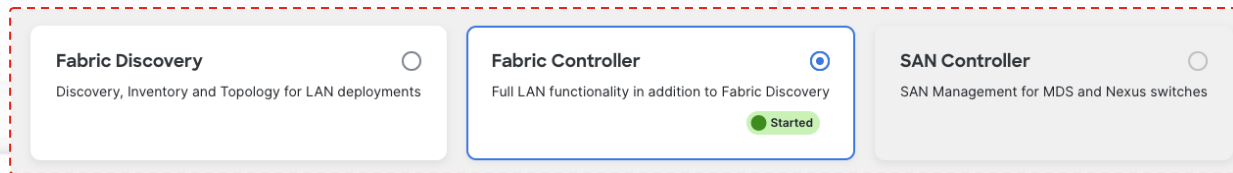
- Dynamically choose the persona of the NDFC cluster
  - Not all transitions between personas are supported
  - Some conditions may apply to support the change
- Additional features can be activated based on the NDFC mode
  - Upon activation, the required containers will be started

# Nexus Dashboard Fabric Controller

## Modes



- Dynamically choose the persona of the NDFC cluster
  - Not all transitions between personas are supported
  - Some conditions may apply to support the change
- Additional features can be activated based on the NDFC mode
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# Cisco Nexus Dashboard Fabric Controller Journey Map

The screenshot shows the Cisco Nexus Dashboard Fabric Controller interface. The top navigation bar includes the Cisco logo, 'Nexus Dashboard', and 'Fabric Controller'. The left sidebar lists 'Fabric Controller' with sub-items: Overview, Manage, Analyze, and Admin. The main content area is titled 'Overview' and has sub-tabs for 'Overview', 'Topology', and 'Journey'. The 'Journey' tab is active, displaying a 'Let's get started' section with a progress indicator showing 7 out of 7 steps completed. The steps are: Meet Fabric Controller, Service Setup, Create a Fabric, Add Switches, Controller View, Topology, and Connectivity. A 'Getting Started Progress' box on the right shows a 100% completion rate.

**Let's get started**  
Click each step below to discover different Fabric Controller features and finish setting up your fabrics

**Getting Started** | **What's New**

**Getting Started Progress**  
Nice work! Keep exploring to finish  
100% 7 out of 7 steps completed

- Meet Fabric Controller**  
Take a tour and learn the basics
- Service Setup**  
Choose an operational mode: SAN, LAN or IP Fabric for Media
- Create a Fabric**  
Defining your fabric type (Classic or VXLAN) and add switches to it
- Add Switches**  
All your switches in a single place
- Controller View**  
All your fabrics in a single place
- Topology**  
Visualize all your connections
- Connectivity**  
Learn how to configure switches and interfaces easily

# Nexus Dashboard Fabric Controller: Feature Manager

# NDFC Feature Manager

**Nexus Dashboard** | Fabric Controller

**Fabric Controller Overview**

- Overview
- Manage
- Analyze
- Admin
  - Admin
  - Switch Credentials
  - Licensing
  - Certificate Management
  - Backup and Restore
  - System Settings

**Overview** | Overview | Topology | Journey

**Fabric Health Warning**  
status of 1 fabric out of 1 is Warning

**Fabric Health**  
CL-US-2024 **WARNING**

**Switches Configuration**  
5 Switches | In-Sync 5

**Alarms**  
3 Total  
Major (1) | Warning (2)

**Switches**

- Switch Health: 5 Healthy
- Switch Roles: 5 Switches (leaf 3, spine 2)
- Switch Hardware Version: 5 Switches (N9K-C9300v)
- Switch Software Version: 5 Switches (10.4(2))

**Performance Collector**  
Worker-1

**Reports**

# NDFC Feature Manager

**System Settings** Refresh

Server Settings **Feature Management**

- Fabric Discovery**  Discovery, Inventory and Topology for LAN deployments
- Fabric Controller**  Full LAN functionality in addition to Fabric Discovery Started
- SAN Controller**  SAN Management for MDS and Nexus switches

Feature Name	Description	Status
<input type="checkbox"/> Change Control	Tracking, Approval, and Rollback of all Configuration Changes	
<input type="checkbox"/> Kubernetes Visualizer	Network Visualization of K8s Clusters	
<input checked="" type="checkbox"/> Endpoint Locator	Tracking Endpoint IP-MAC Location with Historical Information	Started
<input type="checkbox"/> IPAM Integration	Integration with IP Address Management (IPAM) Systems	
<input type="checkbox"/> Openstack Visualizer <span>beta</span>	Network Visualization of Openstack Clusters	
<input checked="" type="checkbox"/> Performance Monitoring	Monitor Environment and Interface Statistics	Started
<input type="checkbox"/> IP Fabric for Media	Media Controller for IP Fabrics	
<input type="checkbox"/> PTP Monitoring	Monitor Precision Timing Protocol (PTP) Statistics	
<input type="checkbox"/> VMM Visualizer	Network Visualization of Virtual Machines	
<input checked="" type="checkbox"/> Fabric Builder	Automation, Compliance, and Management for NX-OS and Other devices	Started

Apply

# NDFC Feature Manager

**System Settings** Refresh

**Feature Management**

- Fabric Discovery** (Started)  
Discovery, Inventory and Topology for LAN deployments
- Fabric Controller** (Started)  
Full LAN functionality in addition to Fabric Discovery
- SAN Controller** (Started)  
SAN Management for MDS and Nexus switches

Feature Name	Description	Status
<input type="checkbox"/> Change Control	Tracking, Approval, and Rollback of all Configuration Changes	
<input checked="" type="checkbox"/> Kubernetes Visualizer	Network Visualization of K8s Clusters	Starting
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<input type="checkbox"/> IPAM Integration	Integration with IP Address Management (IPAM) Systems	
<input type="checkbox"/> Openstack Visualizer <small>BETA</small>	Network Visualization of Openstack Clusters	
<input checked="" type="checkbox"/> Performance Monitoring	Monitor Environment and Interface Statistics	Started
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<input checked="" type="checkbox"/> VMM Visualizer	Network Visualization of Virtual Machines	Starting
<input checked="" type="checkbox"/> Fabric Builder	Automation, Compliance, and Management for NX-OS and Other devices	Started

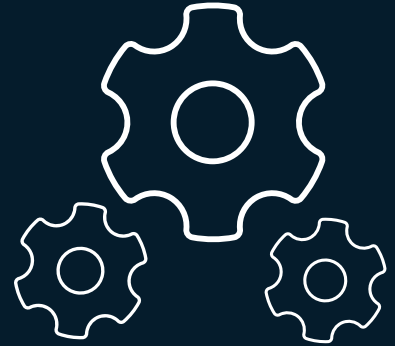
Apply

# NDFC Feature Manager

The screenshot displays the 'System Settings' page for 'Fabric Controller' in the 'Feature Management' section. It features three main cards: 'Fabric Discovery' (Status: Off), 'Fabric Controller' (Status: Started), and 'SAN Controller' (Status: Off). Below these is a table of features with checkboxes and status indicators. Red arrows highlight the 'Starting' status of the 'Kubernetes Visualizer' and 'VMM Visualizer' features.

Feature Name	Description	Status
<input type="checkbox"/> Change Control	Tracking, Approval, and Rollback of all Configuration Changes	
<input checked="" type="checkbox"/> Kubernetes Visualizer	Network Visualization of K8s Clusters	Starting
<input checked="" type="checkbox"/> Endpoint Locator	Tracking Endpoint IP-MAC Location with Historical Information	Started
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<input checked="" type="checkbox"/> Fabric Builder	Automation, Compliance, and Management for NX-OS and Other devices	Started

# NDFC Automation



# Automation



## Accelerate provisioning from days to minutes

Easy-to-understand approach to auto-bootstrapping of entire fabric

Rapid deployment with fabric builder best-practice templates for VXLAN EVPN, classic Ethernet

