

Understanding Hyperfabric:

A Groundbreaking Cloud-Controlled Data Center Network Solution

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cisco Live !

Cisco Webex App

Questions?

Use Cisco Webex App to chat with the speaker after the session

How

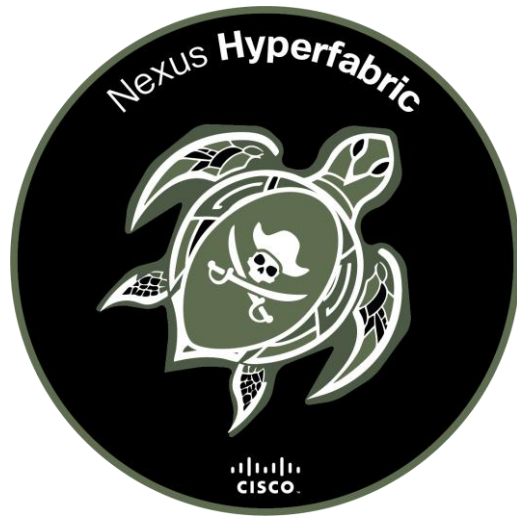
- 1 Find this session in the Cisco Live Mobile App
- 2 Click “Join the Discussion”
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- 4 Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until 14 November 2025.



<https://cislive.ciscoevents.com/cislivebot/#BRKDCN-2944>

Agenda

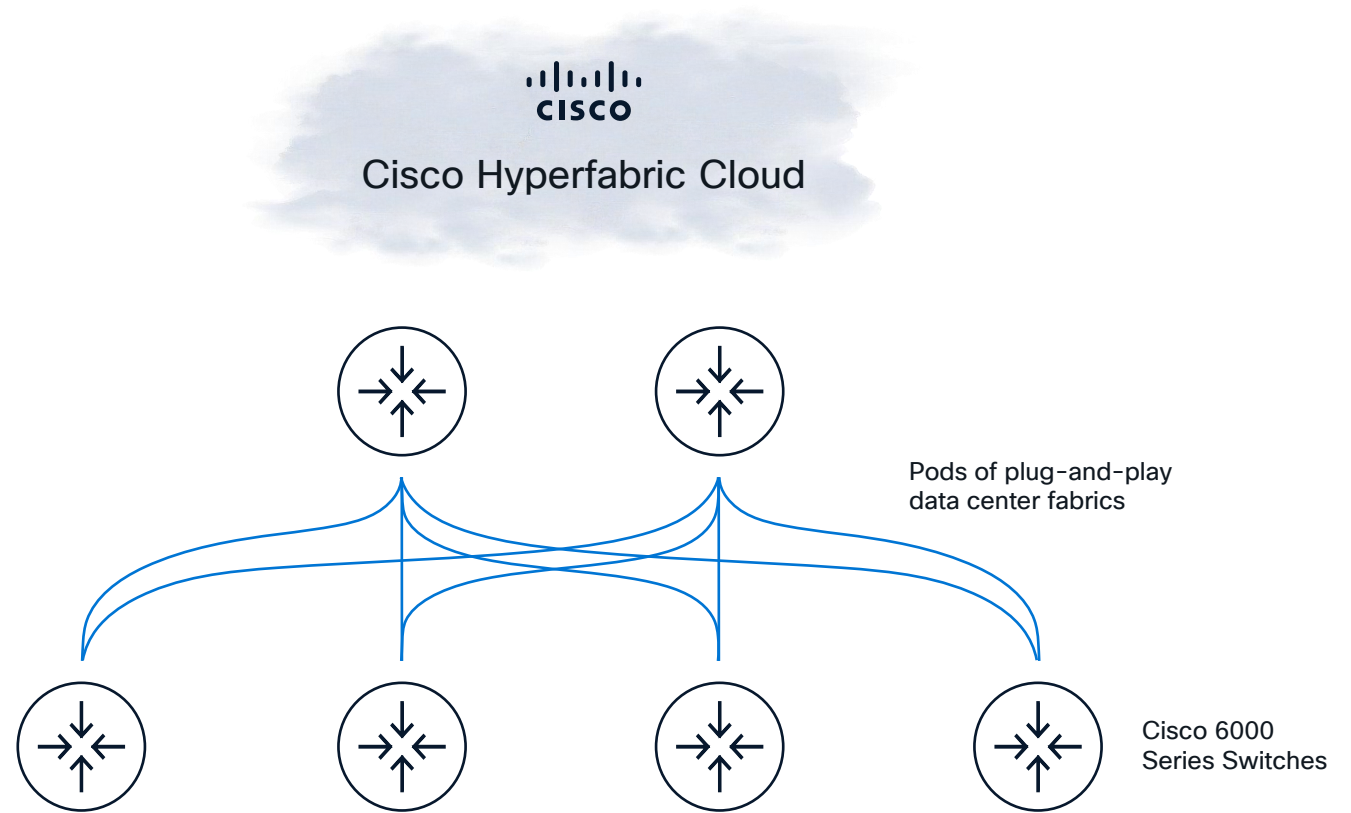


- 01 Introducing Hyperfabric
- 02 Live Demo
- 03 How it works
- 04 Telemetry and Day 2 Ops
- 05 Multi-Site (DCI) & Roadmap
- 06 Hyperfabric AI

Cisco Nexus Hyperfabric

Data center network fabric-as-a-service

- ✓ Design, deploy and operate on-premises fabrics located anywhere
- ✓ Easy enough for IT generalists, application and DevOps teams
- ✓ Outcome driven by a purpose-built vertical stack



Design



Order



Deploy



Validate



Monitor



Scale



Collaborate

Hyperfabric Hardware: Cisco 6000 Series

[Cisco 6000 Series Datasheet \(Link\)](#)



Leaf: HF6100-60L4D

- 4x 100/400GbE QSFP56-DD (16x 100G breakout)
- 60x 10/25/50GbE SFP56



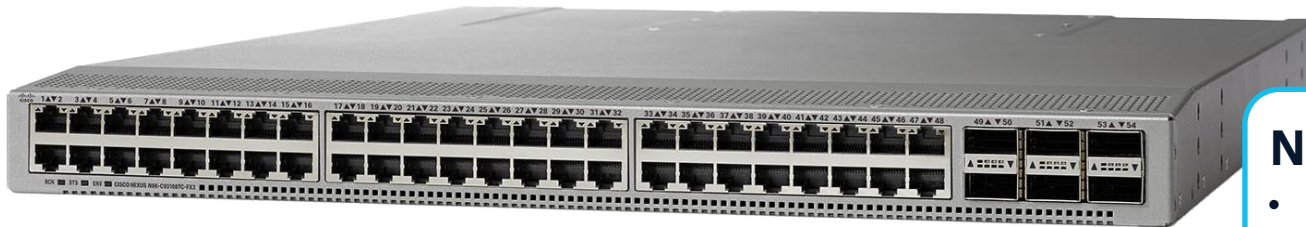
Spine/Leaf (400G): HF6100-32D

- 32x 100/400GbE QSFP56-DD
- 128x 100GbE via 400:4x100 breakout



Spine/Leaf (800G): HF6100-64ED

- 64x 800GbE OSFP800
- 128x 400GbE via 800:2x400 breakout



NEWS! Nexus 9300 HW in Hyperfabric

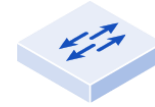
- Nexus C93108TC-FX3 (48x 1/10G Cu + 6x 100G QSFP+)
- Additional N9300 platforms to follow in CY2026+

A fabric that scales up... and down

Cisco HF6100-60L4D (Q200)

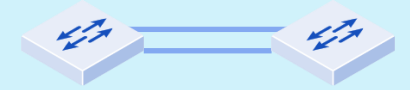


- 4x 100/400GbE QSFP56-DD (16x via 100GbE breakout)
- 60x 10/25/50GbE SFP56



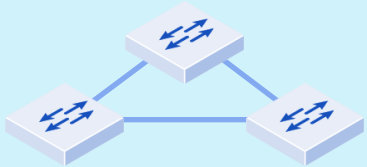
“A Fabric of One”

- No dedicated fabric links
- 4x 40/100/400GbE
- 60x 10/25/50GbE



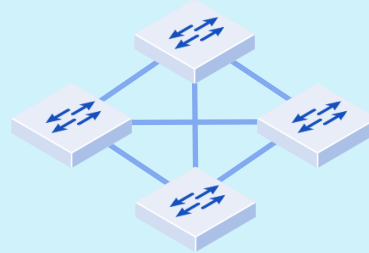
2-Switch Fabric (Remote Fabric)

- Fabric Links: 2 x 40/100/400GbE
- 4 x 40/100/400GbE
- 120 x 10/25/50GbE



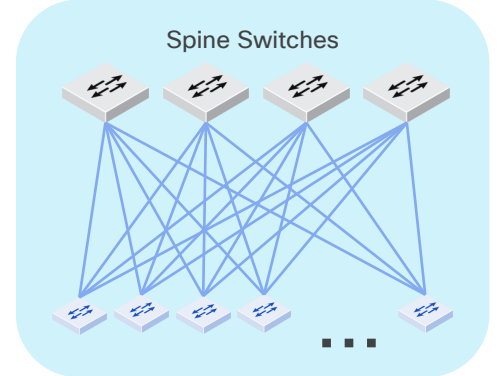
3-Switch Fabric

- Fabric Links: 3 x 40/100/400GbE
- 6 x 40/100/400GbE
- 180 x 10/25/50GbE



4-Switch Fabric

- Fabric Links: 6 x 40/100/400GbE
- 4 x 40/100/400GbE
- 240 x 10/25/50GbE



Leaf-Spine Fabric

Grow your fabrics in-service (without rearchitecting)

Spine: Cisco HF6100-32D (Q200)



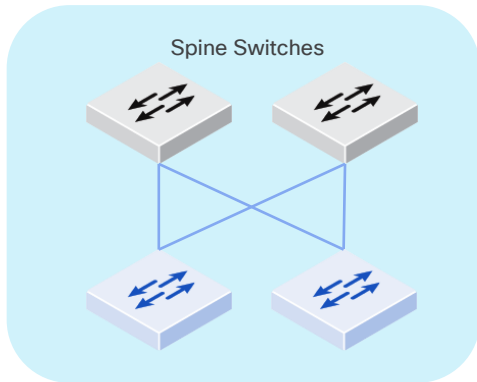
- 32x 100/400GbE QSFP56-DD
- 128x 100GbE via 400:100 breakout

Leaf: Cisco HF6100-60L4D (Q200)



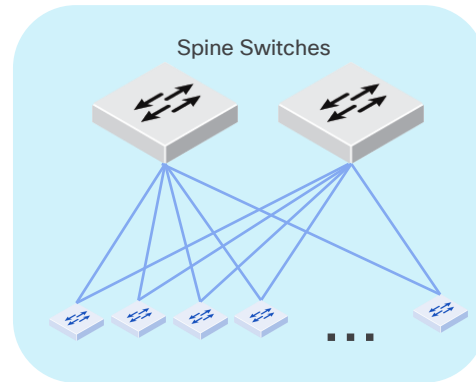
- 4x 100/400GbE QSFP56-DD (16x via 100GbE breakout)
- 60x 10/25/50GbE SFP56

Spine switches support host and gateway port modes



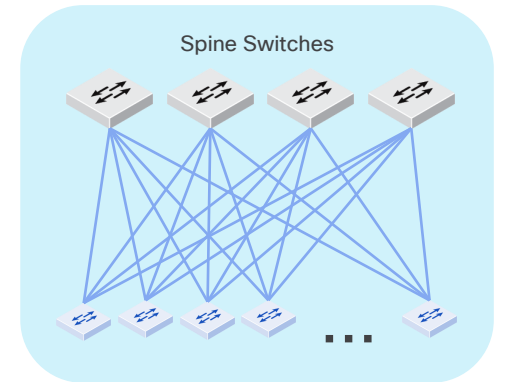
2x Spine • 2x Leaf (min)

- 40/100/400GbE Fabric Links
- 120 x 10/25/50GbE Ports
- 3.75:1 to 1.87:1 Max Oversubscription



2x Spine • 2-32x Leaf (typical)

- 40/100/400GbE Fabric Links
- 120-1920 x 10/25/50GbE Ports
- 3.75:1 to 1.87:1 Max Oversubscription

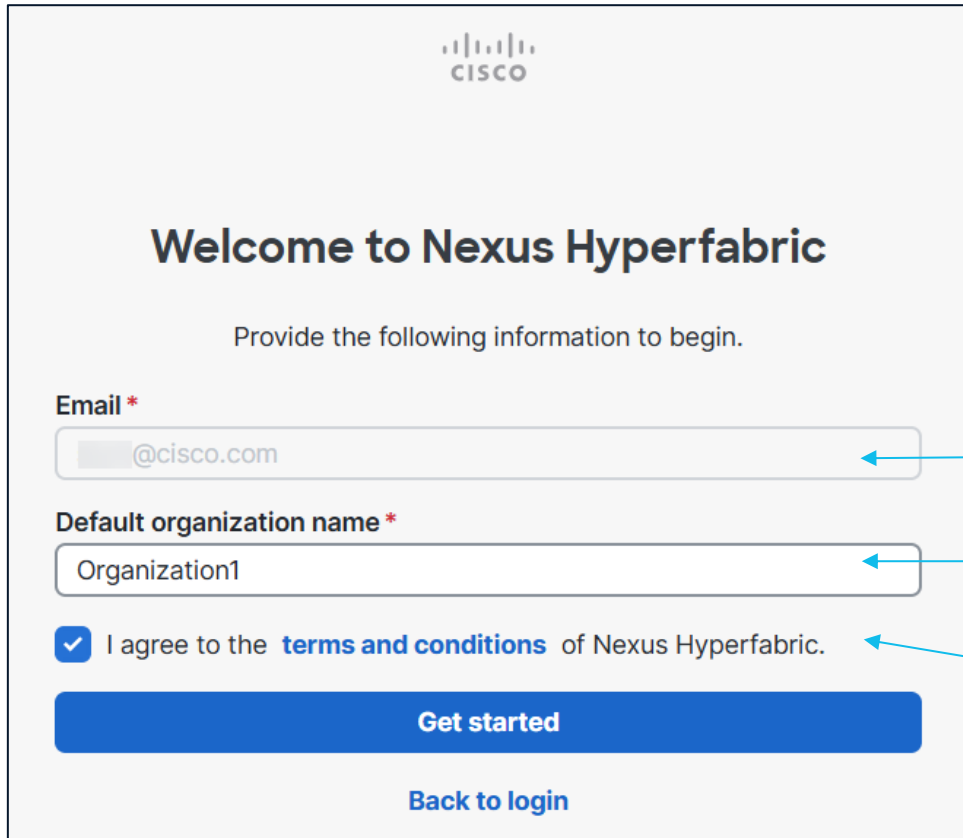


4x Spine • 8-32x Leaf (max)

- 40/100/400GbE Fabric Links
- 480-1920 x 10/25/50GbE Ports
- 1.87:1 Max Oversubscription

Login to Hyperfabric

- <https://hyperfabric.cisco.com/>





Welcome to Nexus Hyperfabric

Provide the following information to begin.

Email *

Default organization name *

☒ I agree to the [terms and conditions](#) of Nexus Hyperfabric.

Get started

[Back to login](#)

← Your CCO ID

← Your first organization name

← Check the agreement

Note: you cannot delete the organization once it's created!