DevOps friendly

Enhanced programmability

Scale within and across data centers

## Benefits

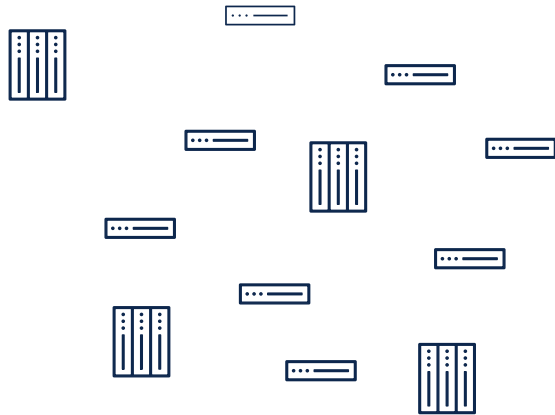
Simplify fabric deployments

Developer agility

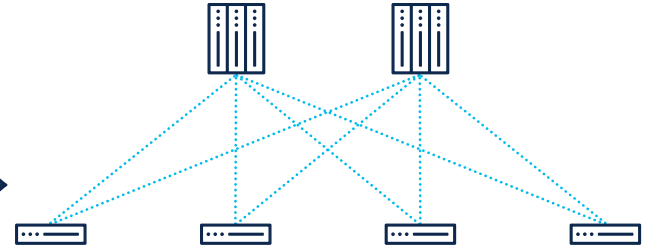
Multisite

# Provision a new fabric in minutes

Unprovisioned switches



Cisco best practice implemented



Fast, automated process



Benefits



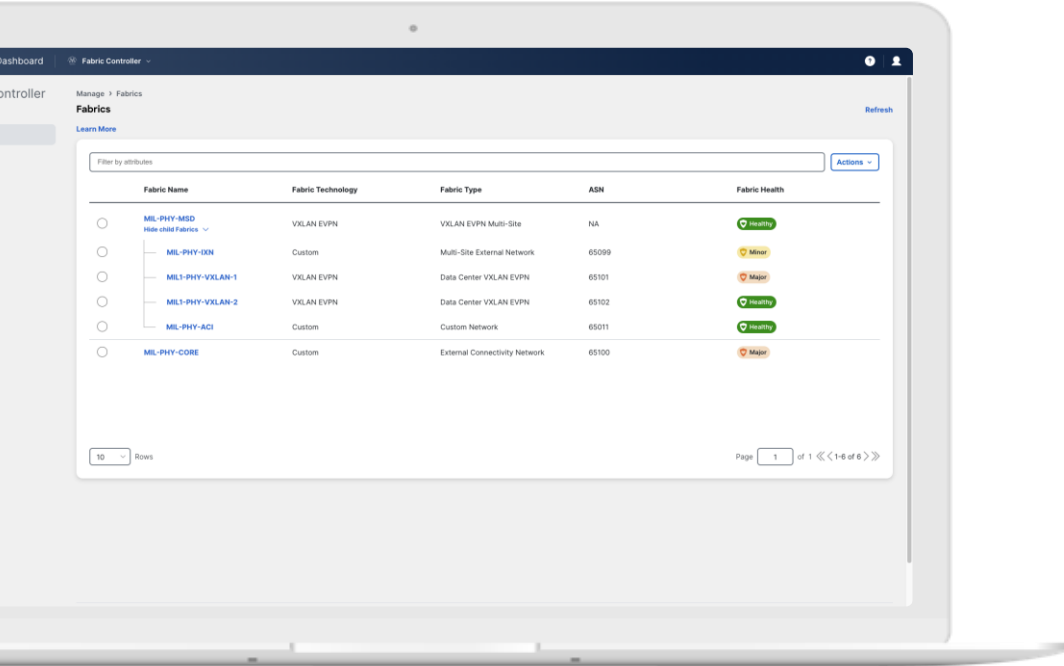
Accelerated fabric deployments

Automated consistency

Minimize risk

# Manage Fabrics

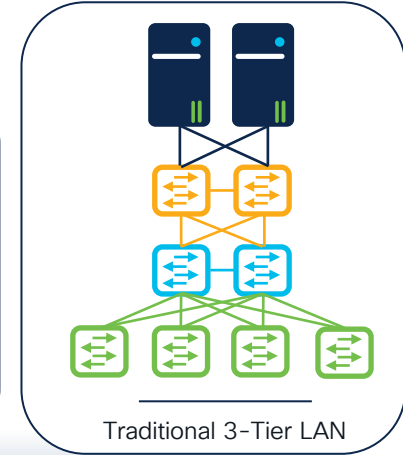
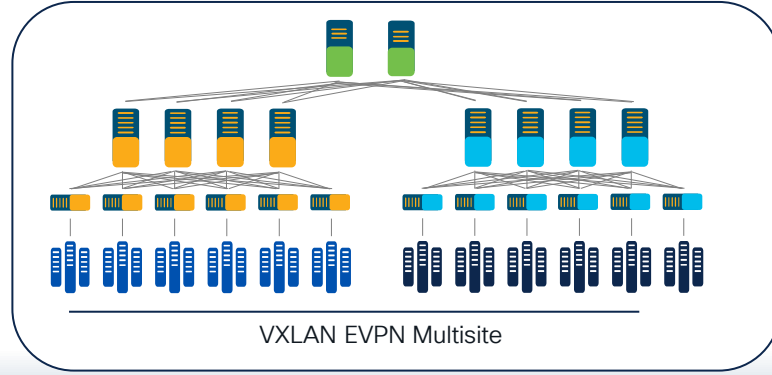
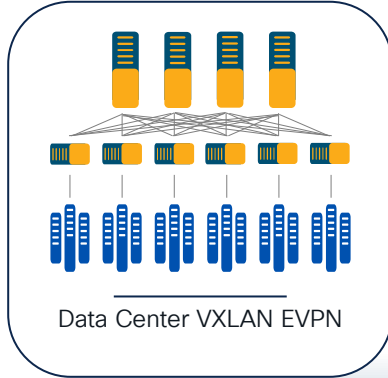
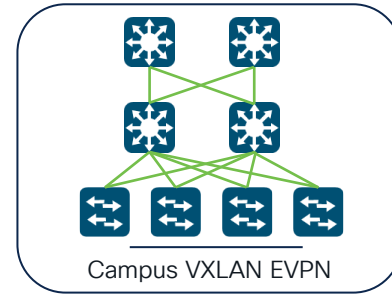
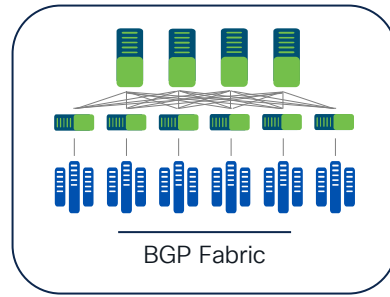
## Fabric Types



- Fabrics group different switches, each of them might have different roles
  - Each switch under the same fabric share a common set of policies and resources
- Different fabrics types can be provisioned on Nexus Dashboard Fabric Controller
  - Each fabric type has an associated template that embeds the rules required for deploying the fabric.
  - Templates include all the logic to generate the intended configuration based on Cisco Best Practices and guidelines.

# Fabric Builder

## Multi-architecture

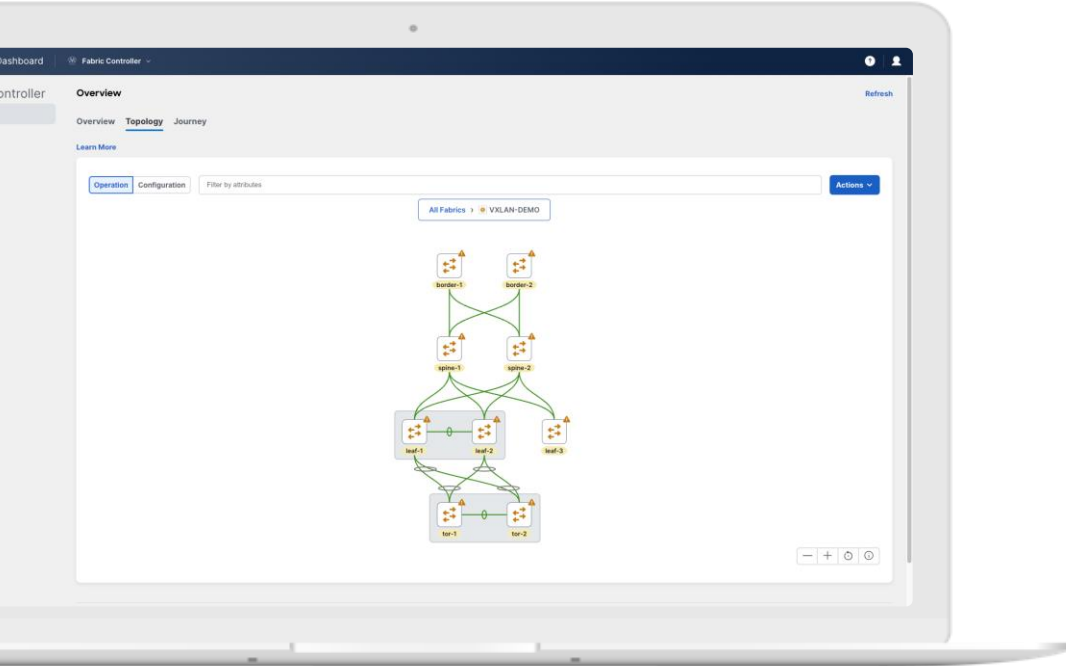


# Fabric Templates Summary

Type of Fabric	Description
Data Center VXLAN EVPN	Fabric for a VXLAN EVPN deployment with Nexus 9000 & 3000 switches.
Enhanced Classic LAN	Fabric for a fully automated 3-tier Classic LAN deployment with Nexus 9000 & 7000 switches.
Campus VXLAN EVPN	Fabric for a VXLAN EVPN Campus deployment with Catalyst 9000 switches & Nexus 9000 switches.
BGP Fabric	Fabric for an eBGP-based deployment with Nexus 9000 & 3000 switches. Optionally VXLAN EVPN can be enabled on top of the eBGP underlay.
Custom Network	Fabric for flexible deployments with a mix of Nexus and Non-Nexus devices.
Fabric Group	Domain that can contain Enhanced Classic LAN, Classic LAN, & External Connectivity Network fabrics.
Classic LAN	Fabric to manage a legacy Classic LAN deployment with Nexus switches.
LAN Monitor	Fabric for monitoring Nexus switches for basic discovery & inventory management.
VXLAN EVPN Multi-Site	Domain that can contain multiple VXLAN EVPN Fabrics with Layer-2/Layer-3 Overlay Extensions & other Fabric Types.
Multi-Site External Network	Network infrastructure is attached to Border Gateways to interconnect VXLAN EVPN fabrics for Multi-site and Multi-cloud deployments.
External Connectivity Network	Fabric for Core and Edge router deployments with a mix of Nexus and Non-Nexus devices.

# Manage Fabrics

## Fabric Types



## Data Center VXLAN EVPN

- Fabric for a VXLAN EVPN deployment with Nexus 9000 and 3000 switches.

# Campus VXLAN EVPN



Manage Catalyst VXLAN EVPN Deployments with NDFC



Support for configuration automation via Fabric Builder (Campus VXLAN EVPN fabric)

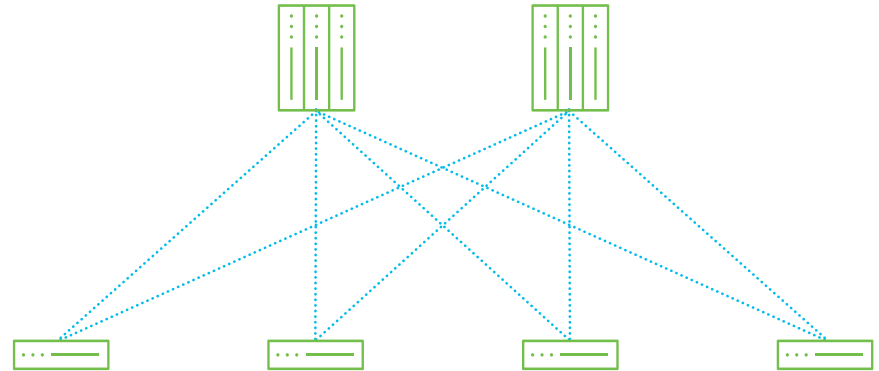


PNP, SWIM, RMA support

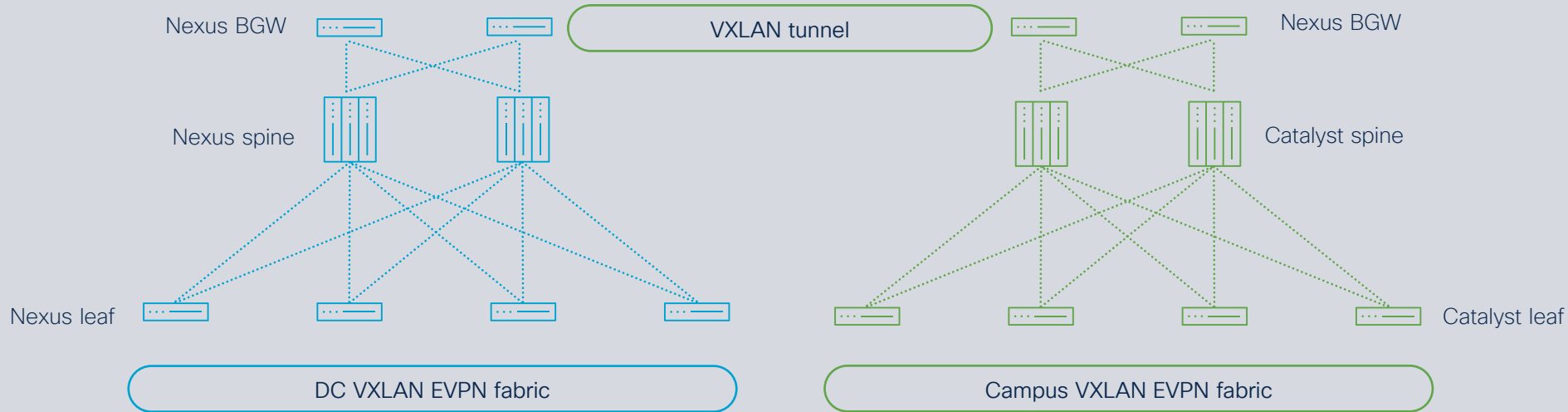


Catalyst switch performance monitoring

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# DC and Campus VXLAN EVPN Multi-Site



One Controller for DC and  
Campus automation

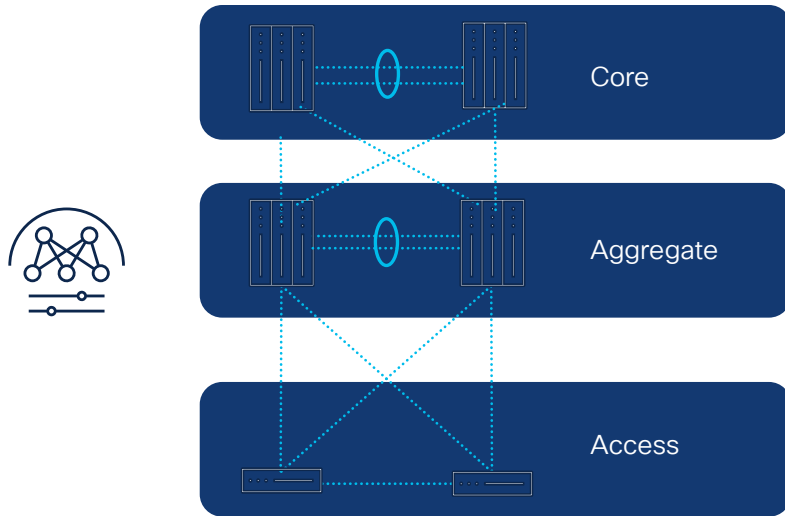
VRF stretch  
L2/L3 network stretch

Separate fault domains

Scale-out model

# Automate Layer 2 / Layer 3 deployments

## Enhanced Classic LAN



Fully automated fabric - enhanced classic LAN

Support for greenfield and brownfield deployments

Provisioning of 3-tier architecture/L2/L3 networks and VRFs

VRF-lite between aggregate and core

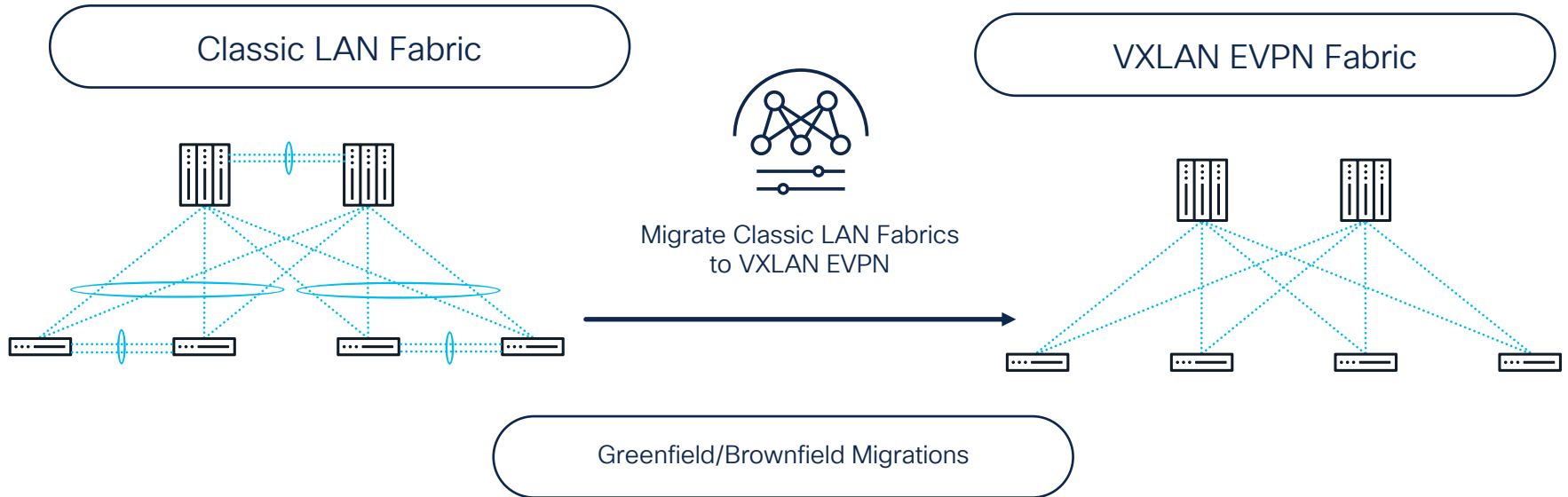
### Benefits

Best-practice templates

Simplified workflows

Flexibility based on customer needs

# Classic LAN to VXLAN EVPN Migration Support



## Benefits

Support for co-existence of both fabrics

Simplified migration workflow

Flexibility based on customer needs

# AI/ML Network Automation

Day0 Provisioning for AI/ML networks  
with Best Practice Templates

Custom QoS classification and marking

**Create Fabric**

N9K Cloud Scale Platform Queuing Policy  
Select an Option  
Queuing Policy for all 92xx, -EX, -FX, -FX2, -FX3, -GX series switches in the fabric

N9K R-Series Platform Queuing Policy  
Select an Option  
Queuing Policy for all R-Series switches in the fabric

Other N9K Platform Queuing Policy  
Select an Option  
Queuing Policy for all other switches in the fabric

Enable AI / ML QoS and Queuing Policies  
 Configures QoS and Queuing Policies specific to N9K Cloud Scale switch fabric for AI / ML network loads:

AI / ML QoS & Queuing Policy\*

AI\_Fabric\_QoS\_100G  
Queuing Policy based on predominant fabric link speed: 400G / 100G / 25G

AI\_Fabric\_QoS\_400G  
Enable MACsec in the fabric

AI\_Fabric\_QoS\_100G ✓

AI\_Fabric\_QoS\_25G  
Cisco Type 7 Encrypted Octet String

**Edit Interface(s)**

Additional CLI for the interface

Enable Interface\*  
 Uncheck to disable the interface

Enable Netflow  
 Netflow is supported only if it is enabled on fabric

Netflow Monitor  
Provide the Layer 3 Monitor Name

Netflow Sampler  
Netflow sampler name, applicable to N9K only

Enable priority flow control  
 Enable priority flow control

Enable QoS Configuration  
 Enable to configure a QoS Policy for this interface. If QoS is enabled on the fabric, all use the QoS\_CLASSIFICATION policy. Enter a custom policy below to override

Custom QoS Policy  
Custom QoS Policy must be defined previously

Custom Queuing Policy  
Queuing Policy must be defined previously

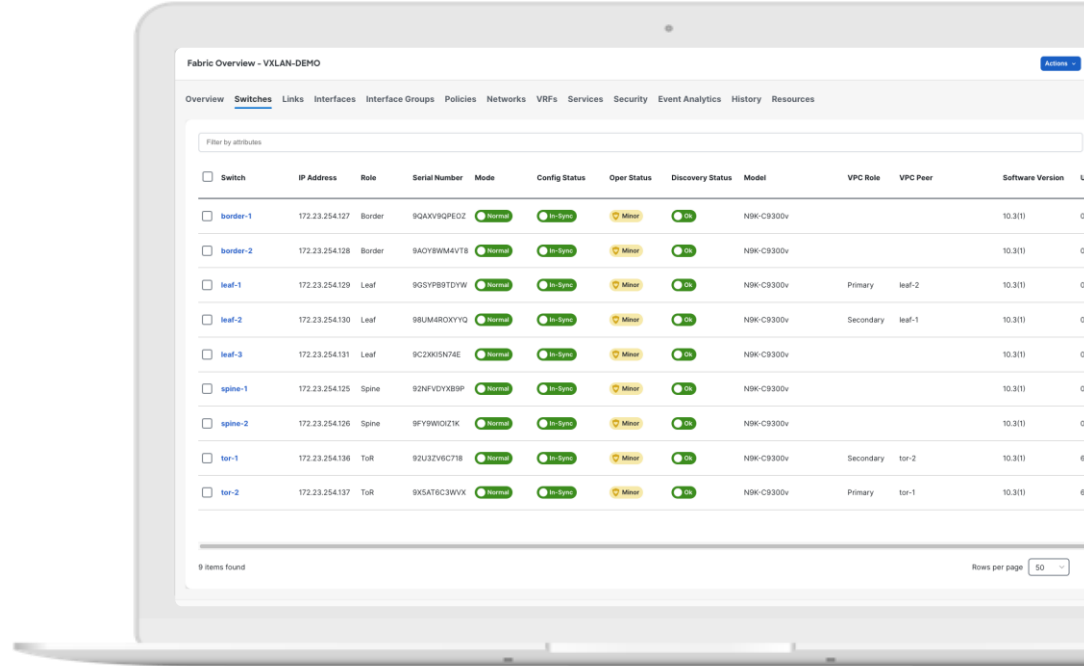
Benefits

Streamlined Automation for AI/ML deployments

# Switches

## Switches Overview

- Switches are the managed objects representing the device
- A switch can be associated with only one fabric
- Switches can be onboarded into NDFC using different mechanisms



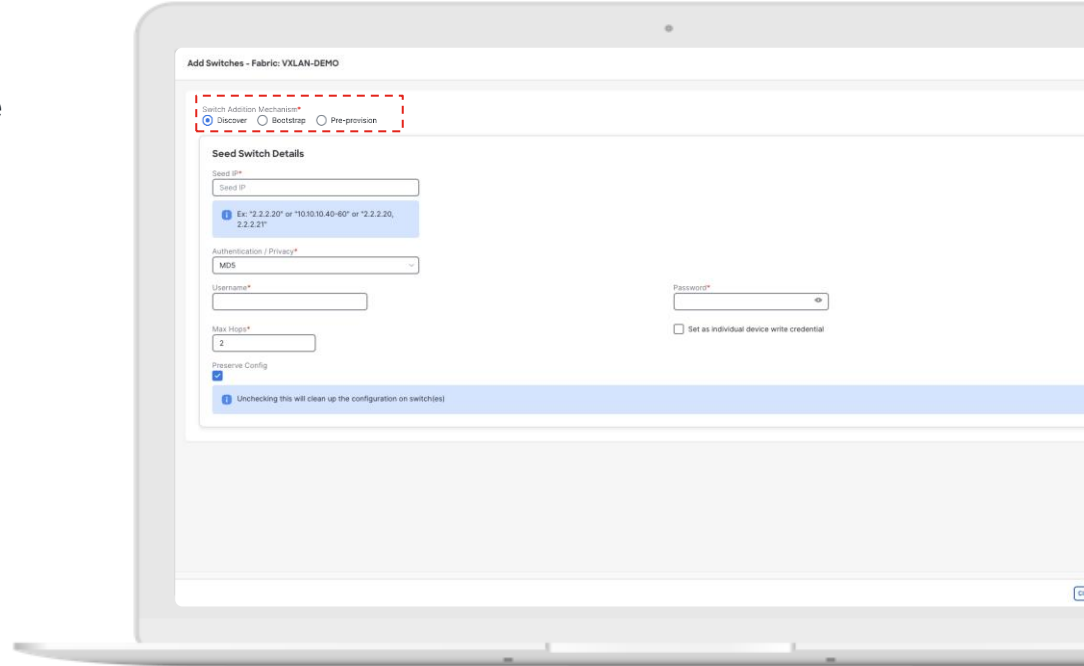
The screenshot displays the 'Fabric Overview - VXLAN-DEMO' interface. The 'Switches' tab is active, showing a table of 9 switches. The table columns include Switch, IP Address, Role, Serial Number, Mode, Config Status, Oper Status, Discovery Status, Model, VPC Role, VPC Peer, and Software Version. The switches listed are border-1, border-2, leaf-1, leaf-2, leaf-3, spine-1, spine-2, tor-1, and tor-2.