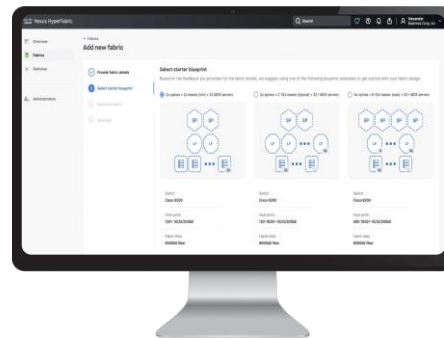
Hyperfabric Demo 1

Complete Lifecycle Experience



Cloud-managed controller

- Scalable, globally distributed multi-tenant cloud service
- GUI, mobile, and API access
- **On-site** for remote installation



Cloud-managed switch

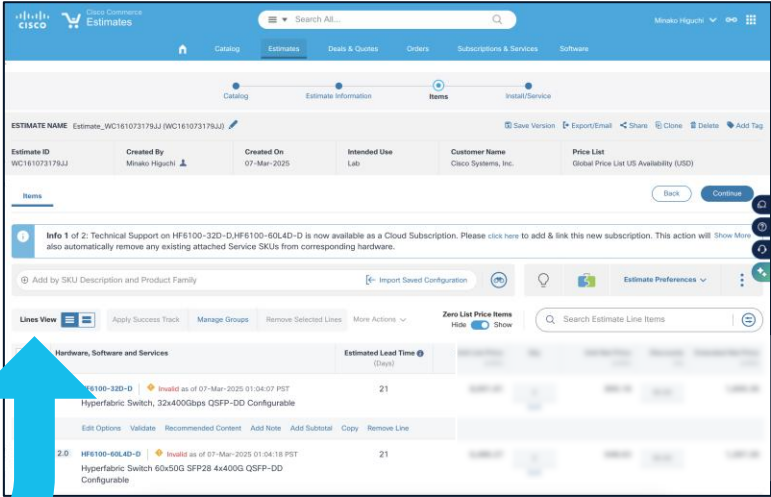
- Cisco 6000 + Nexus 9300 FX3*
- Boots from cloud
- Full visibility & control from the cloud



Bill of Materials (BOM)

BOM (total number of switches and optics)

BOM calculations Estimate ID requests Assembly list				
Last updated Apr 21, 2025 11:10:44 am Request estimate ID Export CSV Print				
Product ID (PID)	Description	Qty deployed	Qty required	Total
HF6100-32D-D	Hyperfabric Switch, 32x400Gbps QSFP-DD Configurable	0	2	2
PSU1.4KW-ACPE	1400W AC Power Module with Port-side Exhaust	0	4	4
FAN-1RU-PE-V2	Cisco 8000 Series 1RU Fan with Port-side Air Exhaust Ver 2	0	12	12
QDD-400G-SR4.2-BD	400GBASE-SR4.2 QSFP-DD BiDi module	0	4	4
Product ID (PID)	Description	Qty deployed	Qty required	Total
HF6100-32D-SVC-D	Cisco Nexus Hyperfabric Switch HF6100-32D SaaS Subscription	0	0	1
HF6100-32D-SVC-E	HF6100-32D Essentials Service	0	0	2



Per switch inventory information

Assembly list BOM calculations				
Search Device name Status 4 results				
TME-fab1-HF6100-60L4D-leaf1 Needed				
Product ID (PID): HF6100-60L4D				
4 x 100/400GbE QSFP56-DD16x via 100GbE breakout, 60x 10/25/50GbE SFP56				
Status: Needed				
Serial number: --				
Required parts				
Power Supply 2				
Item	Product ID (PID)	Status	Serial number	Quantity
1500W AC Power Supply	CBK-PWR-1500WAC	Needed	--	2
Fan tray 6				
Item	Product ID (PID)	Status	Serial number	Quantity
Catalyst 9500X front to back (port-side intake) cooling fan	CB9500X-FAN-1U-R	Needed	--	6
Optics for assigned ports 2				
Item	Product ID (PID)	Status	Serial number	Quantity
Ethernet1_31	QDD-400G-SR4.2-BD	Needed	--	1
Ethernet1_32	QDD-400G-SR4.2-BD	Needed	--	1
TME-fab1-HF6100-60L4D-leaf2 Needed				
TME-fab1-HF6100-32D-spine1 Needed				
TME-fab1-HF6100-32D-spine2 Needed				

Self-Documenting Fabric

tsim-fabric-leaf0

Port interface

Ethernet1_1

Port role

Fabric

Select optics

Pluggable

QDD-400-AOC15M

Port type

N/A

Cable type

AOC

To switch

tsim-fabric-spine0

Port interface

Ethernet1_1

Port role

Fabric

Q 400G

N/A

400G

DAC

9 results

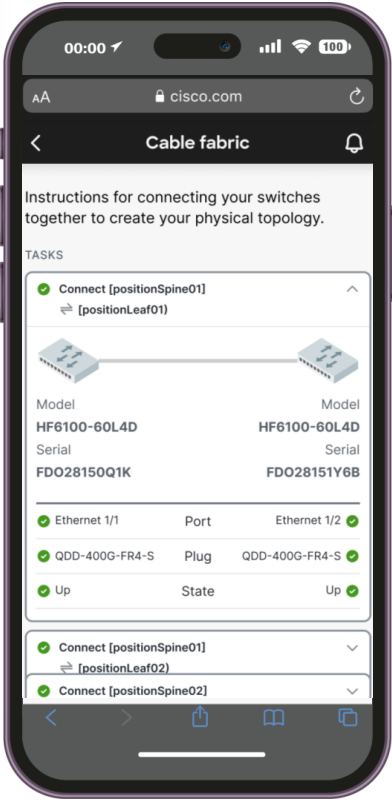
Reset all

PID	Plug type	Max speed	Cable type	Length	Description
☐ QDD-2Q200-CU3M	N/A	400G	DAC	3M	Preterminated breakout cable
☐ QDD-400-CU1M	N/A	400G	DAC	1M	Preterminated cable
☐ QDD-400-CU2.5M	N/A	400G	DAC	2.5M	Preterminated cable
☐ QDD-400-CU2M	N/A	400G	DAC	2M	Preterminated cable
☐ QDD-400-CU3M	N/A	400G	DAC	3M	Preterminated cable
☐ QDD-4ZQ100-CU1M	N/A	400G	DAC	1M	Preterminated breakout cable
☐ QDD-4ZQ100-CU2.5M	N/A	400G	DAC	1.5M	Preterminated breakout cable
☐ QDD-4ZQ100-CU2M	N/A	400G	DAC	2M	Preterminated breakout cable
☐ QDD-4ZQ100-CU3M	N/A	400G	DAC	3M	Preterminated breakout cable

Cancel

Save

Fabric connections											Export CSV
☐ Source Switch (Port)	Source Connector	Source Plug Type	Role	Source Pluggable (PID)	Max distance	Cable Type	Destination Pluggable (PID)	Destination Plug Type	Destination Connector	Destination Switch (Port)	
☐ CiscoLive-Demo-HF6100-60L4D-leaf1 (Ethernet1_31)	QSFP-DD	N/A	Fabric	QDD-400-AOC1M	1	AOC	QDD-400-AOC1M	N/A	QSFP-DD	CiscoLive-Demo-HF6100-32D-spine1 (Ethernet1_1)	
☐ CiscoLive-Demo-HF6100-60L4D-leaf1 (Ethernet1_32)	QSFP-DD	N/A	Fabric	QDD-400-AOC1M	1	AOC	QDD-400-AOC1M	N/A	QSFP-DD	CiscoLive-Demo-HF6100-32D-spine2 (Ethernet1_1)	
☐ CiscoLive-Demo-HF6100-60L4D-leaf2 (Ethernet1_31)	QSFP-DD	N/A	Fabric	QDD-400-AOC1M	1	AOC	QDD-400-AOC1M	N/A	QSFP-DD	CiscoLive-Demo-HF6100-32D-spine1 (Ethernet1_2)	
☐ CiscoLive-Demo-HF6100-60L4D-leaf2 (Ethernet1_32)	QSFP-DD	N/A	Fabric	QDD-400-AOC1M	1	AOC	QDD-400-AOC1M	N/A	QSFP-DD	CiscoLive-Demo-HF6100-32D-spine2 (Ethernet1_2)	



SummaryIssuesDeploymentEvent viewerOn-site

Shareable link

All tasks in order

Step by step guide

All tasks by category

Unpack and assemble

Claim and bind

Port setup

Fabric connections

Breaks & Fixes 1

Sharable link

Easy to share quick response code containing the url to navigate to the Nexus Hyperfabric on-site mobile friendly site.

QR CODE

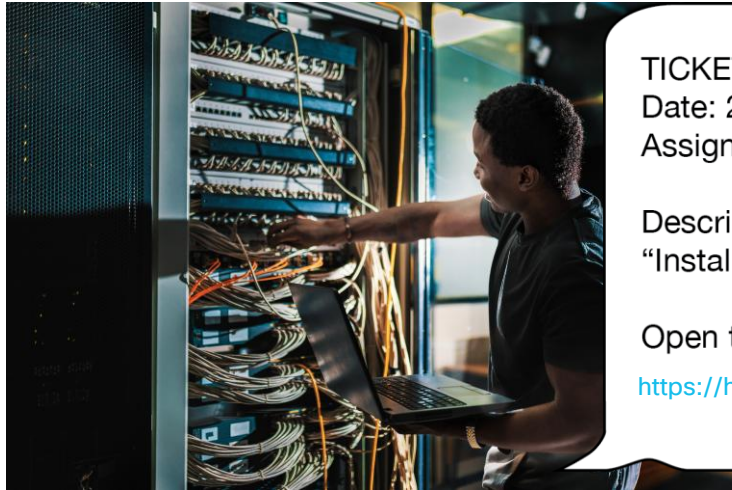
URL

https://hyperfabric.cisco.com/on-site/org/36560975-45b3-38b4-6d1b-b340a9887489/fabric/db76d913-15ca-445c-a64b-6527012e6191/task/

Copy

Interface for remote hands

- **Collaborate:**
Share workflow and installation status with on-site “remote hands”
- **Faster Deployment:**
Real-time feedback to validate tasks
Coordinate multiple on-site installers

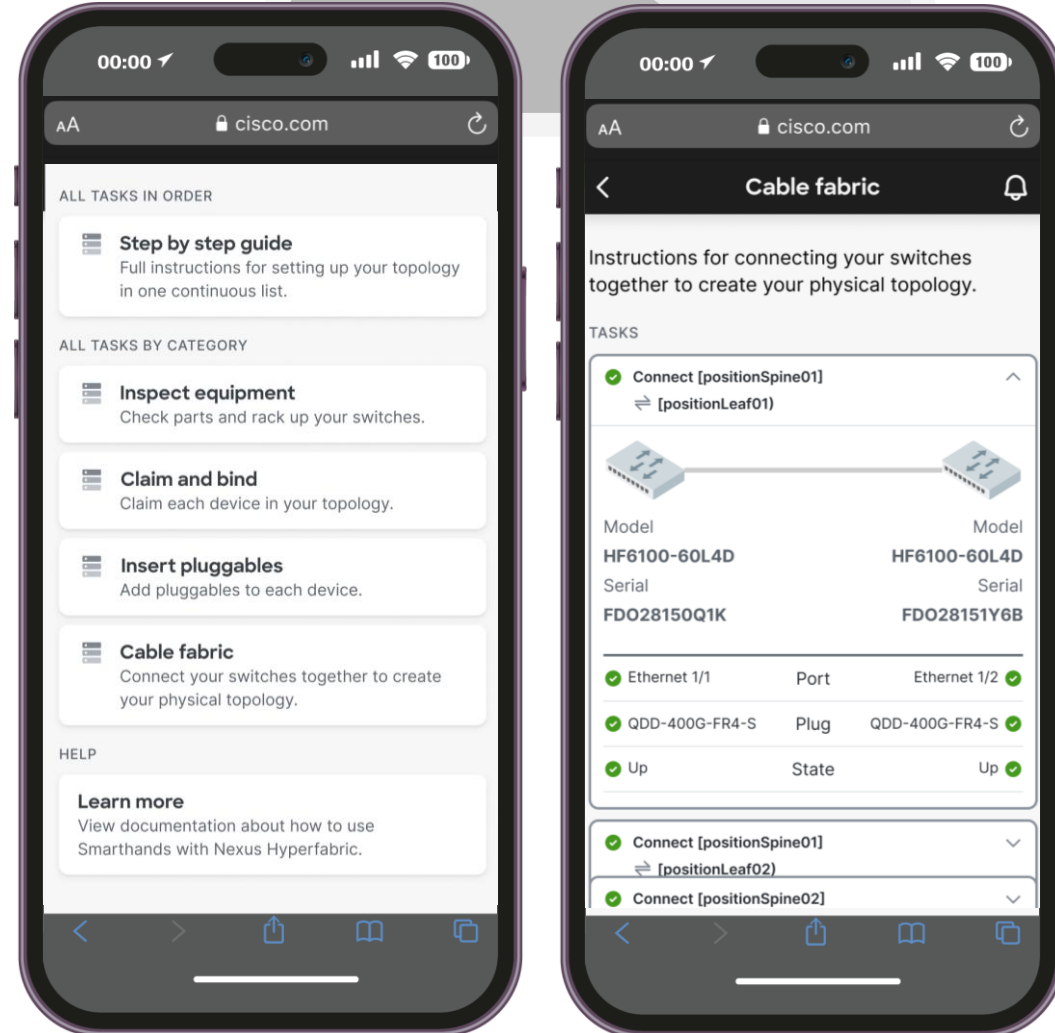


TICKET OPEN: 093872632
Date: 2023-05-01 / 16:43Z
Assigned to: jwalsh@colosp.net

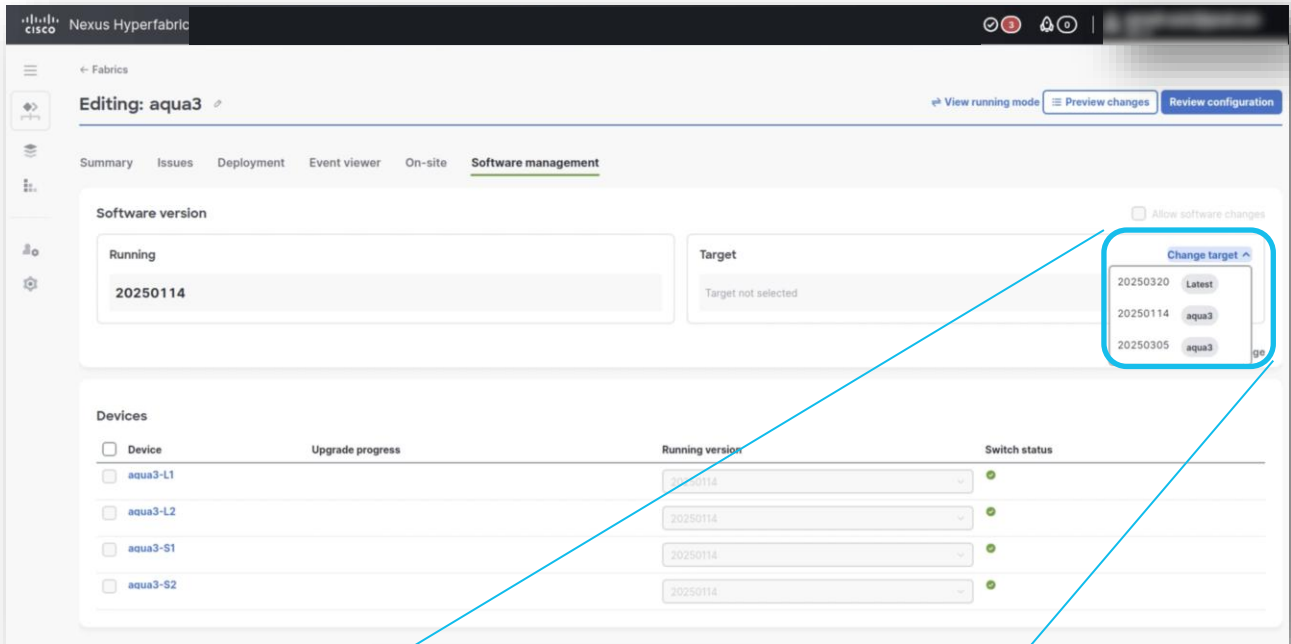
Description:
“Install leaf switch in pod00-SJC01”