Switch	IP Address	Role	Serial Number	Mode	Config Status	Oper Status	Discovery Status	Model	VPC Role	VPC Peer	Software Version
border-1	172.23.254.127	Border	9QAXV9QPEGZ	Normal	In-Sync	Minor	OK	N9K-C9300v			10.3(1)
border-2	172.23.254.128	Border	8AC9BWM4VT8	Normal	In-Sync	Minor	OK	N9K-C9300v			10.3(1)
leaf-1	172.23.254.129	Leaf	9G5YP80TDYW	Normal	In-Sync	Minor	OK	N9K-C9300v	Primary	leaf-2	10.3(1)
leaf-2	172.23.254.130	Leaf	9BUM4ROXYIQ	Normal	In-Sync	Minor	OK	N9K-C9300v	Secondary	leaf-1	10.3(1)
leaf-3	172.23.254.131	Leaf	9C2XK5N74E	Normal	In-Sync	Minor	OK	N9K-C9300v			10.3(1)
spine-1	172.23.254.125	Spine	92NFVDYX8P	Normal	In-Sync	Minor	OK	N9K-C9300v			10.3(1)
spine-2	172.23.254.126	Spine	9FY9WQZ1K	Normal	In-Sync	Minor	OK	N9K-C9300v			10.3(1)
tor-1	172.23.254.136	ToR	92UJZV6C718	Normal	In-Sync	Minor	OK	N9K-C9300v	Secondary	tor-2	10.3(1)
tor-2	172.23.254.137	ToR	9K5AT6C3WVX	Normal	In-Sync	Minor	OK	N9K-C9300v	Primary	tor-1	10.3(1)

# Switches

## Switches Overview

- Three different mechanisms are available to add switches to a fabric:
  - Discover
  - Bootstrap (POAP)
  - Pre-Provision

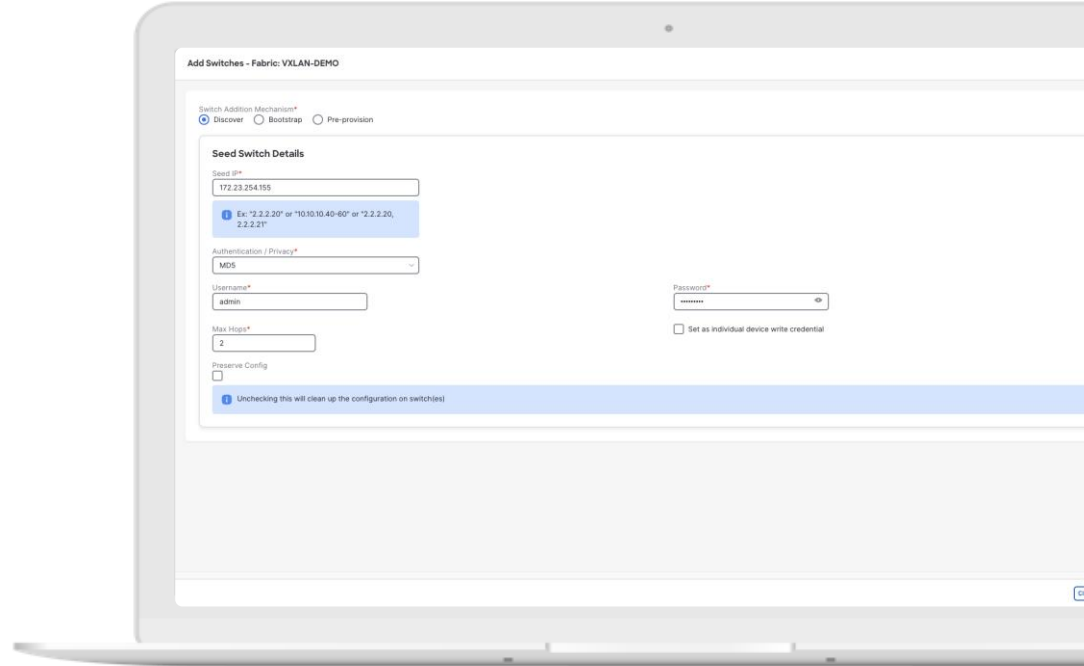


# Switches

## Switches Addition Mechanism

### Discover

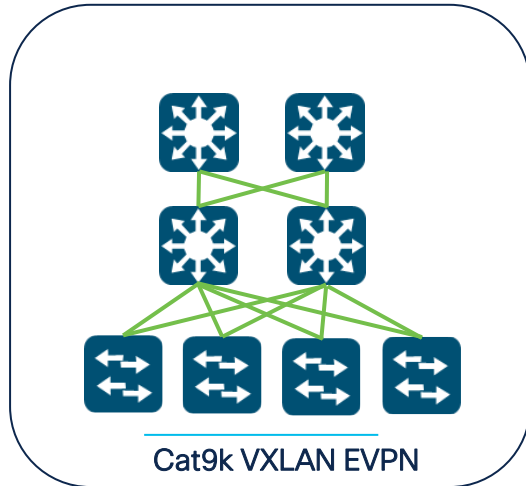
- Switches are discovered using the management IP address
  - Management IP can be either in-band or out-of-band
- Discovered switches can be used as Seed Switch to discover neighbouring devices
  - Max Hops determine how many times the process iterates
  - Requires CDP/LLDP\*



# Non-Nexus platform support

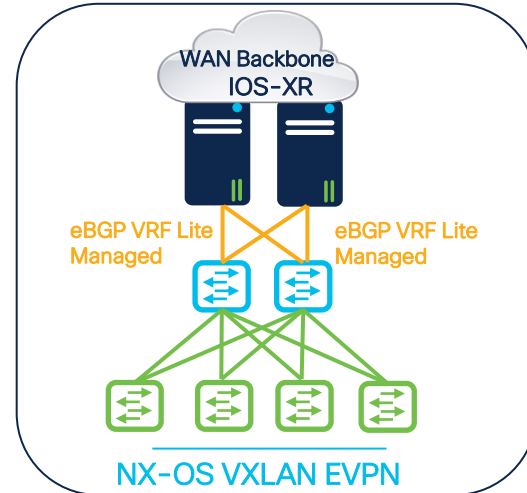
## IOS-XE Cat9k VXLAN EVPN Automation

NDFC supports Fabric Builder template for Cisco IOS-XE:  
Catalyst 9k VXLAN EVPN automation.



## IOS-XR ASR 9000/NCS5500 managed mode

NDFC supports config management for  
IOS-XR devices in External fabrics. Configuration  
compliance will also be enabled.



Increased functionality and support in NDFC for customers deploying non-Nexus switches

# Increase developer agility with NDFC DevOps

Integrations with  
Ansible and Terraform

Utilize GUI or automation  
through APIs



Accelerate deployments

Increase consistency

Minimize risk

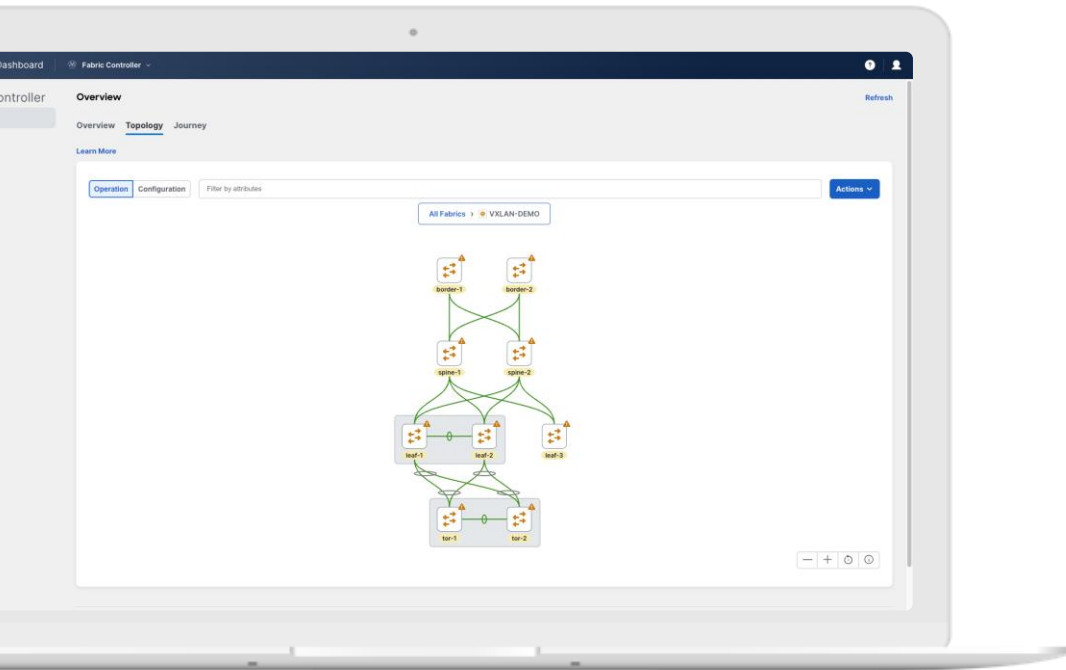
<https://developer.cisco.com/docs/nexus-as-code/#!ndfc-and-nx-os-introduction/introduction>