Open this link to complete MOP:

<https://hyperfabric.cisco.com/rhui/?job=ad62dae672>



Software Lifecycle Management

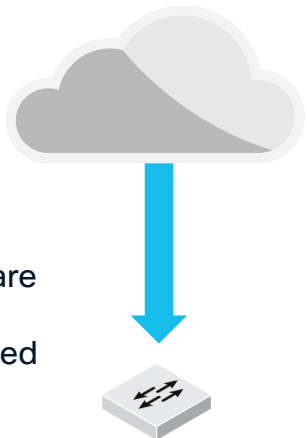
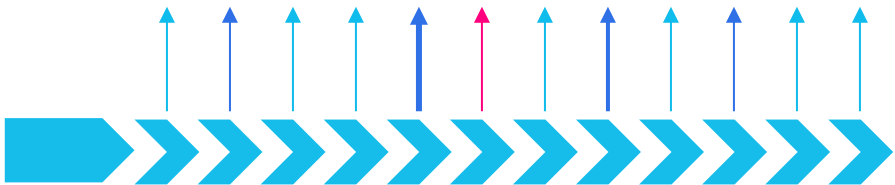


Device	Upgrade progress	Running version	Switch status
☐ aqua3-L1	Upgrade complete	20250320	✓
☐ aqua3-L2	Upgrade complete	20250320	✓
☐ aqua3-S1	Post check	20250320	✓
☐ aqua3-S2	Post check	20250320	✓

Cloud SaaS Delivery

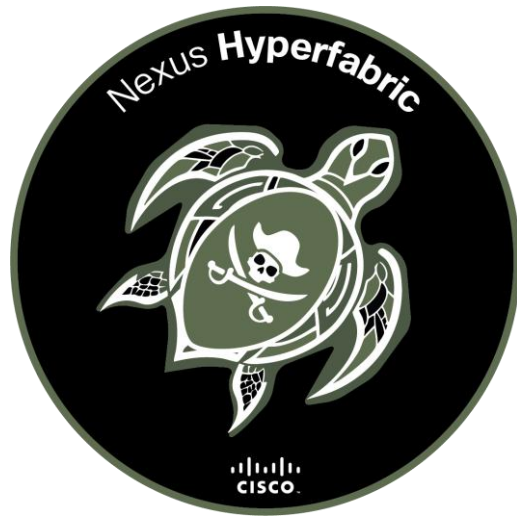
Continuous Delivery Model: Always up-to-date

- Continuous delivery of new features and software updates to the production cloud service.
- No user testing or software maintenance required



Hyperfabric Demo 2

Agenda



- 01 Introducing Hyperfabric
- 02 Live Demo
- 03 How it works**
- 04 Telemetry and Day 2 Ops
- 05 Multi-Site (DCI) & Roadmap
- 06 Conclusion

Why did we build Hyperfabric?

Today's Fabric technologies are:

1) Too complex.

- Can't deploy or manage without a controller

2) Too fragile.

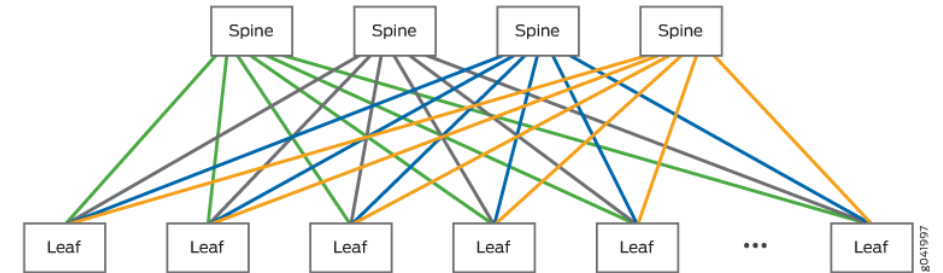
- Complex configuration is hard to change without rearchitecting

3) Too hard to automate.

- Existing technologies force automation engineers to be CCIEs

Also, data centers are changing:

- Workloads are coming back from cloud, but often for special purposes.
- Instead of a few large DCs, customers are building more, smaller DCs in more locations.



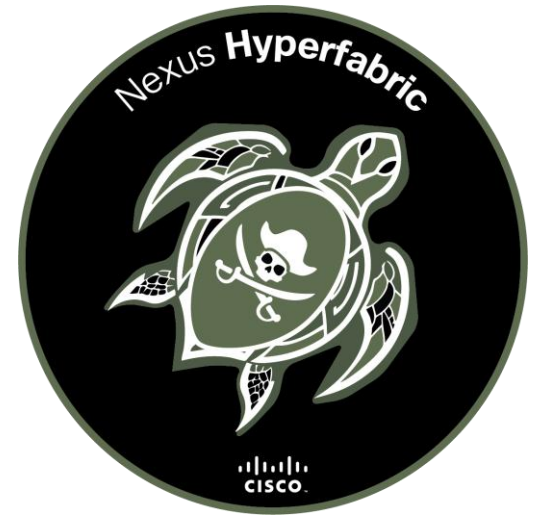
```
switch(config)# vrf instance VRF-Blue
switch(config-vrf-VRF-Blue)# ip routing vrf VRF-Blue
switch(config)# interface ethernet 3/1
switch(config-if-Et3/1)# no switchport
switch(config-if-Et3/1)# vrf VRF-Blue
switch(config-if-Et3/1)# ip address 172.168.1.9/31
switch(config-if-Et3/1)# router bgp 200
switch(config-router-bgp)# vrf VRF-Blue
switch(config-router-bgp-vrf-VRF-Blue)#
switch(config-router-bgp-vrf-VRF-Blue)#

switch(config)# vlan 10
switch(config-vlan-10)# vrf instance VRF-Blue
switch(config-vrf-VRF-Blue)# ip routing vrf VRF-Blue
switch(config)# interface vlan 10
switch(config-if-Vl10)# vrf VRF-Blue
switch(config-if-Vl10)# ip address virtual 10.10.10.1/24
switch(config)# ip virtual-router mac-address 00:aa:aa:aa:aa
switch(config)# interface Port-Channel 3
switch(config-if-Po3)# switchport mode trunk
switch(config-if-Po3)# mlag 3

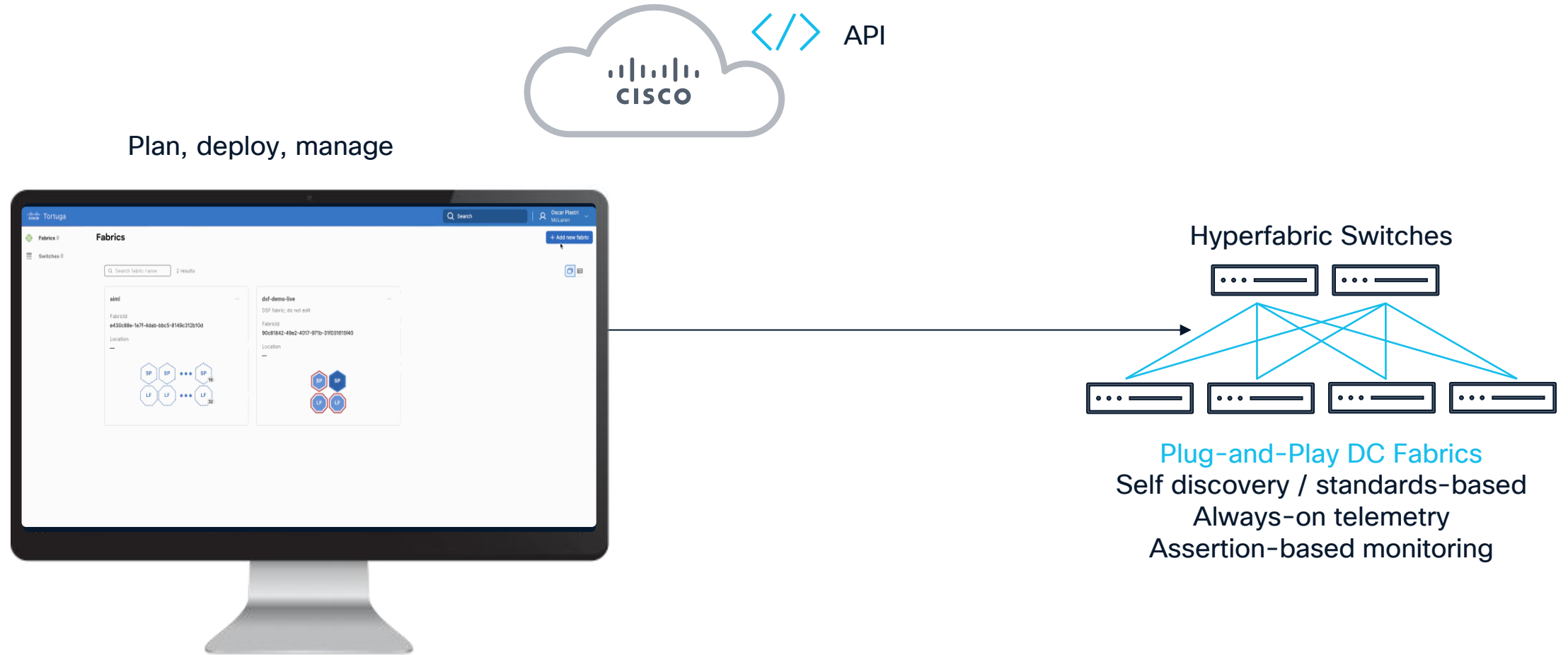
switch(config)# interface ethernet 1/1
switch(config-if-Et1/1)# description Spine
switch(config-if-Et1/1)# mtu 9214
switch(config-if-Et1/1)# no switchport
switch(config-if-Et1/1)# ip address 172.168.1.1/31
!
switch(config)# interface ethernet 8/1
switch(config-if-Et8/1)# description ck428-et8/1
switch(config-if-Et8/1)# speed forced 40gfull
switch(config-if-Et8/1)# no switchport
switch(config-if-Et8/1)# ip address 172.168.1.10/31
!
switch(config)# interface loopback 0
switch(config-if-Lo0)# ip address 1.1.1.1/32
!
switch(config)# ip prefix-list loopback
switch(config-ip-pfx-Loopback)# seq 10 permit 1.1.1.0/24 ge 24
!
switch(config)# route-map loopback permit 10
switch(config-route-map-Loopback)# match ip address prefix-list loopback
!
switch(config)# router bgp 200
switch(config-router-bgp)# neighbor SPINE peer group
switch(config-router-bgp)# neighbor SPINE remote-as 200
switch(config-router-bgp)# neighbor SPINE allowas-in 1
switch(config-router-bgp)# neighbor SPINE rib-in pre-policy retain
switch(config-router-bgp)# neighbor SPINE send-community
switch(config-router-bgp)# neighbor 172.168.1.0 peer group SPINE
switch(config-router-bgp)# neighbor 172.168.1.11 remote-as 200
switch(config-router-bgp)# redistribute connected route-map loopback
```

What would tomorrow's DC fabric look like?

- **Deploy DC fabrics, anywhere, any time**
 - Run DC networks with best practices learned from Hyperscalers
 - Built-in telemetry and day 2 operational model
 - Can be deployed in any location, globally, with minimal on-site expertise
- **Fabrics are not fragile, can evolve without downtime**
 - Start small (full-mesh) and grow to larger fabrics (leaf-spine, super-spine)
 - Fabric can change size or topology in-service, without rearchitecture
 - Fabrics can easily be redeployed to follow application requirements
- **Designed to be automation-first**
 - Fabrics designed with config data structures for declarative provisioning
 - Don't expose underlay details to automation engineers, fabric is self-discovering and maintaining
 - Abstract provisioning model is familiar to cloud automation engineers



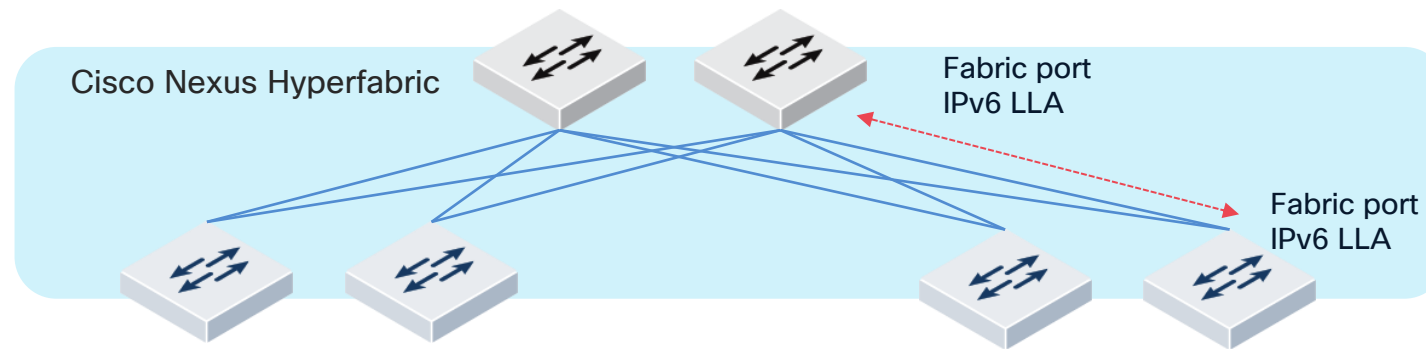
How It Works



Purpose-built to make DC fabrics **flexible, not fragile**

Automating the Underlay

- Hyperfabric switches automatically detect and authenticate each other.
The communication between switches use Fabric port IPv6 Link Local Addresses (LLA).
- Once it's hardware authenticated, underlay and overlay configuration is automatically done.

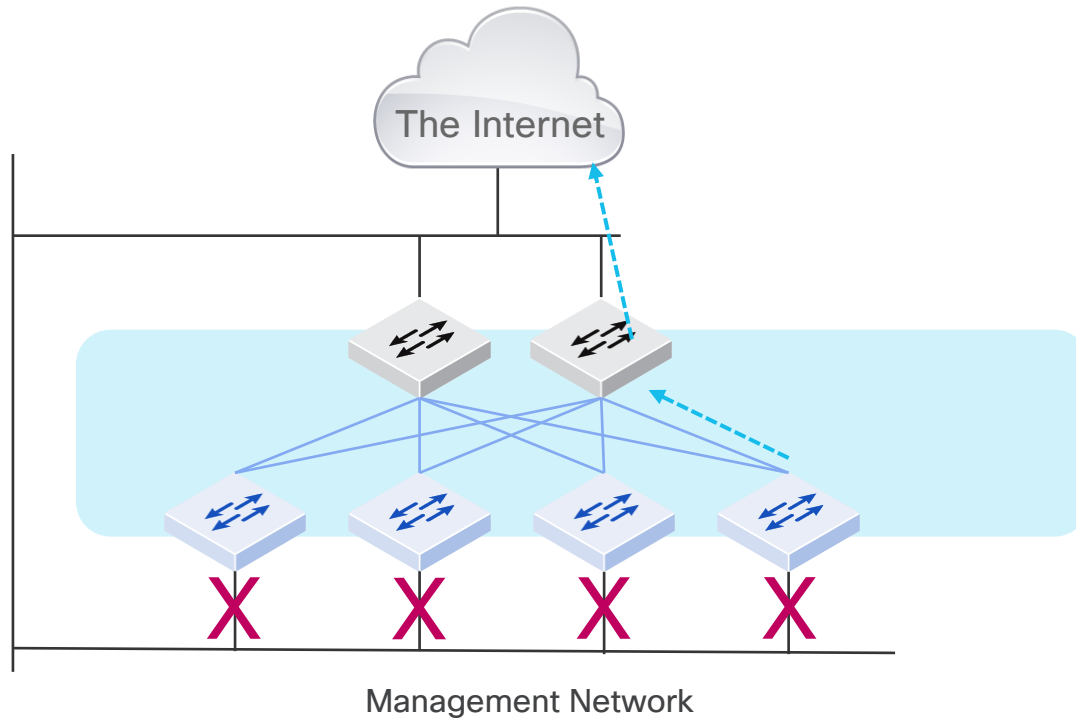


- Neighbor discovery via LLDP
- Authenticate each other
- Automatically configure BGP and VXLAN



What if we're disconnected from cloud?

- If at least one switch in the fabric is reachable to the cloud, other switches can reach the cloud via other nodes.
- All fabric functions continue to work when disconnected. Only config updates and telemetry uplift are affected until the fabric is reconnected.



Thanks to Automatic Fabric underlay deployment!

Even if it's fully disconnected, fabric keeps on running and can even converge

Troubleshooting Cloud Connectivity

Right pane shows the configured information and reachability status etc.

Left pane is to configure IP, DNS and proxy(optional)

Main Menu - Please Choose an Option:

- 1 **Change Configuration**
- 2 Diagnostics
- 3 Change Password
- 4 Reboot Switch
- 5 Power Off Switch
- 6 Factory-reset and Reboot Switch
- 1 Logout

< OK > <Cancel>

Proxy is optional

Current Switch Status

Switch time: Thu 17 Apr 2025 06:36:28 PM UTC
Up time: 19 hours, 23 minutes
Switch name: New-fab1-HF6100-60L4D-leaf1
Switch model: HF6100-60L4D
Serial number: FDO28150Q1K
Connection up time: 0 days, 5 hours, 16 minutes

IPv4 DHCP
IPv4 address: 172.31.219.137/22
IPv4 gateway: 172.31.216.1
IPv4 gateway reachable: Yes

IPv6 DHCP
IPv6 address:
IPv6 gateway:
IPv6 gateway reachable: No

DNS: *10.195.200.12 *10.195.200.67
DNS status: 2 Responding to DNS query; 2 Reachable

Proxy: http://proxy.esl.cisco.com:80
Proxy status: Responding to HTTP/HTTPS

Cloud URL: https://hyperfabric.cisco.com
Connection status: Responding to HTTPS
Connected to Hyperfabric Cloud
Claim status: Claimed

The default switch hostname is its serial #.

If dynamic IP and gateway are assigned, information is shown here

DNS IP with "*" means the DNS is responding (Good)

Cloud URL is pre-configured. No need to config.

Check Cloud status is Connected.

Claim status.
If the switch is not claimed yet, you can see claim code here

Claim

Cisco Hyperfabric Switch (cloud-managed)

Main Menu - Please Choose an Option:

- 1 **Change Configuration**
- 2 Diagnostics
- 3 Reboot Switch
- 4 Power Off Switch
- 5 Factory-reset and Reboot Switch
- 1 Logout

< [K] > <Cancel>

Current Switch Status

Switch time: Sat 08 Mar 2025 02:44:59 AM UTC
Up time: 2 days, 1 hour, 6 minutes
Switch name: FD0283909CE
Switch model: HF6100-60L4D
Serial number: FD0283909CE
Mgmt interface: eth0

IPv4 STATIC
IPv4 address: 198.19.223.161/21
IPv4 gateway: 198.19.216.1
IPv4 gateway reachable: Yes

IPv6 DHCP
IPv6 address:
IPv6 gateway:
IPv6 gateway reachable: No

DNS: *198.19.254.82
DNS status: 1 Responding to DNS query; 1 Reachable

Proxy:
Proxy status:

Cloud URL: https://hyperfabric.cisco.com
Connection status: Responding to HTTPs
Connected to Hyperfabric Cloud

Claim status: Not claimed
Claim code: cecilia-rent-diana-cool-tempo-sweet

The token is automatically
refreshed every few mins

Nexus Hyperfabric

Organization Marketing

Fabrics

Inventory

Administration

Inventory

Device inventory

1 claimed device not bound 10 devices bound to fabric 43 fabric nodes with no devices bound

Q Search Fabric 54 results

Claim devices

Claim devices

Use claim code

Generate claim codes on your device console and enter the generated code below to claim.

Enter claim codes

e.g. abcd-efg-hij, klmn-opq-rst

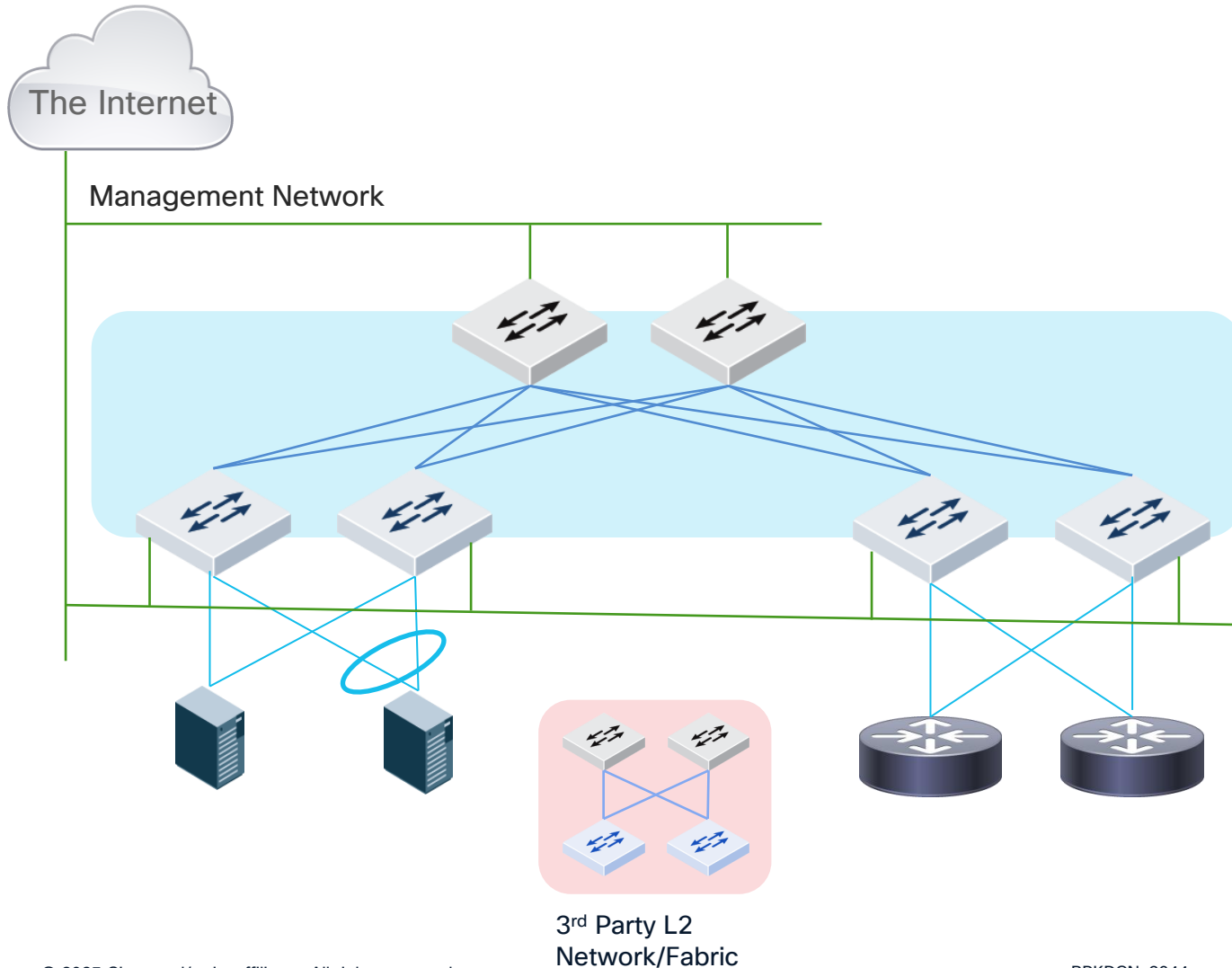
Separate claim codes with commas or new line

Cancel Claim

Inventory

</

How do you deploy Hyperfabric?



Physical Cabling

1. Switch-to-Switch
2. Management network
3. Server
4. Northbound routing
5. Existing fabric for migration

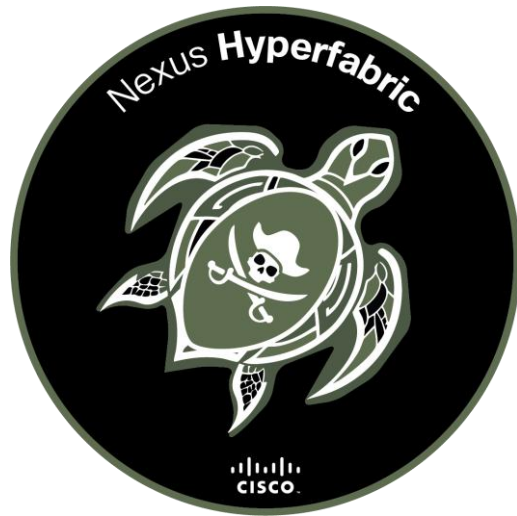
+

Logical Design and Configuration

- Underlay (Automatically done)
- Overlay VRFs, logical networks etc

Hyperfabric Demo 3

Agenda

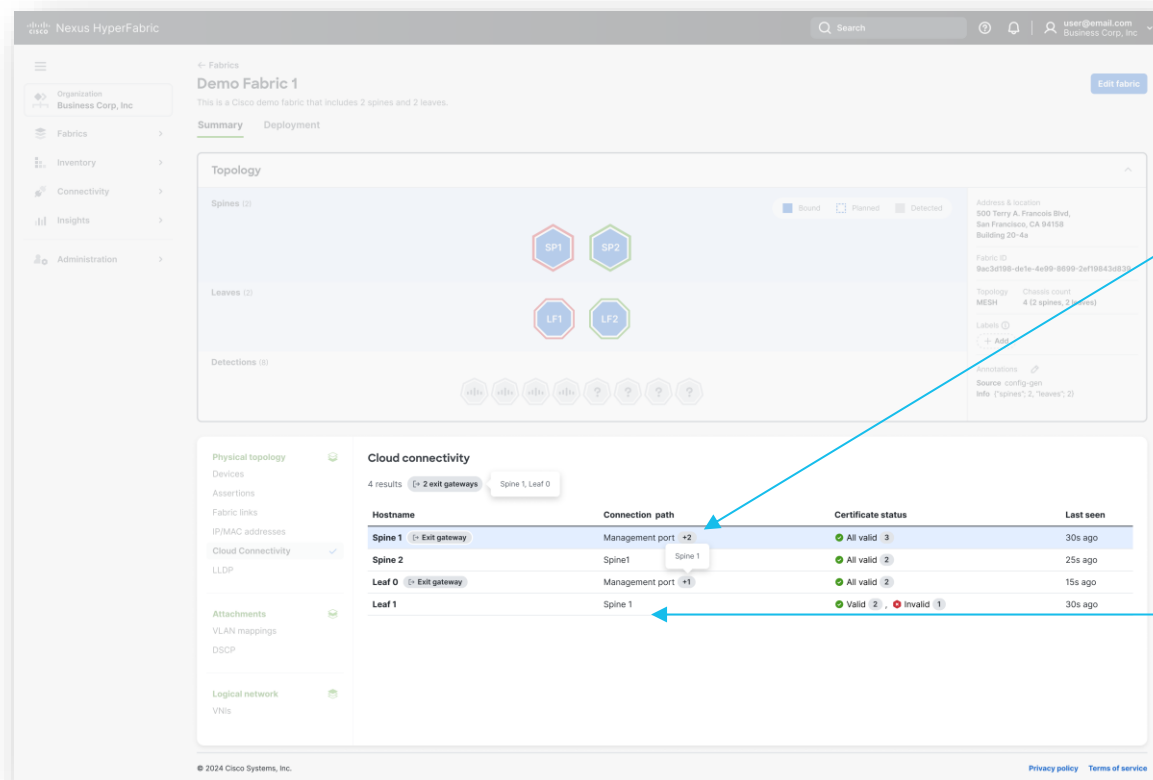


- 01 Introducing Hyperfabric
- 02 Live Demo
- 03 How it works
- 04 Telemetry and Day 2 Ops**
- 05 Multi-Site (DCI) & Roadmap
- 06 Conclusion

Cloud Connectivity Status

Pre-release Image - Subject to change

- Cloud Connectivity page shows how switches are connected to cloud (it out-of-band management interface, via another switch or front panel port)

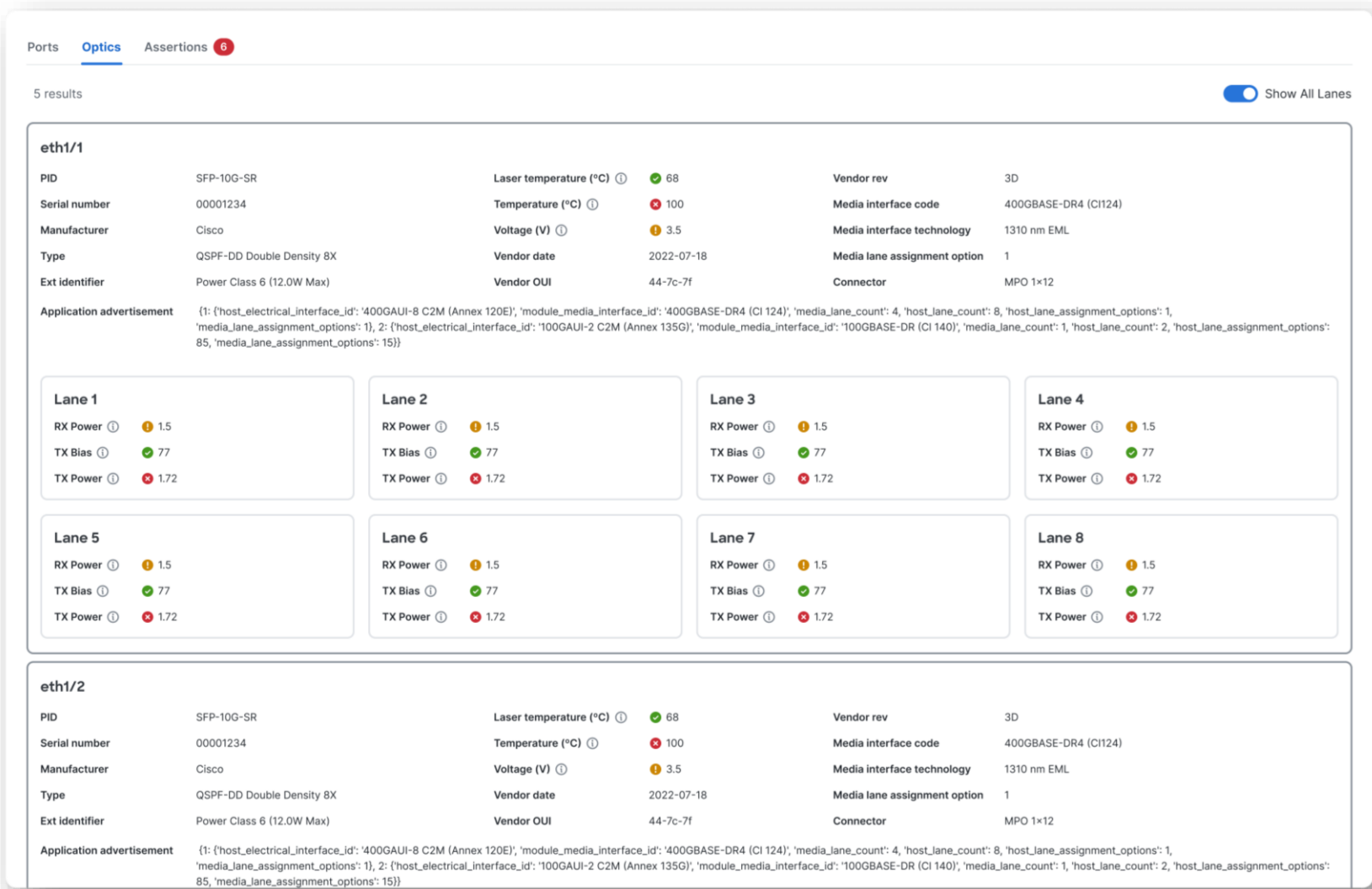


Indicate the number of exit gateway switches who have cloud connectivity via its own out-of-band management port.