# Data Center EVPN VXLAN Automation Demo

# Topology

# Topology

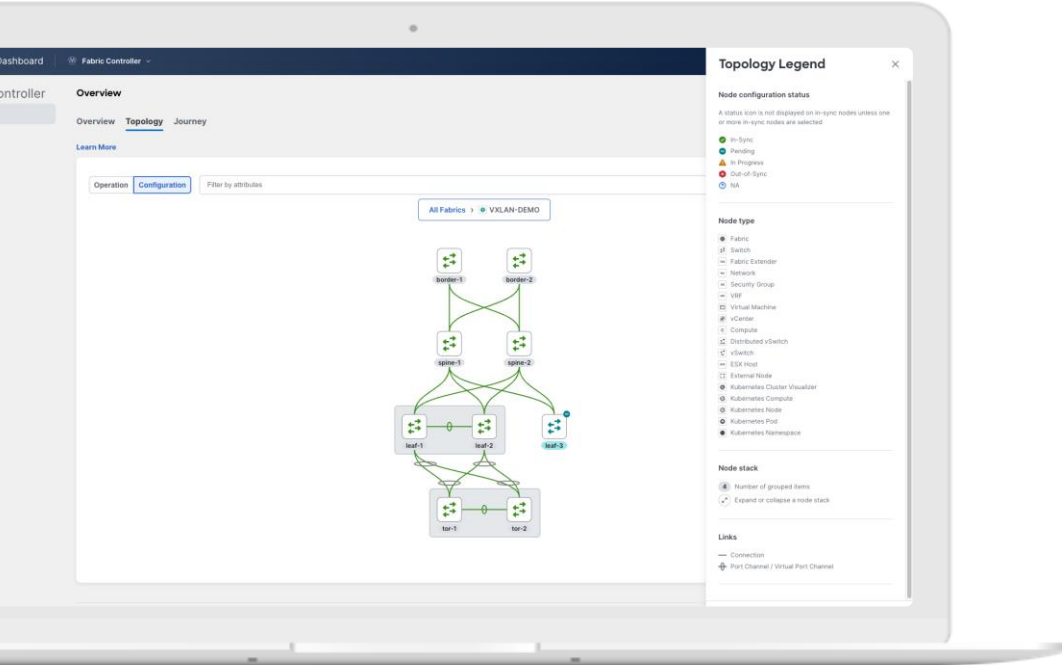
## Operational View



- The topology pane gives a quick overview on the fabric operational status
- Map is interactive:
  - More details will be shown doing single click on a node or interface
  - Additional options are displayed by right clicking on the nodes, like:
    - Manage Interfaces
    - Reload
    - Show Commands
    - ...

# Topology

## Configuration View

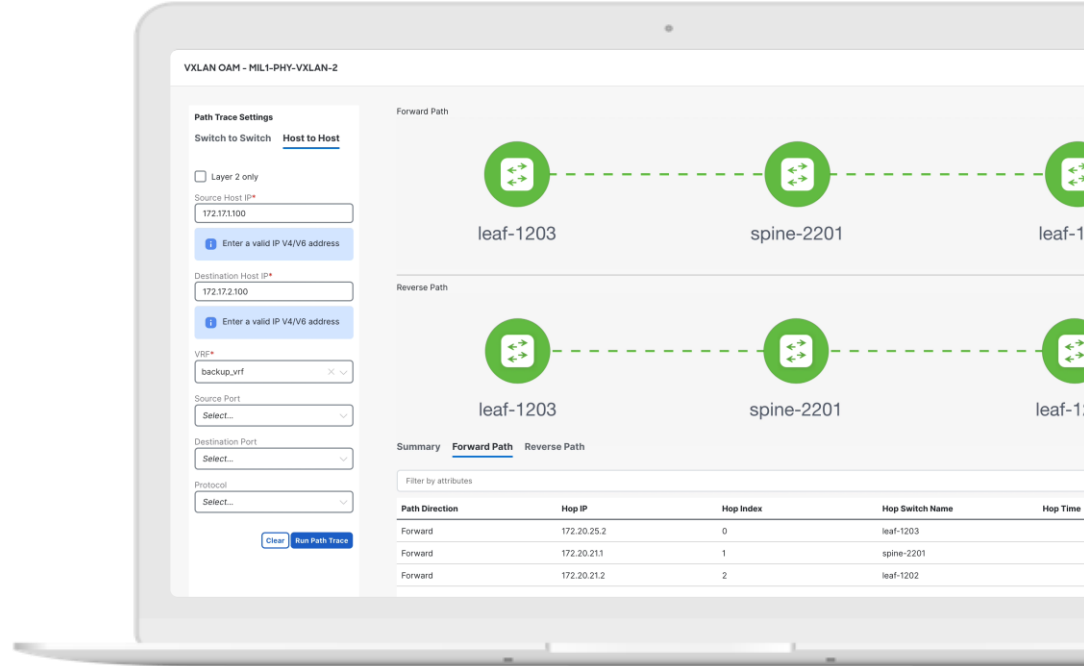


- Topology configuration view provides a quick overview on the configuration compliance
- NDFC compares the actual configuration with the one rendered based on the intent
  - If device is out-of-sync or configuration is pending to be applied, the administrator is notified
  - Config Deployment can be triggered from the topology itself

# Topology

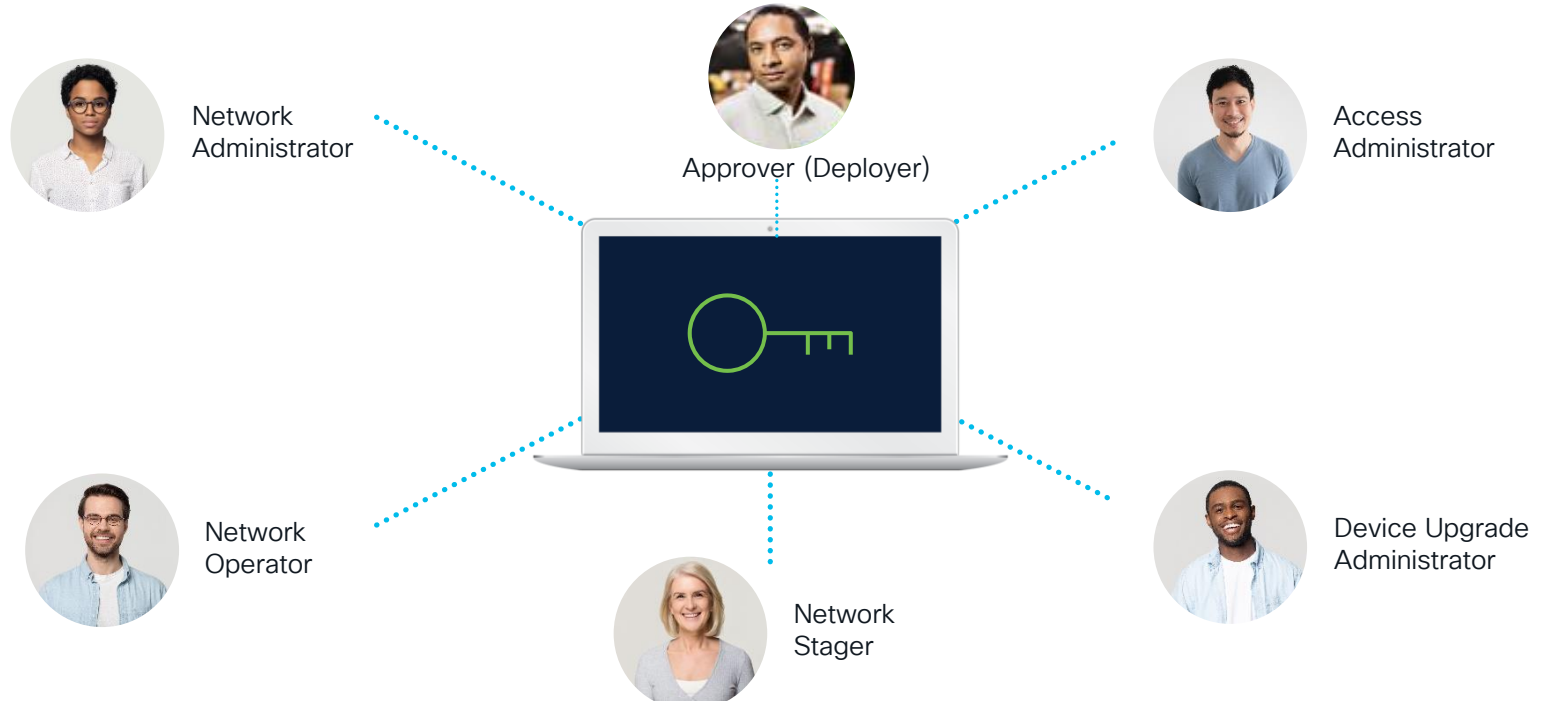
## VXLAN OAM

- The VXLAN operations, administration, and maintenance (OAM) is a powerful troubleshooting tool suite
- It is directly available from the Topology GUI and allows to perform different traces between switches or even host



# NDFC Management

# Role-based access control (RBAC)



Increase efficiency and productivity with granular roles orchestrated from Cisco Nexus Dashboard

# Change Control Management

## New user roles

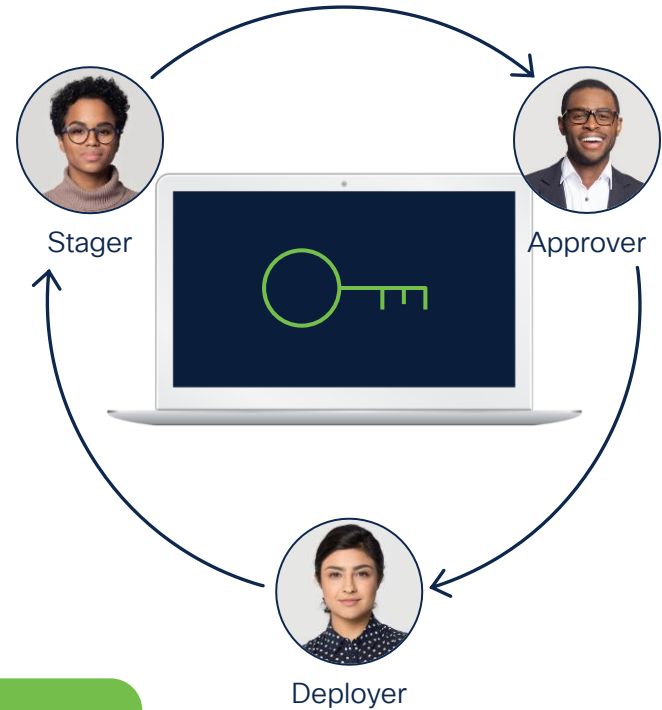
Enhanced RBAC with new roles and distinct user privileges

## Guided workflows

Workflows for user changes and approvals prior to deployment

## Rollback

Support to rollback changes at a granular level  
Pre-deploy rollback and Post-deploy rollback