Indicate the connection path.

- Management port
- Other switches (exit gateway switch)
- In-band interface (roadmap)

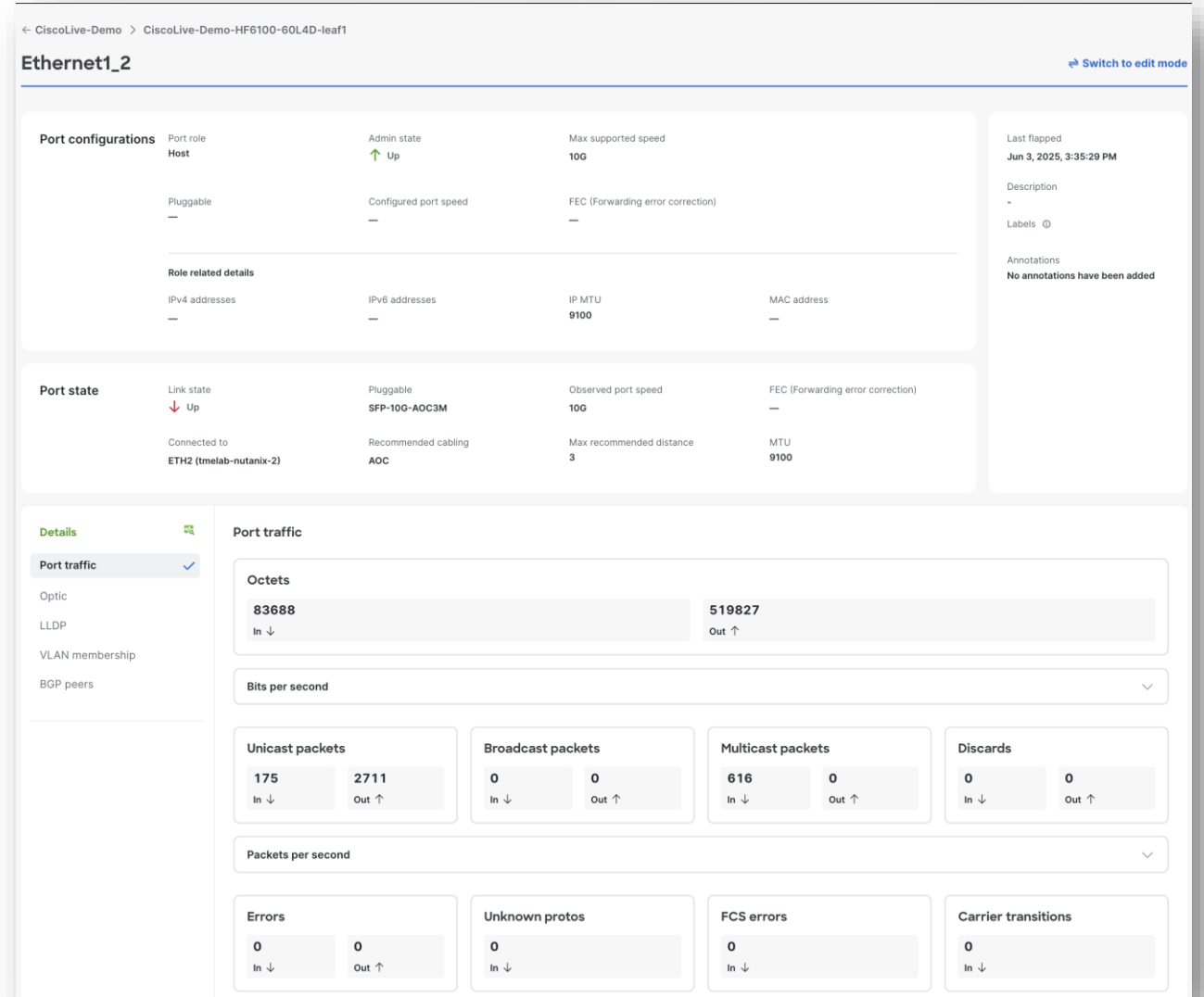
Optics / Pluggables Telemetry



Switch Telemetry

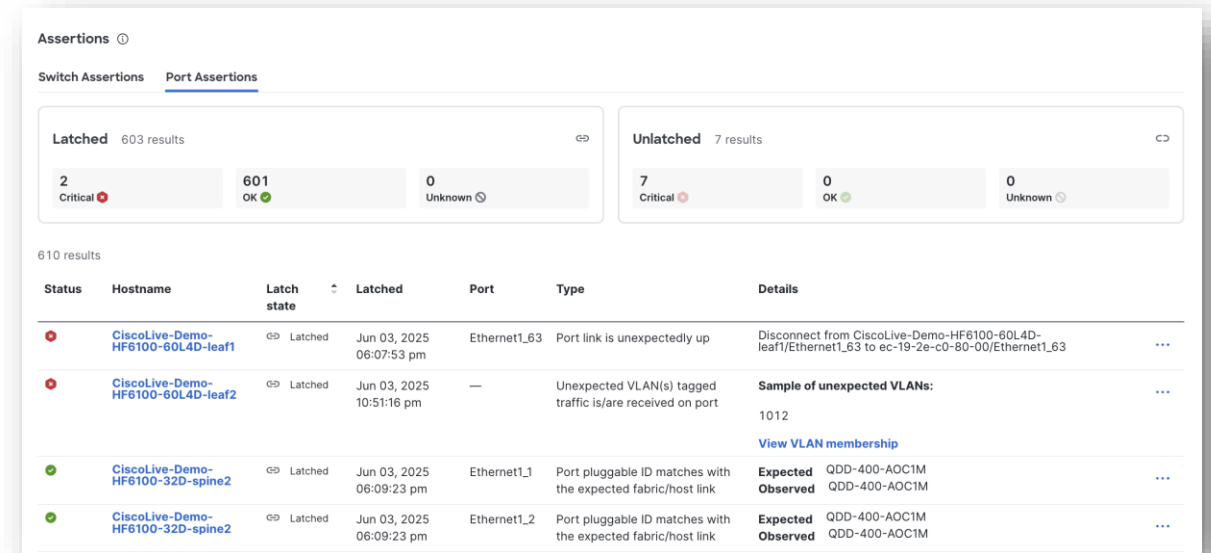
- Despite being a cloud managed fabric, HyperFabric aims to provide Switch Telemetry in near-real-time. This includes in the beginning:
- Switch Telemetry – Port Status, Assertions, Traffic Stats
- Interface Telemetry – Port Counters, Link Status, Network Configuration
- Environmental Telemetry – Per Switch sensor readings for fans, psu, etc
- Optics/Pluggables Telemetry – DOM Statistics

Port detail page



Assertions

- Assertions provide a framework that allows monitoring and troubleshooting of Hyperfabric.
- The goal of assertions are they would be raised based on a few different conditions:
- Is there a deviation from the configuration of the blueprint (i.e. interface is connected on port 3, but the blueprint says it should be port 2).
- Are end devices, or neighborships not operating as expected.
- Validation of routing, next hops, etc via IP SLA.
- Customized intent (i.e. "VLAN has traffic, BGP neighbor is learning X routes, etc") – Post FCS

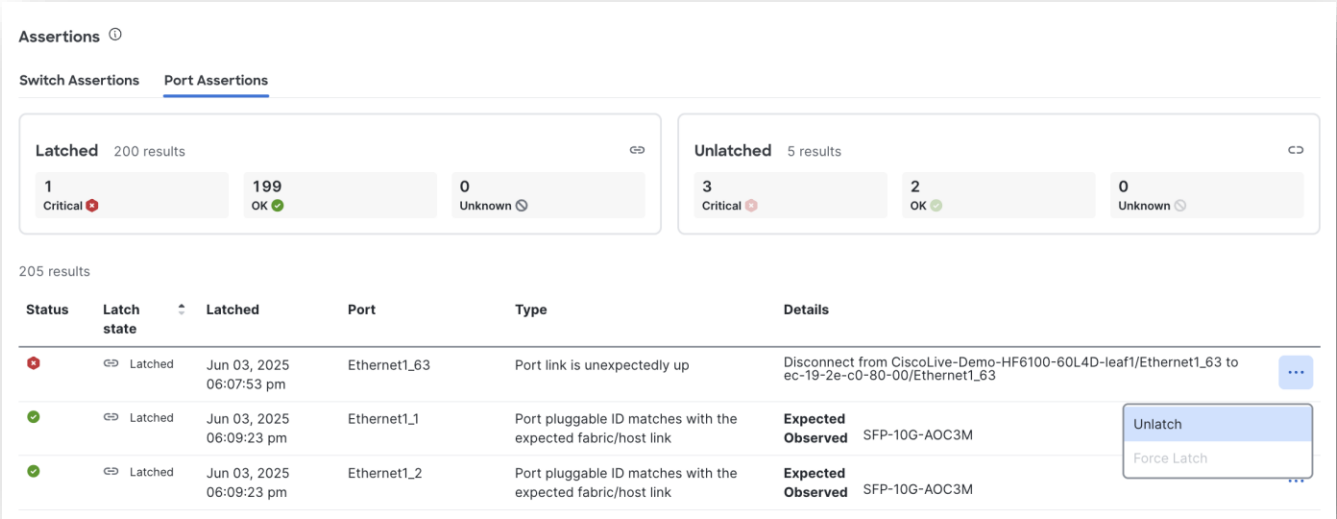


The screenshot displays the 'Assertions' section of a Cisco Hyperfabric management interface. It features two tabs: 'Switch Assertions' and 'Port Assertions', with 'Port Assertions' currently selected. Below the tabs, there are two summary boxes: 'Latched' with 603 results and 'Unlatched' with 7 results. Each box contains three sub-counts: 'Critical' (2), 'OK' (601), and 'Unknown' (0). Below these summaries is a table with 610 results. The table has columns for Status, Hostname, Latch state, Latched, Port, Type, and Details. The first two rows show critical errors for leaf1 and leaf2, while the last two rows show successful latched states for spine2.

Status	Hostname	Latch state	Latched	Port	Type	Details
Critical	CiscoLive-Demo-HF6100-60L4D-leaf1	Latched	Jun 03, 2025 06:07:53 pm	Ethernet1_63	Port link is unexpectedly up	Disconnect from CiscoLive-Demo-HF6100-60L4D-leaf1/Ethernet1_63 to ec-19-2e-c0-80-00/Ethernet1_63
Critical	CiscoLive-Demo-HF6100-60L4D-leaf2	Latched	Jun 03, 2025 10:51:16 pm	—	Unexpected VLAN(s) tagged traffic is/are received on port	Sample of unexpected VLANs: 1012 View VLAN membership
OK	CiscoLive-Demo-HF6100-32D-spine2	Latched	Jun 03, 2025 06:09:23 pm	Ethernet1_1	Port pluggable ID matches with the expected fabric/host link	Expected QDD-400-AOC1M Observed QDD-400-AOC1M
OK	CiscoLive-Demo-HF6100-32D-spine2	Latched	Jun 03, 2025 06:09:23 pm	Ethernet1_2	Port pluggable ID matches with the expected fabric/host link	Expected QDD-400-AOC1M Observed QDD-400-AOC1M

Assertions

- Assertions are statements that must be true to be green
- Designed to minimize “Alert Fatigue” of traditional alarms
- All assertions are processed “Upstairs” in Cloud
- Assertions have a “Latch”
 - “Unlatched” assertions can never be false/alarm
 - Assertions may auto-latch after 90 seconds
 - User can “unlatch” a latched assertion



Event viewer



Splunk integration for Hyperfabric events and notifications available in Q1 Cy2026