Benefit

Simplified workflows for change control

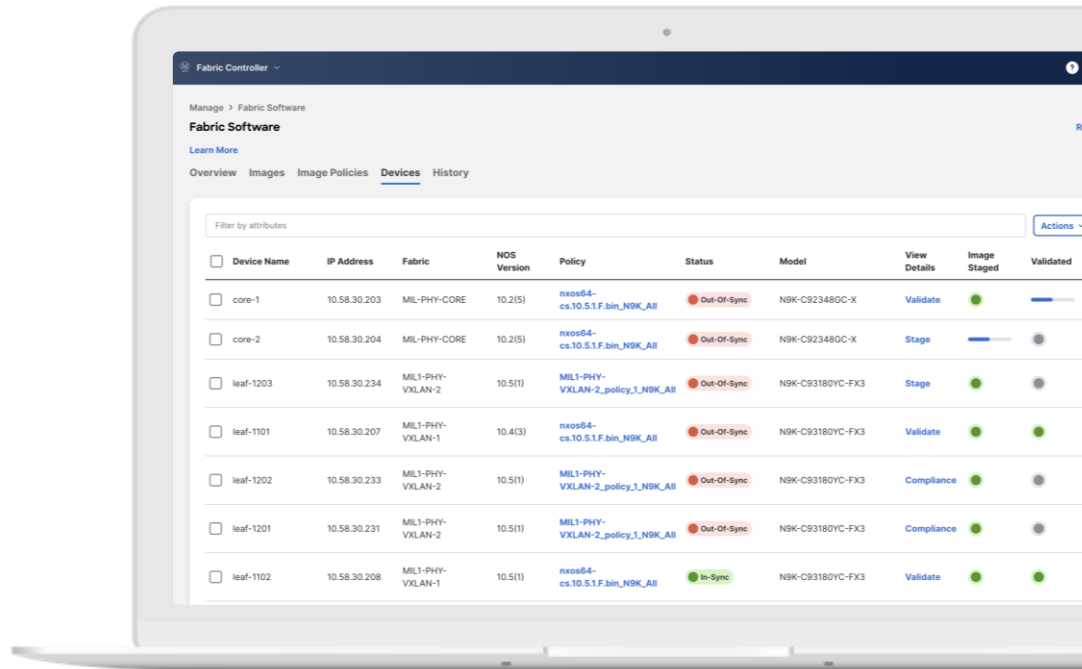
# Image Management

## Centralized Software Upgrade

- Image Management helps network admins with upgrade planning, scheduling and monitoring
- Upgrade Groups can be defined to speed up the upgrade Maintenance Window
- In addition to the NX-OS image, EPLD and SMU packages can be managed too



Image Management also supported for Catalyst 9000

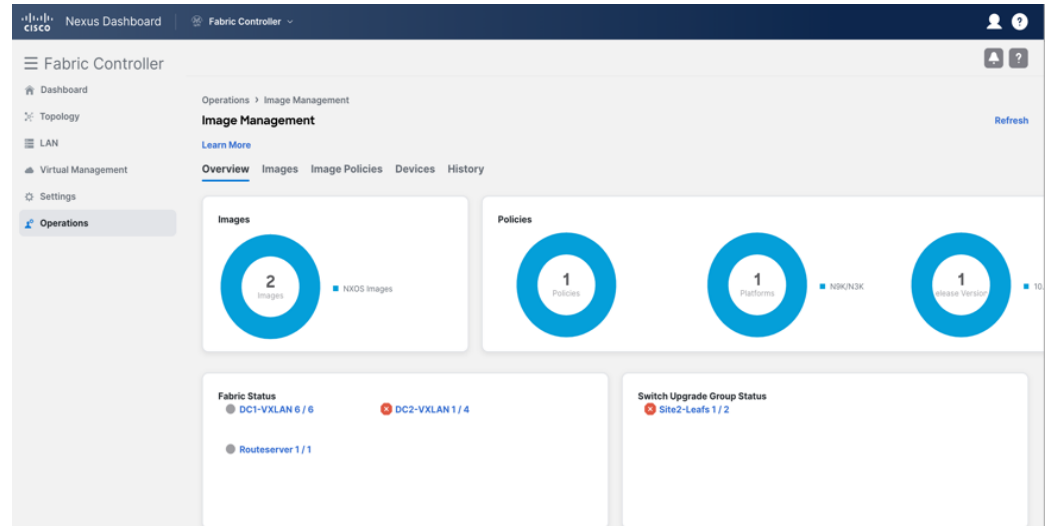


# Streamlined image, patch management, and RMA

Guided workflows, switch groups

NX-OS: Image upgrades/downgrades, EPLD upgrades, patch installs, RMA

IOS XE: PnP, SWIM, RMA (Starting NDFC 12.1.3)



Upload Images

Create the Image Policy

Attach the Image Policy

Stage the Images

Validate non-disruptive upgrade

Upgrade the switches

Benefits

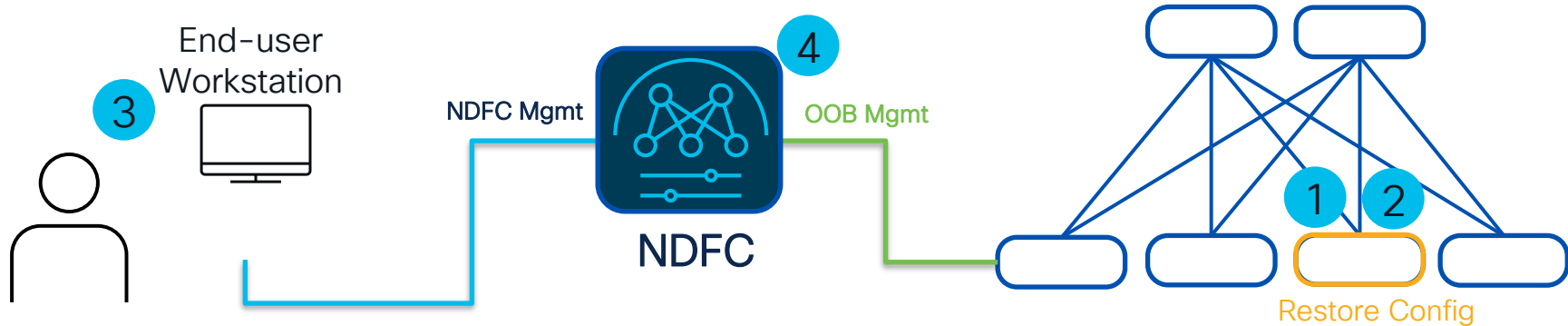
Simplified

Intuitive

Mitigate risk

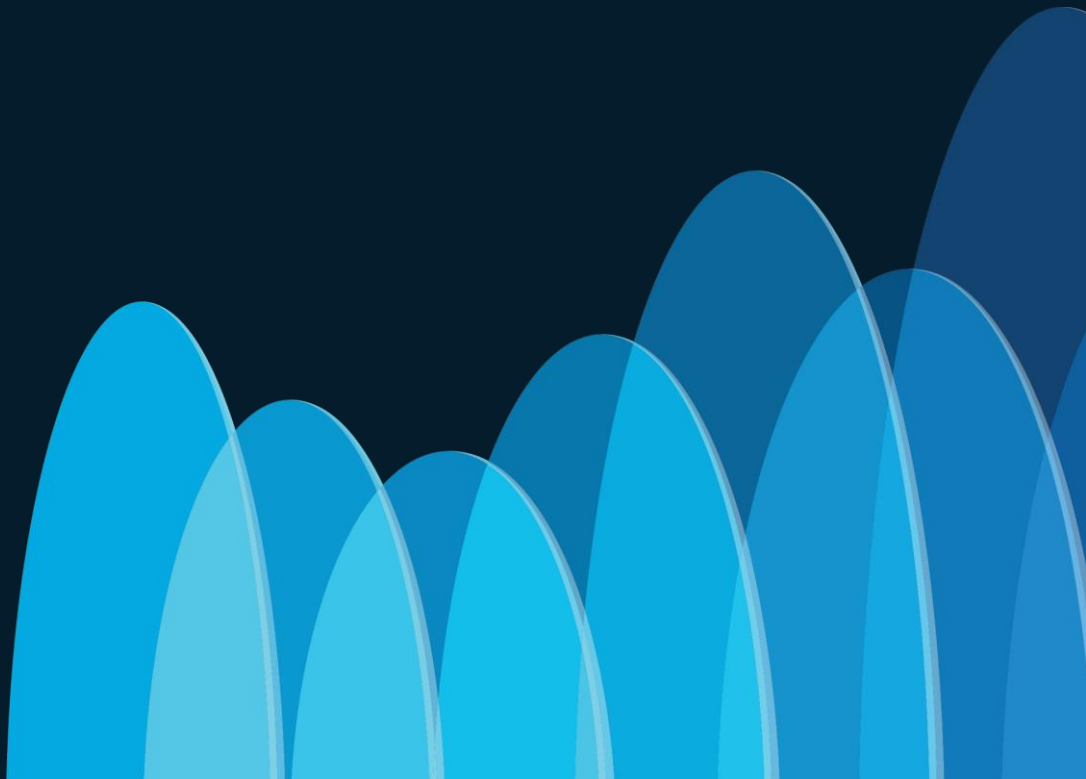
# Return Material Authorization (RMA)