CiscoLive-Demo

Switch to edit mode

SummaryIssuesDeploymentEvent viewerOn site

Event Viewer

Last day

Jun 2, 2025, 10:52:27 PM to Jun 3, 2025, 10:52:27 PM

Events

Assertions

415404

Jun 034:00 AM8:00 AM12:00 PM4:00 PM8:00 PM

Viewer key

Failed assertionsResolved assertionsNoneConfiguration event

3Types

92 results

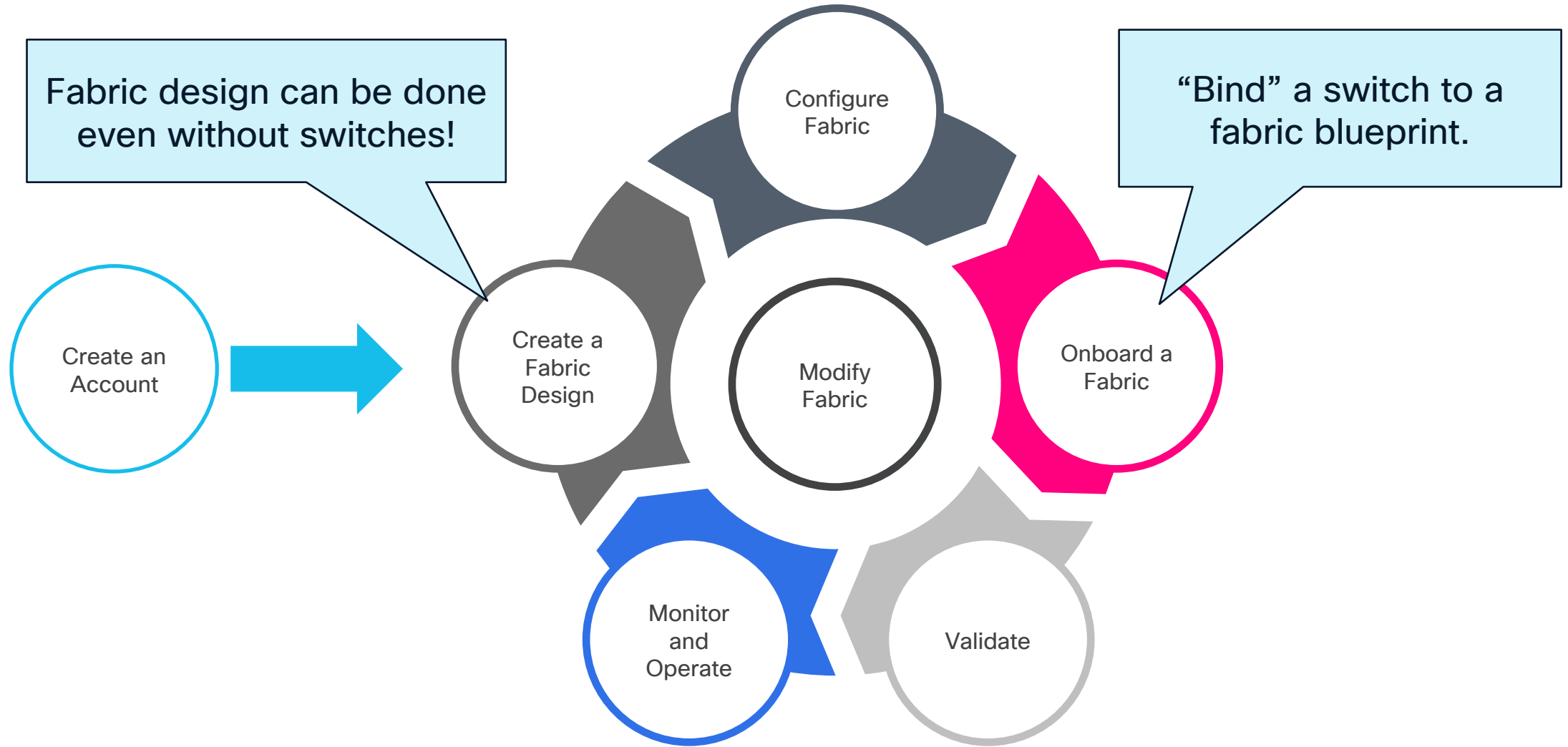
Jun 03, 2025 07:25:23 pm	Resolved assertion	Ethernet1_14 CiscoLive-Demo-HF6100-60L4D-leaf1 link is up	—
Jun 03, 2025 07:25:23 pm	Resolved assertion	Ethernet1_13 CiscoLive-Demo-HF6100-60L4D-leaf1 link is up	—
Jun 03, 2025 07:25:23 pm	Resolved assertion	Ethernet1_12 CiscoLive-Demo-HF6100-60L4D-leaf1 link is up	—
Jun 03, 2025 07:25:23 pm	Resolved assertion	Ethernet1_14 CiscoLive-Demo-HF6100-60L4D-leaf2 link is up	—
Jun 03, 2025 07:25:23 pm	Resolved assertion	Ethernet1_12 CiscoLive-Demo-HF6100-60L4D-leaf2 link is up	—
Jun 03, 2025 07:25:23 pm	Resolved assertion	Ethernet1_11 CiscoLive-Demo-HF6100-60L4D-leaf2 link is up	—
Jun 03, 2025 07:24:54 pm	Configuration event	Configuration pushed by cisco/shaphill@cisco.com	Created port-channels 101, 102, and 111
Jun 03, 2025 07:23:28 pm	Configuration event	Configuration pushed by cisco/shaphill@cisco.com	remove port channels
Jun 03, 2025 07:22:29 pm	Resolved assertion	CiscoLive-Demo-HF6100-60L4D-leaf1 is connected to cloud	—
Jun 03, 2025 07:21:39 pm	Failed assertion	CiscoLive-Demo-HF6100-60L4D-leaf1 is not connected to cloud	—

Assertion status change

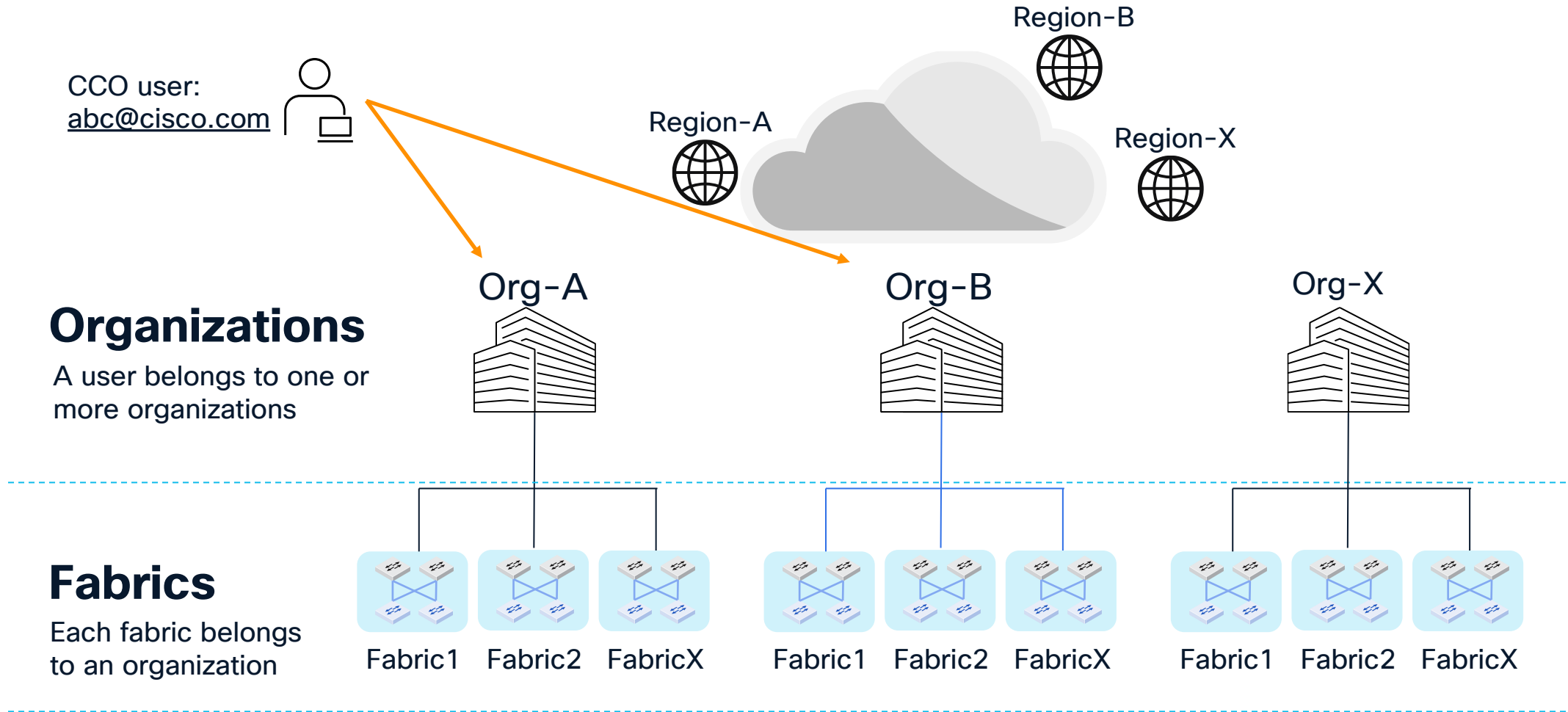
Configuration event



Cisco Nexus Hyperfabric Lifecycle



How to manage fabrics?



Managing users in your organization

Nexus Hyperfabric

Select an organization ×

Q Search organization name

+ Create new organization

Cisco-lab-Austin

Read Write

Cisco-lab-London

Administrator

Cisco-lab-Richardson

Administrator

Cisco-lab-Singapore

Administrator

CiscoLive

Administrator

✓

Nexus Hyperfabric

?

mihiguch@cisco.com

CiscoLive

User Management

Email

Role

Organization

mihiguch@cisco.com

Administrator

CiscoLive

31 results

+ Add User

Email	Role	User status	Last login	Added date
paregupt@cisco.com	Read Write	Enabled	—	—
rvenkatr@cisco.com	Read Write	Enabled	—	—
slym@cisco.com	Read Write	Enabled	—	—

Add Users

Email

user1@cisco.com

Role

Administrator

Read Write

Read Only

Status

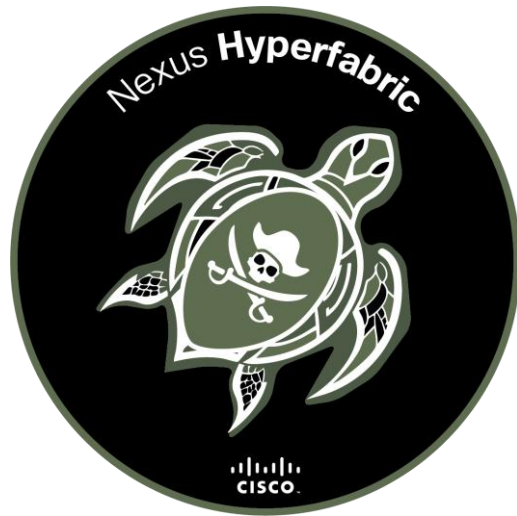
Enabled

Cancel

Save

Hyperfabric Demo 4

Agenda



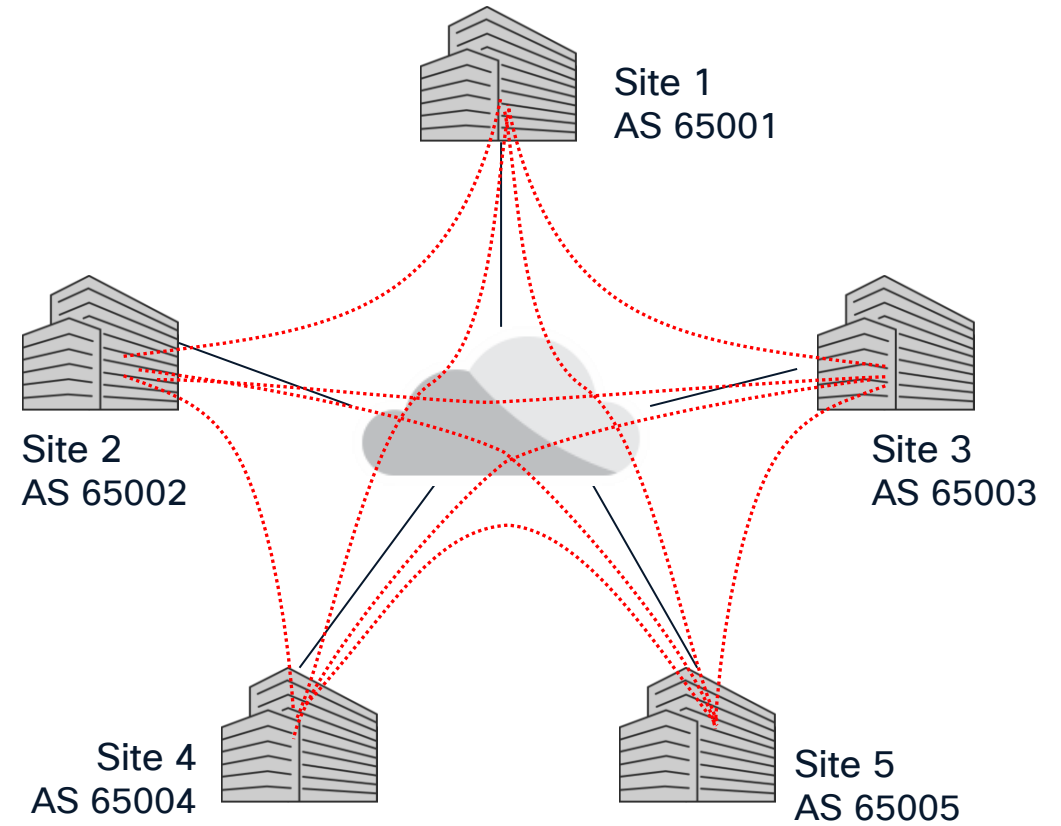
- 01 Introducing Hyperfabric
- 02 Live Demo
- 03 How it works
- 04 Telemetry and Day 2 Ops
- 05 Multi-Site DCI & Roadmap**
- 06 Hyperfabric AI

Overview

- Hyperfabric Multi-Site (DCI) functionality is a powerful new tool for scaling and connecting EVPN/VXLAN fabrics
- Based on EVPN Border Gateway

Multi-Site Border Gateway allows:

1. Remote Sites: connect remote fabrics via 3rd party IP networks
2. Scale: hide fabric complexity to peers
3. Native EVPN/VXLAN connectivity
4. Policy control over L2VNI+L3VNI routes
5. Enforce Ownership boundary between fabrics

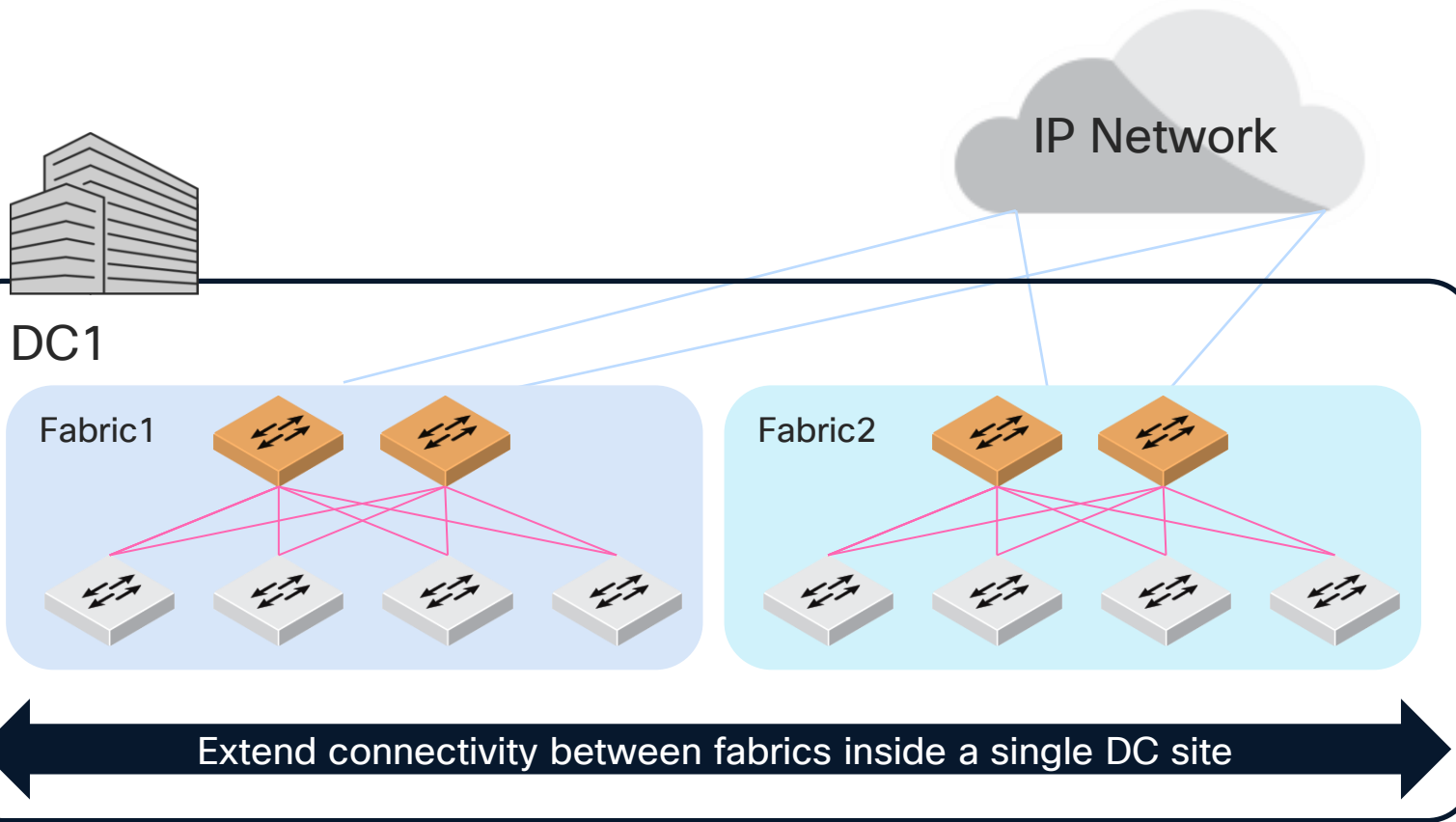


To learn more about Multi-Site and Border Gateway functionality in EVPN:

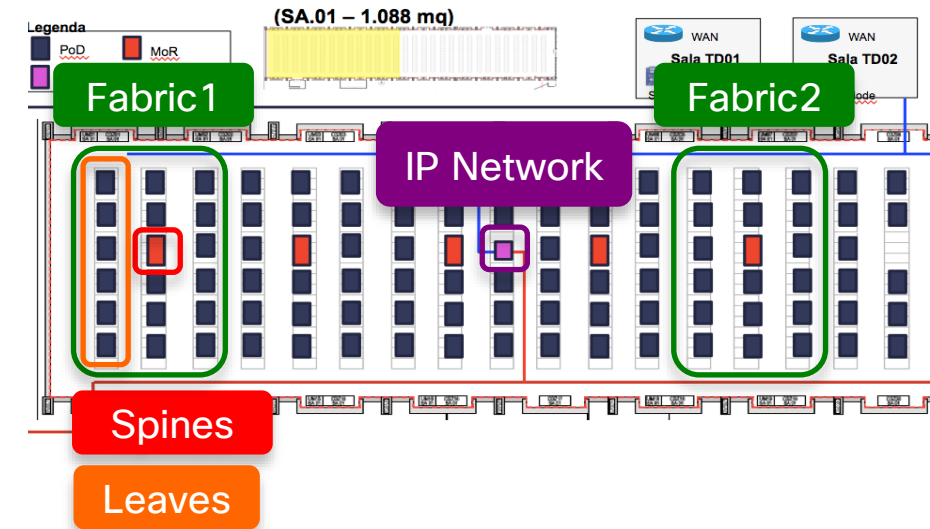
CiscoLive MEL: BRKDCN-2614 (Wed 12-Nov 4:15PM)

Multi-Site

Common use cases (1/2)

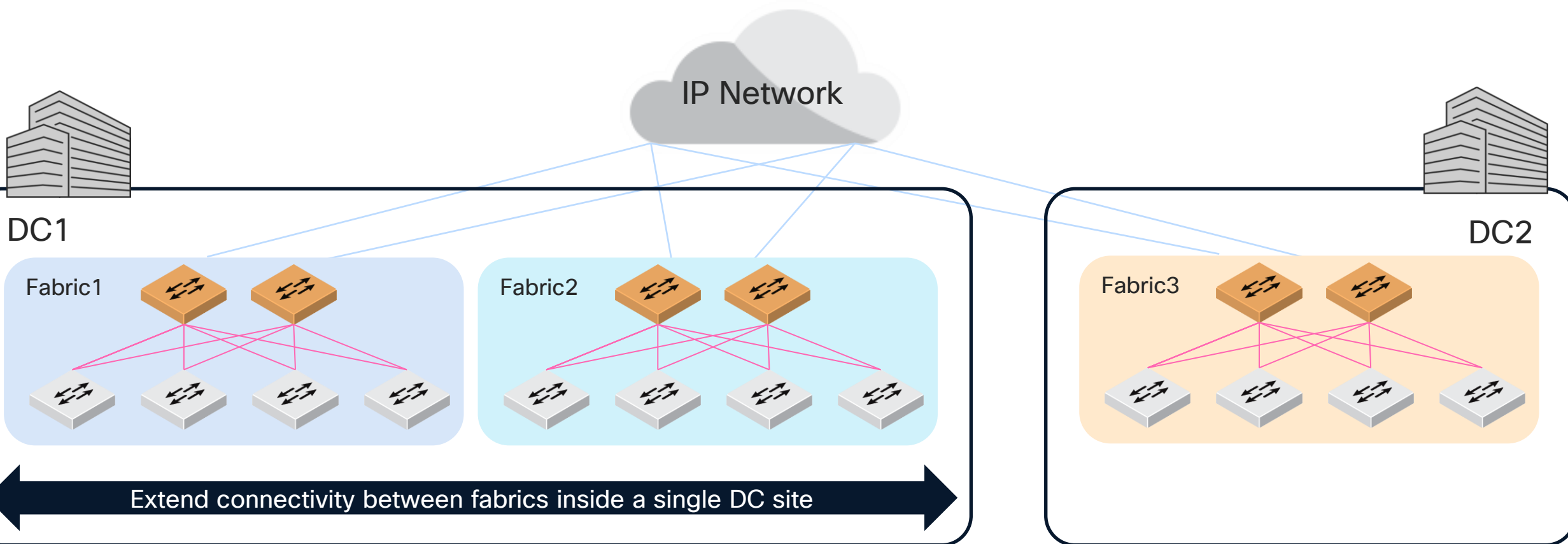


- Scale and IP mobility use cases
- Active/Active fabrics



Multi-Site

Common use cases (2/2)



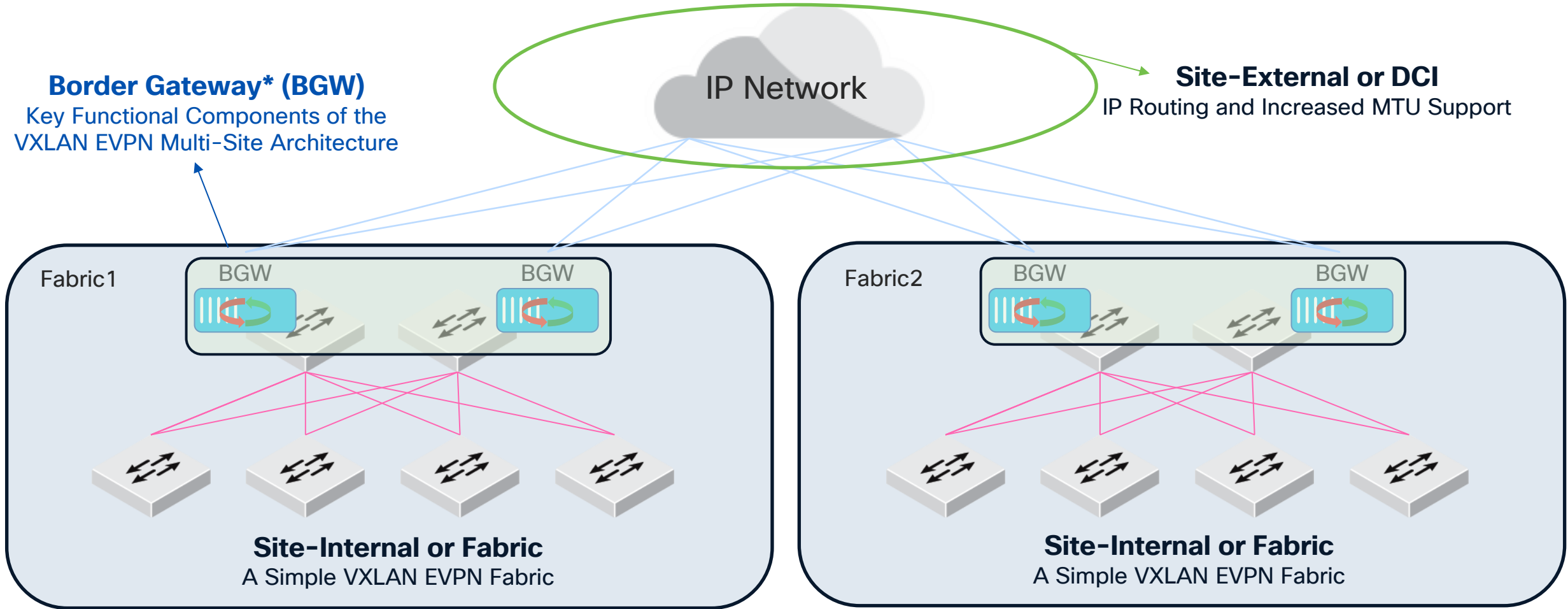
Extend connectivity between DC sites

- Disaster Recovery and IP mobility use cases
- Active/Active and Active/Standby

Functional components

Border Gateway (BGW)

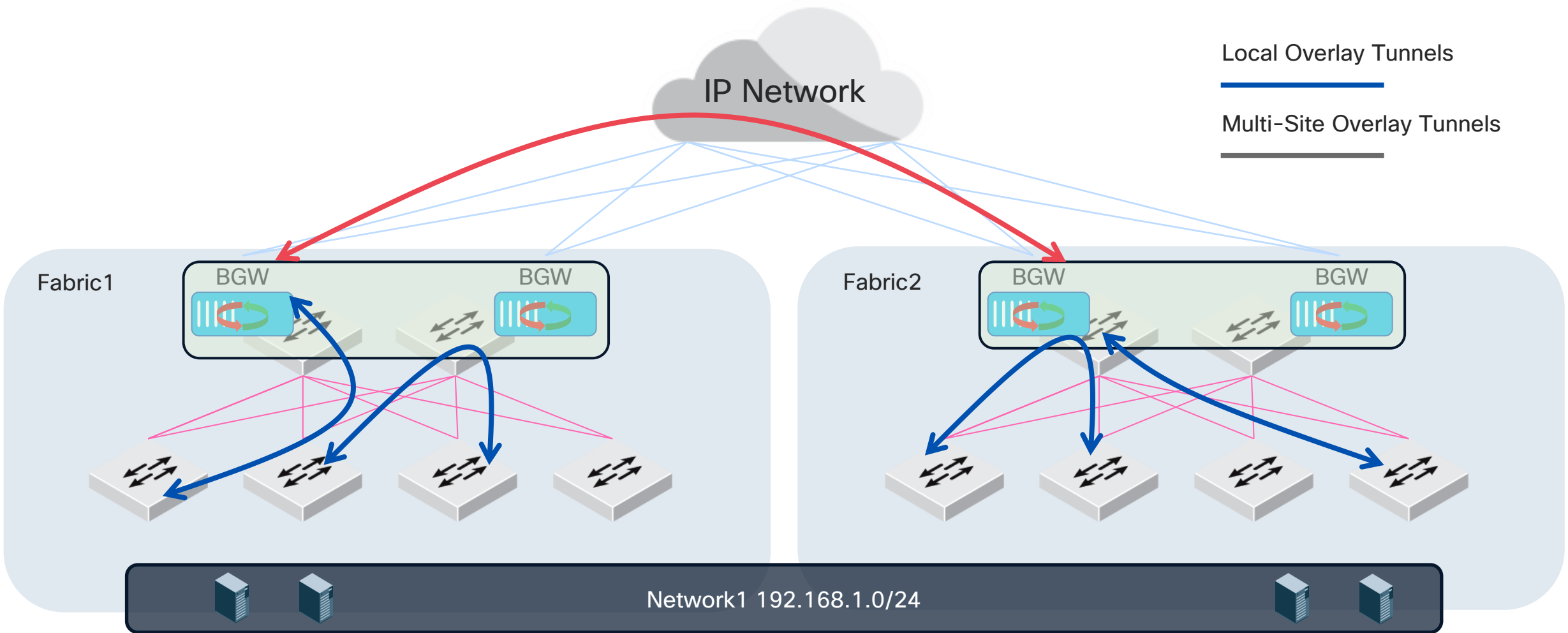
Border Gateway* (BGW)
Key Functional Components of the
VXLAN EVPN Multi-Site Architecture



*BGW and spine functions can coexist on the same physical devices

Functional components

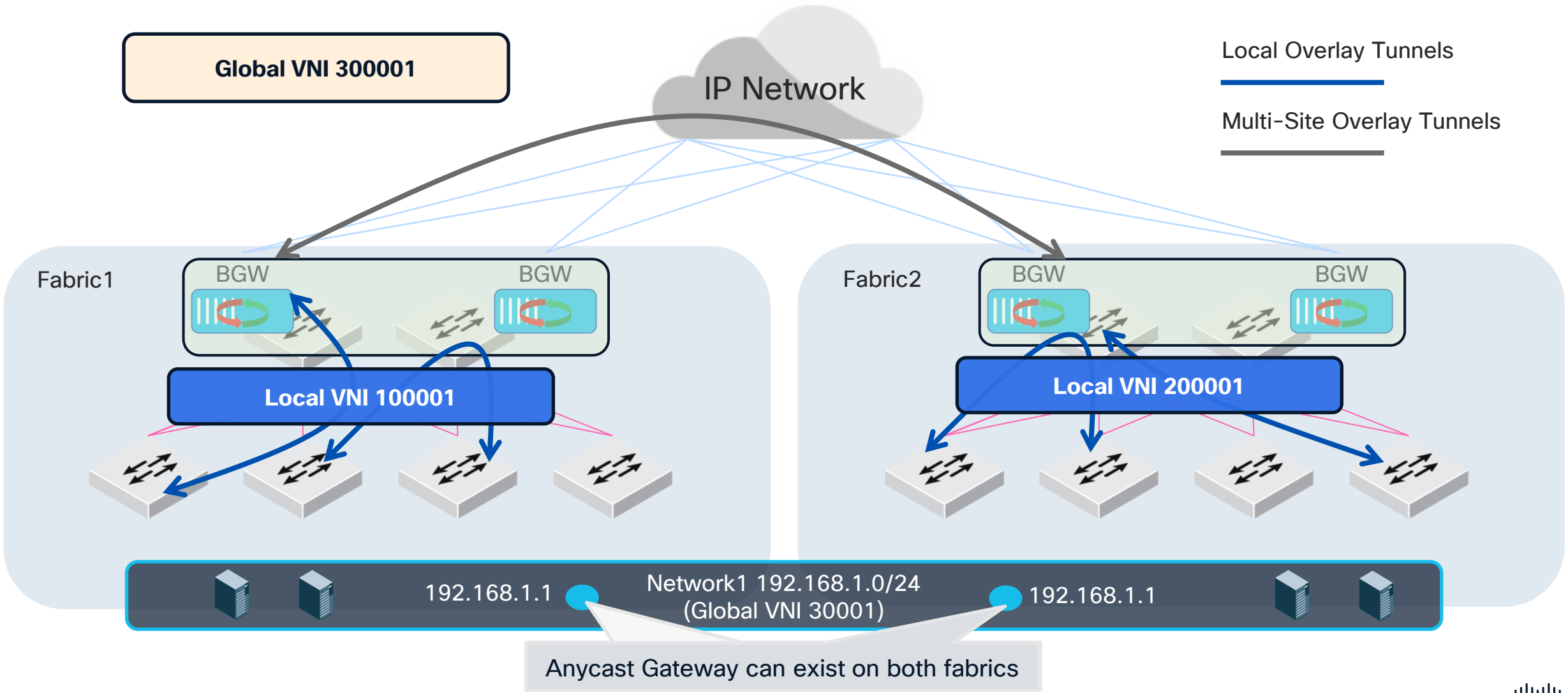
Local and Multi-site overlays



Functional components

VNID translation

Global VNI	Fabric1 local VNI	Fabric2 local VNI
300001	100001	200001



Multi-Site Config (Sneak Preview)

Note: User interface example subject to change

Nexus Hyperfabric

Search

99+

user@mail.com

Business Corp, Inc

Multi-sites

Organization

Business Corp., Inc.

Multi-site interconnects

Fabrics

Inventory

Subscriptions

Administration

Notifications

(Interconnect details page) Oscorep USA

Preview changes

Review configuration

Edit mode

Interconnect type

MTU

Authentication

Description

Full-mesh

9100

MD5

Lorem ipsum

Edit properties

Fabric interconnects

VNI extensions

(future)Topology

+ Add Fabric

Fabric name	Owned by	Virtual IP for fabric	External ASN	Primary IPs	BGP source address	Invitation		
New york	tester@testqa.com	10.1.1.1	65001	192.168.1.1	192.136.1.1	Pending invite	Send invite	Uninvite
Chicago	Business Corp, Inc.	11.1.1.1	65002	192.168.1.2	192.112.1.2	Invited	Resend	Uninvite
Los Angeles	Org-beta	22.2.22.2	65003	192.168.1.3	192.165.1.3	Accepted	Re-invite	Uninvite
Austin	Org-gamma	3.3.3.3	65004	192.168.1.4	192.124.1.4	Rejected	Re-invite	Uninvite

Edit port role

Select port role

Fabric

Host

Routed

Unused

Border gateway

This port is configured for border gateway use and cannot be reassigned.