POAP or Manual RMA flow

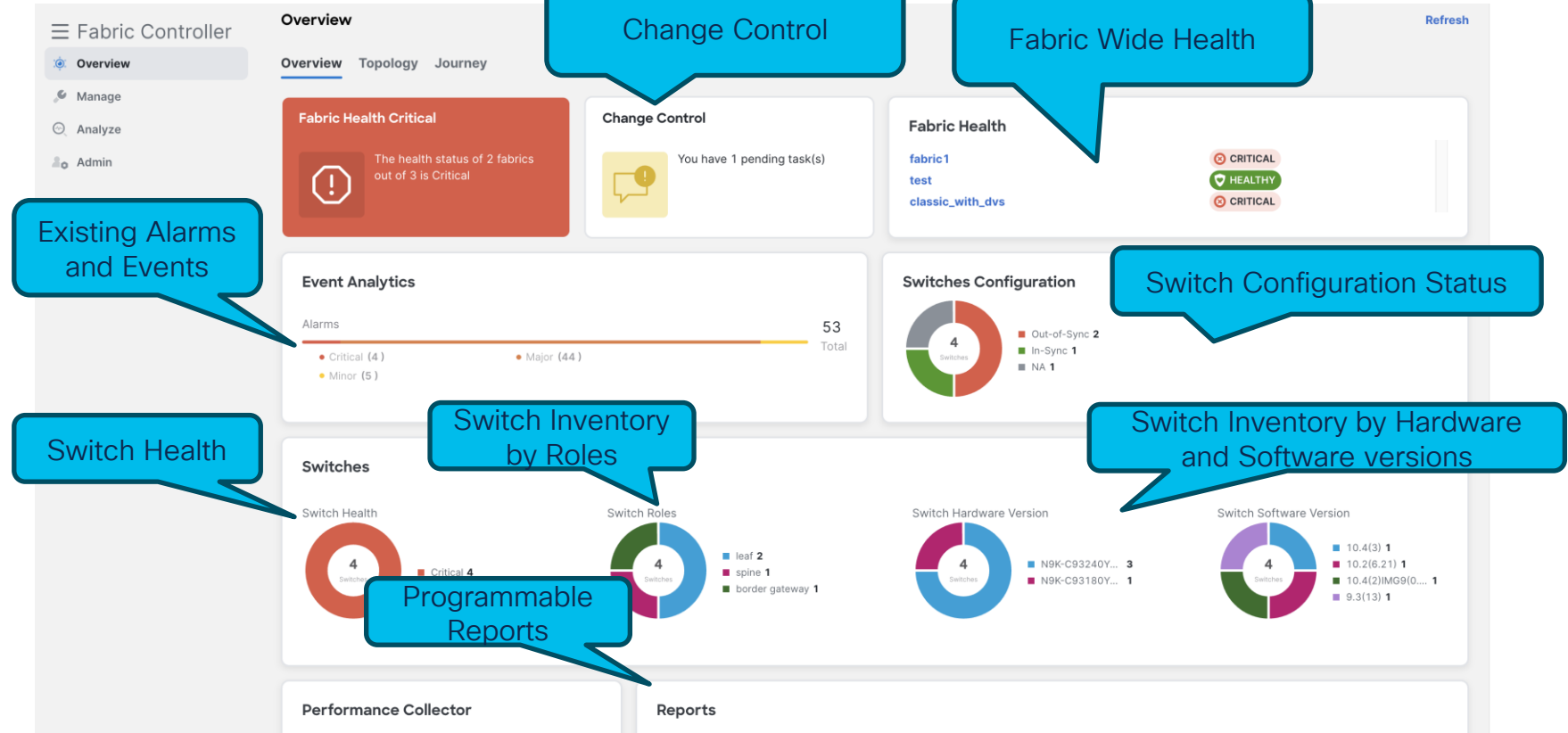


- 1 From the Fabric Overview, select the concerned switch and Change its Mode to Maintenance
- 2 Replace the switch with new one
- 3 Provision RMA and Set the Admin Password (for POAP)
- 4 Select the device to replace and click Provision RMA
- 5 Move the device back to Normal Mode (~5 mins for full configuration)

# NDFC Visibility



# NDFC Dashboard



Change Control

Fabric Wide Health

Existing Alarms and Events

Switch Configuration Status

Switch Health

Switch Inventory by Roles

Switch Inventory by Hardware and Software versions

Programmable Reports

# VMM Integration

## Visibility into the virtualized world

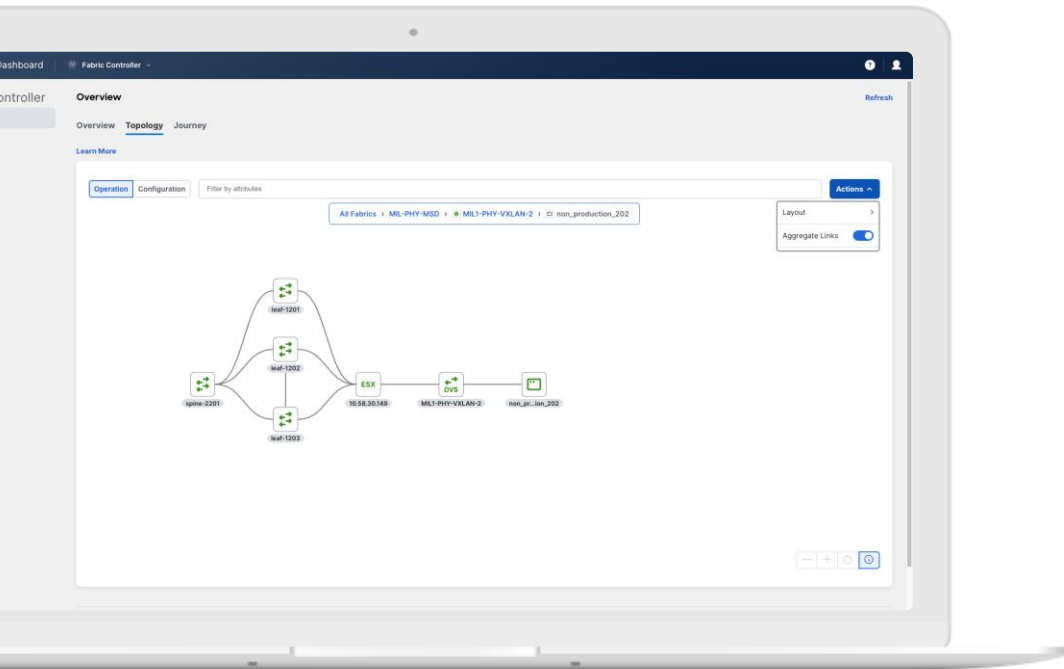
The screenshot shows the Cisco Fabric Controller dashboard. On the left, there's a network topology diagram with components like Net (24), SG (7), VRF (8), and VM (6). On the right, a 'Virtual Machines' table is displayed with the following data:

VM Name	IP Address	MAC Address	Security Group	Switch
aci_anywhere_mpod	172.17.68.222	fa80-250-56ff-feb6185	Clients(10000) NA	leaf-1203
aci_anywhere_mpod	172.17.68.222	fa80-250-56ff-feb6185	Clients(10000) NA	leaf-1203
aci_anywhere_mpod	172.17.68.222	fa80-250-56ff-feb6185	Clients(10000) NA	leaf-1202
aci_anywhere_mpod	172.17.68.222	fa80-250-56ff-feb6185	Clients(10000) NA	leaf-1202
aci_anywhere_mpod	172.17.68.222	fa80-250-56ff-feb6185	Clients(10000) NA	leaf-1201
aci_anywhere_mpod	172.17.68.222	fa80-250-56ff-feb6185	Clients(10000) NA	leaf-1201
non_production_202	172.17.89.202	fa80-250-56ff-feb6a74	NON-PRODUCTION(10003) NA	leaf-1203
non_production_202	172.17.89.202	fa80-250-56ff-feb6a74	NON-PRODUCTION(10003) NA	leaf-1203
non_production_202	172.17.89.202	fa80-250-56ff-feb6a74	NON-PRODUCTION(10003) NA	leaf-1202
non_production_202	172.17.89.202	fa80-250-56ff-feb6a74	NON-PRODUCTION(10003) NA	leaf-1202
non_production_202	172.17.89.202	fa80-250-56ff-feb6a74	NON-PRODUCTION(10003) NA	leaf-1201
non_production_202	172.17.89.202	fa80-250-56ff-feb6a74	NON-PRODUCTION(10003) NA	leaf-1201
media_server	172.17.1100	fa80-250-56ff-feb61996	NON-PRODUCTION(10003) NA	leaf-1203
media_server	172.17.1100	fa80-250-56ff-feb61996	NON-PRODUCTION(10003) NA	leaf-1203
media_server	172.17.1100	fa80-250-56ff-feb61996	NON-PRODUCTION(10003) NA	leaf-1202

- NDFC supports a read-only integration with VMware vSphere
- NDFC pulls information from vSphere vCenter and correlate it with fabric information
- vSphere details can also shown in the Topology view

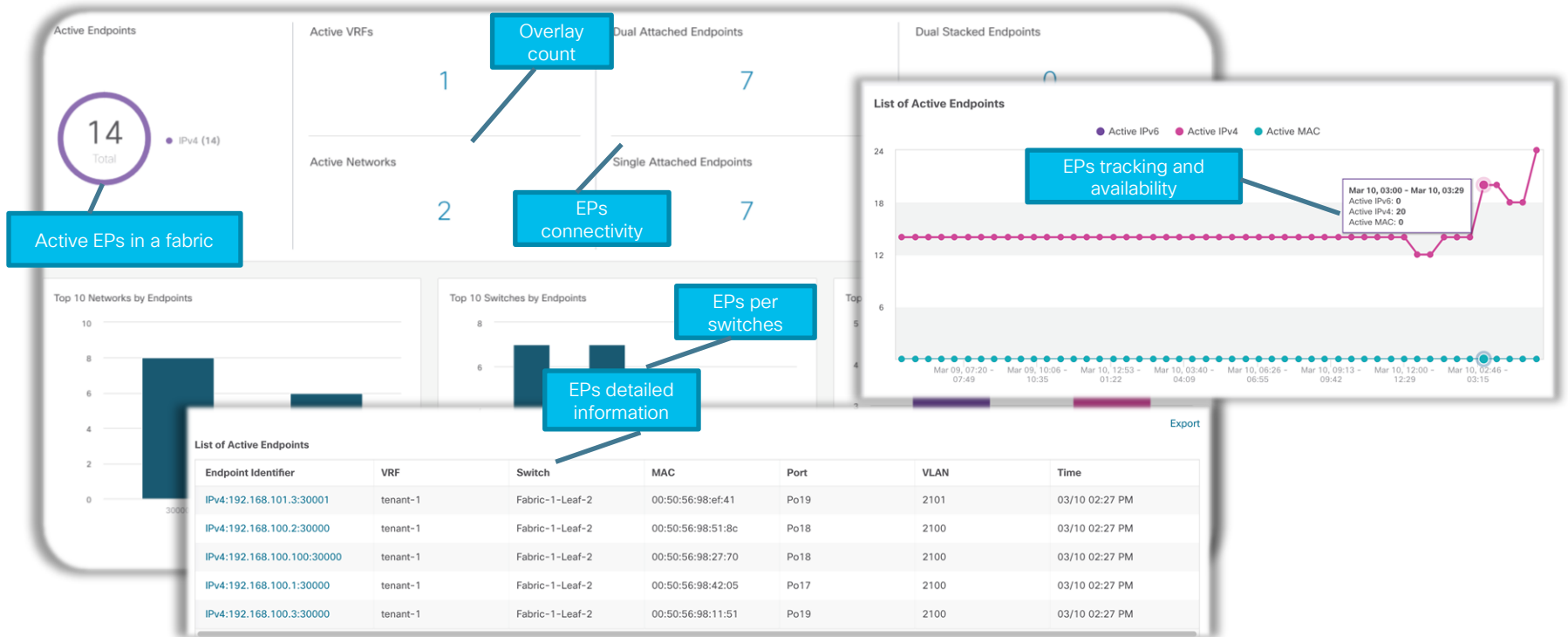
# VMM Integration

## Visibility into the virtualized world



- NDFC supports a read-only integration with VMware vSphere
- NDFC pulls information from vSphere vCenter and correlate it with fabric information
- vSphere details can also shown in the Topology view

# Endpoint Locator and Visualizer



Almost real-time data on active endpoints

Single pane of glass for all EP visualization

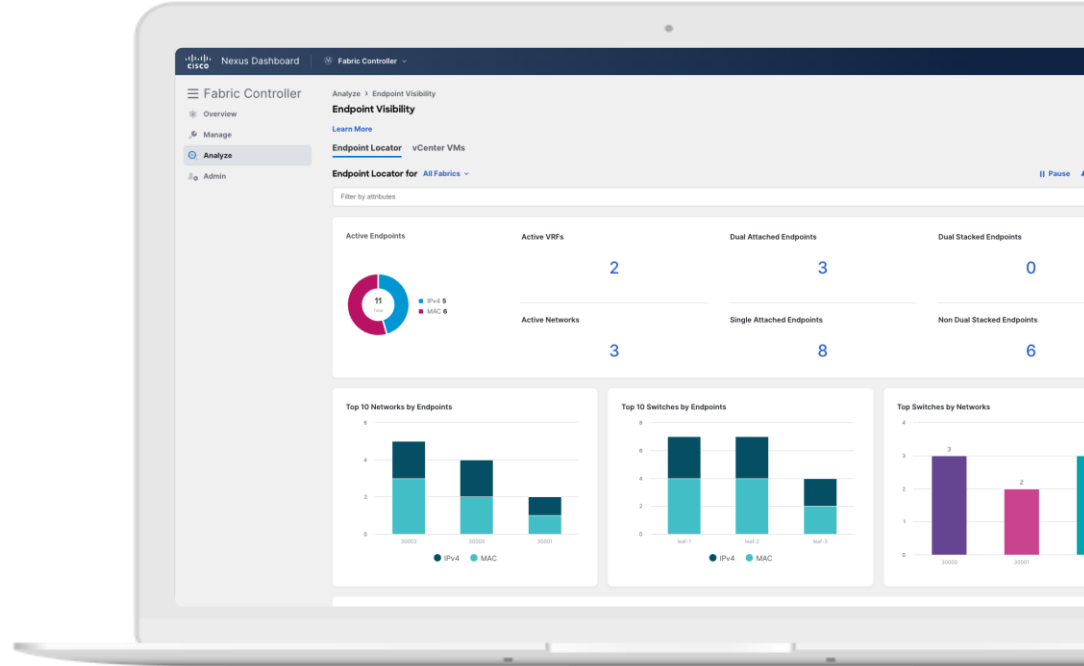
Endpoint life and history

Active VRFs and Networks

# Endpoint Locator

## What is EPL

- Endpoint Locator (EPL) provides real time and historical search for the hosts attached to the fabric
- EPL gets the current information via a BGP EVPN session towards the Route Reflectors and NX-API
- Statistics are kept for up to 60 days or 100GB of consumed data



# Reports

## Programmable Reports

- Many pre-defined reports are available to run on the fabrics
- Administrators can run them ad-hoc or set a recurring schedule
- Reports can be customized via a flexible templating approach

The screenshot displays a web interface for a Cisco Fabric Controller. At the top, it shows the report title 'Fab\_Resources - Nov 07 2024, 00:09:43' and navigation tabs for 'Details' and 'Commands'. Below this is a 'Summary' section with a sub-header 'Resource Pools for Fabric ML1-PHY-VLAN-2'. This section contains a table with the following data:

Pool Name	Pool Type	Pool Range	Subnet Mask
SUBNET	SUBNET_POOL	172.20.23.0/24	30
LOOPBACK0_IP_POOL	IP_POOL	172.20.20.0/24	32
LOOPBACK1_IP_POOL	IP_POOL	172.20.21.0/24	32
ANYCAST_IP_POOL	IP_POOL	172.20.22.0/24	32
DC1 subnet pool	SUBNET_POOL	172.20.24.0/24	30

Below the table, it indicates '64 items found' and provides pagination controls (rows per page: 5, 1, 2, 3, 4, 5).

The second section is titled 'Resources for Pool SUBNET: Type SUBNET\_POOL: Range 172.20.23.0/24'. It contains a table with the following data:

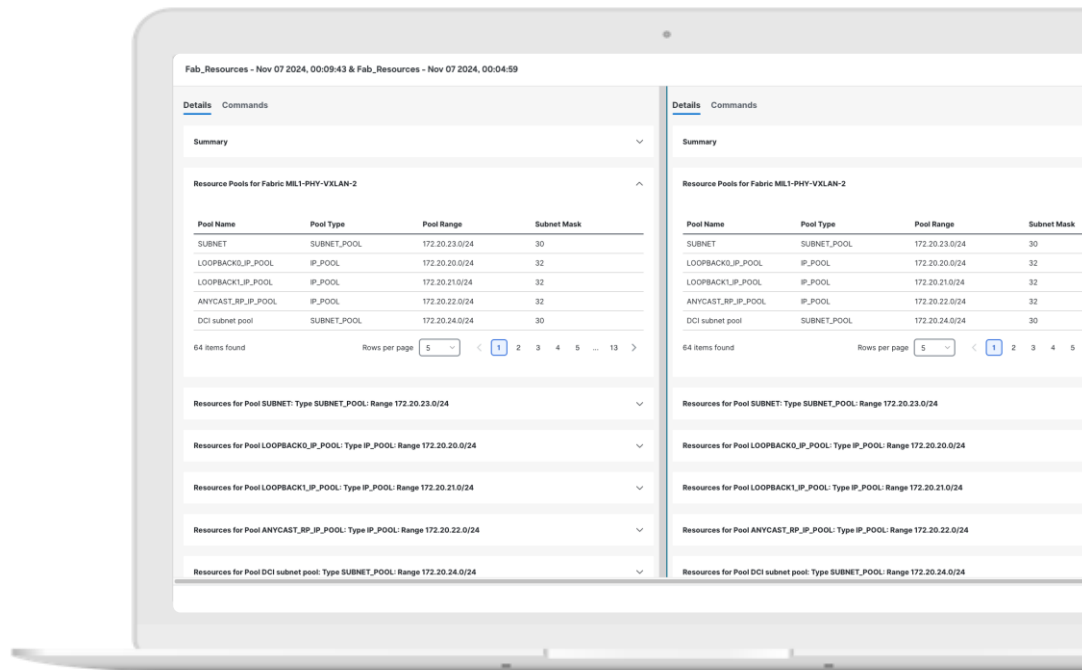
Scope Type	Scope	Device Name	Allocated Resource	Allocated To	ID
Link	FD0281108WZ	spine-2201	172.20.23.0/30	FD0281108WZ-Ethernet1/7-FD027090FBU- 36	
Link	FD027090738	leaf-1203	172.20.23.4/30	FD027090738-Ethernet1/54-FD0281108WZ- 39	
Link	FD0281108WZ	spine-2201	172.20.23.8/30	FD0281108WZ-Ethernet1/5-FD027090788- 42	
Link	FD027150XYT	None	172.20.14/30	FD027150XYT-Ethernet1/30-FD0281108WZ- 72	

At the bottom, it indicates '4 items found' and provides pagination controls (rows per page: 5).

# Reports

## Reports Comparison

- NDFC natively allows to compare any 2 reports
- With a quick look an administrator can see what changed from the previous report execution to a newer one



# Visibility and monitoring



## Get comprehensive monitoring

Enhanced topology views

Compute and endpoint visibility

VXLAN OAM support with NDFC

Obtain detailed inventory, health, resource consumption information on devices

End-to-end visibility, monitoring and troubleshooting

Integrate with NDI for Day 2 operations

Intuitive

Deep visibility

Enhanced monitoring

# NDFC Federation

## Nexus Dashboard One Manage



Single sign-on for clusters

(with remote authentication)



One view dashboard to see summary of fabrics, switch details, etc.



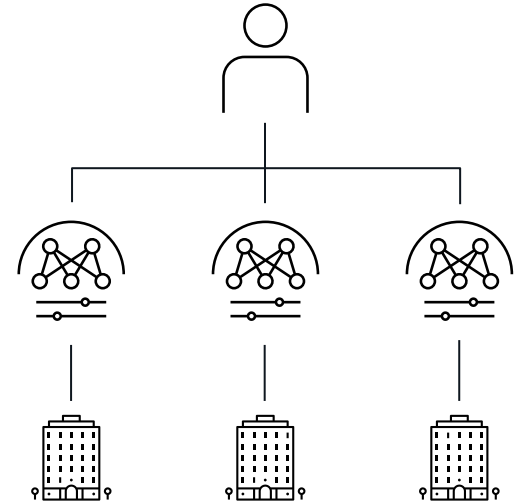
VXLAN EVPN fabric

- Unified view workflows for multisite deployments
- Federation of MSDs
- L2/L3 network stretch



No. of Clusters in a federation: 4

No. of Fabrics in a federation: 25



# NDFC Summary & Benefits

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# Why NDFC?

## Multi-Domain, Multi-Platform



NX-OS Nexus 9000 and 3000



IOS-XE Catalyst 9000



IOS-XR ASR 9000



NX-OS Nexus 7000



IOS-XE ASR 1000



Supported Hardware and Software  
might vary depending on NDFC version  
[Check compatibility matrix 12.2.2](#)



# Why NDFC?

In a nutshell...



Step into SDN via VXLAN BGP EVPN



Multi-OS management and support



Config and Compliance across Cisco Products



Simplify Complex Network Operations



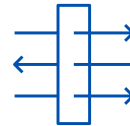
Single Source of Truth



Automate, Manage, and Interconnect Multi-Fabric topologies



End to End Automation



Layer-3 Boundary across Zones, L2/L3 across IOS-XE, NXOS, and Multicast Overlay



Single Pane of Glass for Day-0/Day-1 Provisioning



Programmability and Orchestration

# Webex App

## Questions?

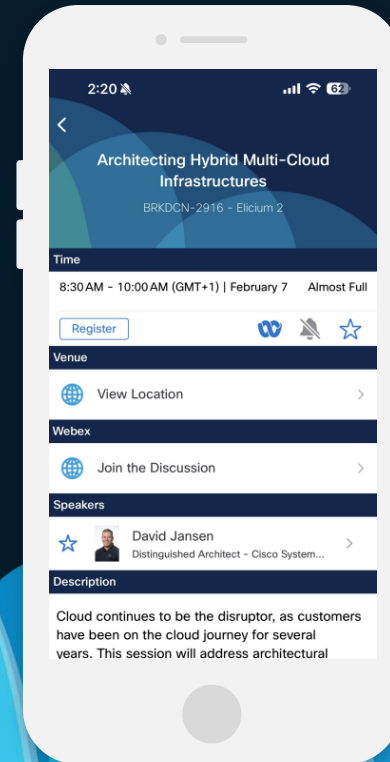
Use the Webex app to chat with the speaker after the session

## How

- 1 Find this session in the Cisco Events 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 February 28, 2025.

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# Fill Out Your Session Surveys



Participants who fill out a minimum of 4 session surveys and the overall event survey will get a unique Cisco Live t-shirt.

(from 11:30 on Thursday, while supplies last)



All surveys can be taken in the Cisco Events mobile app or by logging in to the Session Catalog and clicking the 'Participant Dashboard'



Content Catalog

# Continue your education

- Visit the Cisco Showcase for related demos
- 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 [ciscolive.com/on-demand](https://ciscolive.com/on-demand). Sessions from this event will be available from March 3.



Thank you

CISCO *Live!*

CISCO *Live!*

GO BEYOND

A series of overlapping, rounded, teardrop-shaped abstract forms in various shades of blue, ranging from light to dark, positioned on the right side of the image.