Edit this configuration in Multi-site interconnections.

IP address

10.1.1.1/30

Cancel

Save

Privacy policy

Terms of service

Add a fabric to multi-site interconnect

Select fabric to connect *

SFO-24

Description

A request to join this multi-site will display in the selected fabric page in Cisco Hyperfabric.

Virtual IP for fabric * ⓘ

10.1.1.1

External ASN * ⓘ

65001

Border gateway configurations (at least 1 required) *

Primary IP ⓘ

BGP source address ⓘ

Border gateway 01

e.g. 10.10.10.10

e.g. 10.10.10.10

Border gateway 02

e.g. 10.10.10.10

e.g. 10.10.10.10

Cancel

Invite

Add VNI extension

VNI Extension name

vni-01 (auto-generated)

Description (optional)

VNI to normalize *

23455

Currently, Cisco Nexus Hyperfabric enables VNI extensions for layer 2. Common anycast gateways will be supported in a future release.

Select fabric(s) to extend to *

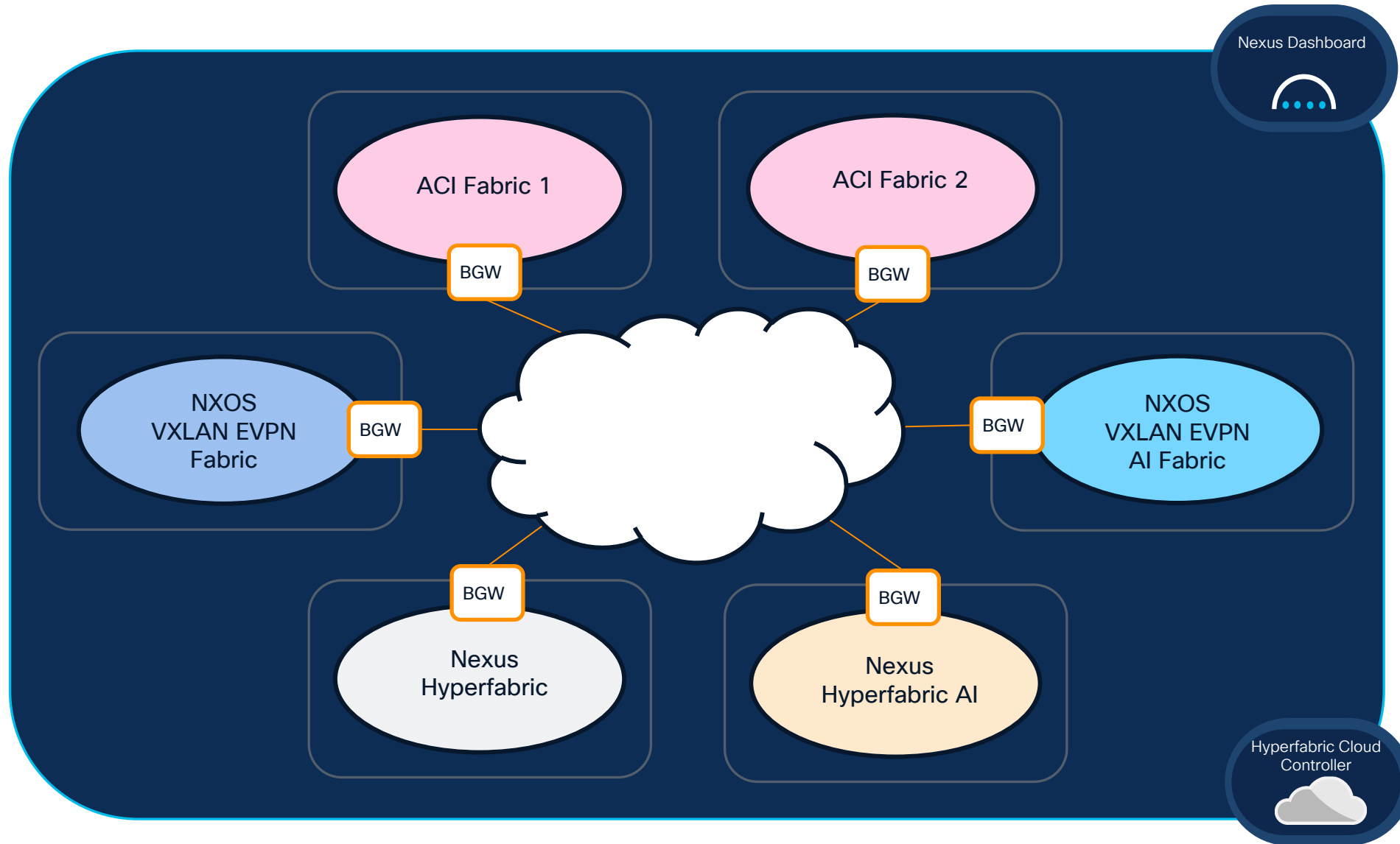
fabric01 X fabric02 X

Cancel

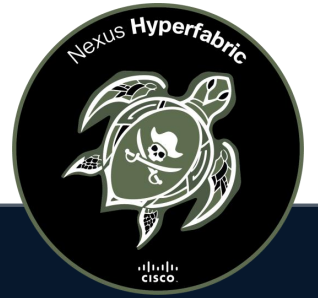
Add



Multi-Site as native peering model for Nexus One



Hyperfabric roadmap



Major releases

Hyperfabric AI

HF6100-64ED (800G)

Nexus 9300 Switch
(1/10G Cu, FX3)

UCS C845A M8 (RTX)

Hyperfabric
EU sovereign cloud

Hyperfabric
Enterprise DC

- Advantage subscription package
- Super-spine, 10Ks host ports
- Security / Policy
- Multi-Site via Nexus Dashboard with ACI & NSOX

3QC25

4QC25

1QC26

2QC26

3QC26+

- Multi-Site between Hyperfabrics
- Advanced external notifications
- SAML authentication federation
- Predefined CoS and QoS profiles

- Southbound BGP
- Advanced external notifications
- Cisco AI POD support
- IPSLA tracked static routes

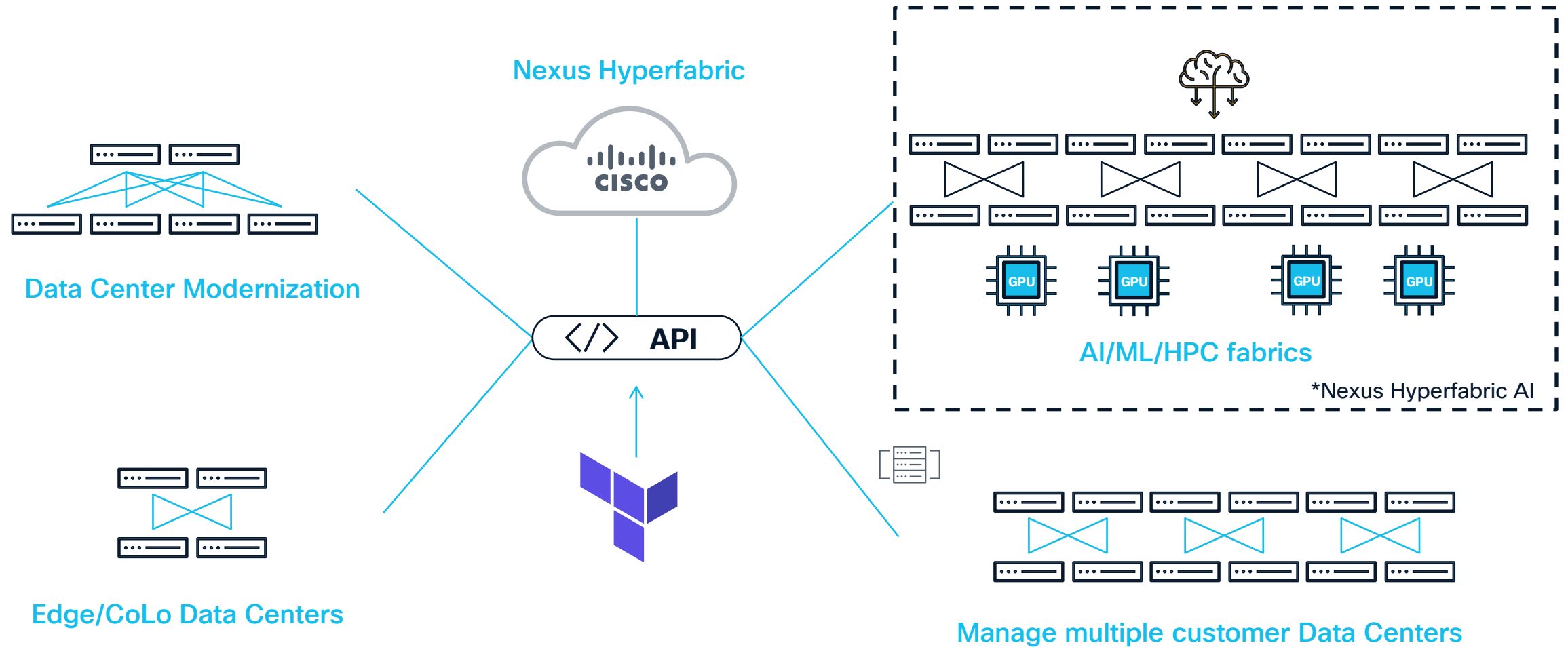
Future roadmap features

- Policy-based routing
- Per-port VLAN mapping
- Advanced loop prevention
- ERSPAN + flow export
- IPM probing and visibility

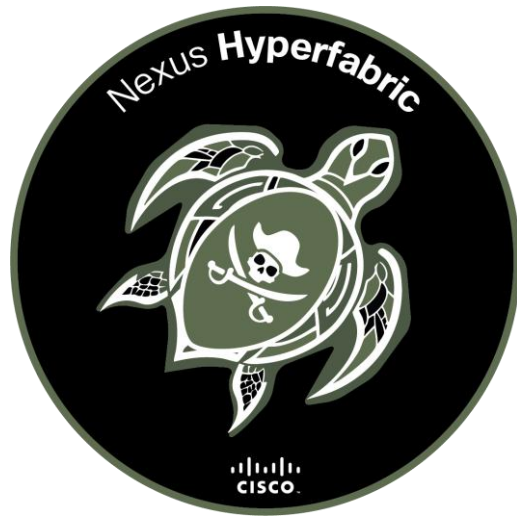
Essentials subscription features

Use Cases: Where is Hyperfabric Deployed Today?

Single global GUI / API endpoint for all owned fabrics



Agenda

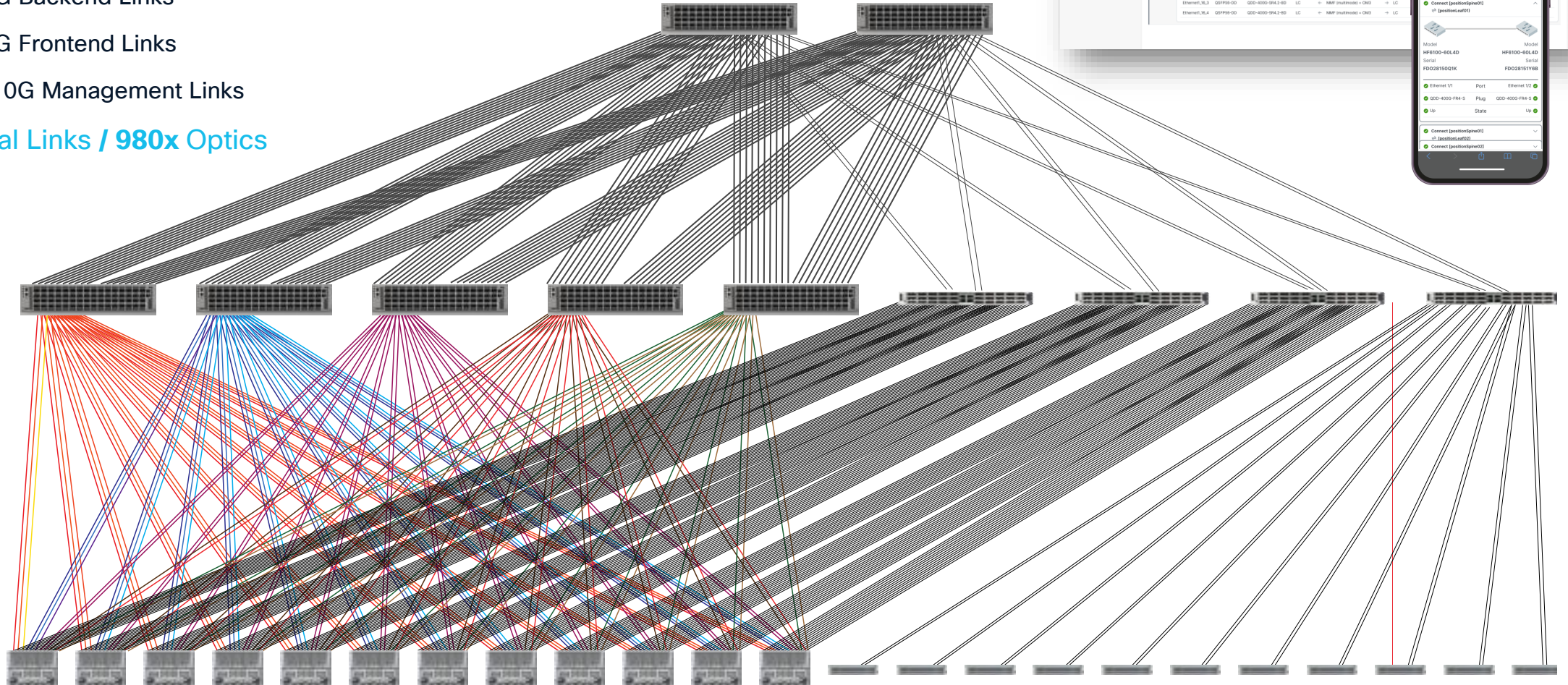
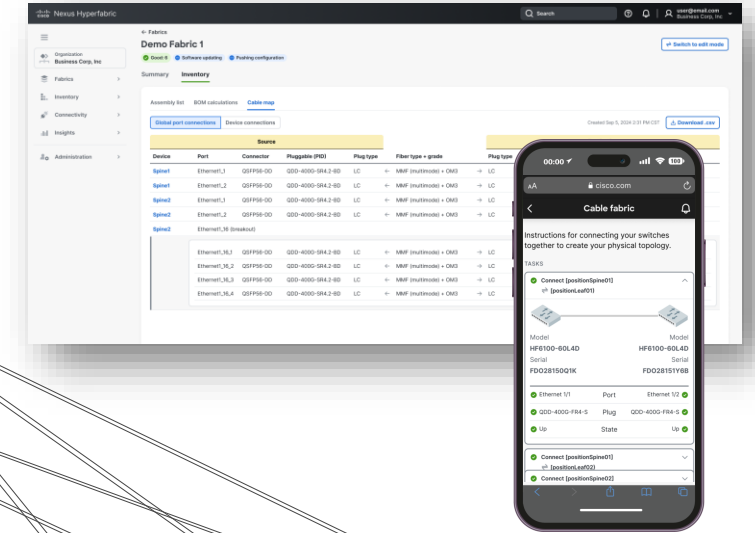


- 01 Introducing Hyperfabric
- 02 Live Demo
- 03 How it works
- 04 Telemetry and Day 2 Ops
- 05 Multi-Site DCI & Roadmap
- 06 **Hyperfabric AI**

Hyperfabric Demo 5

A “small” \$5M AI Training Cluster

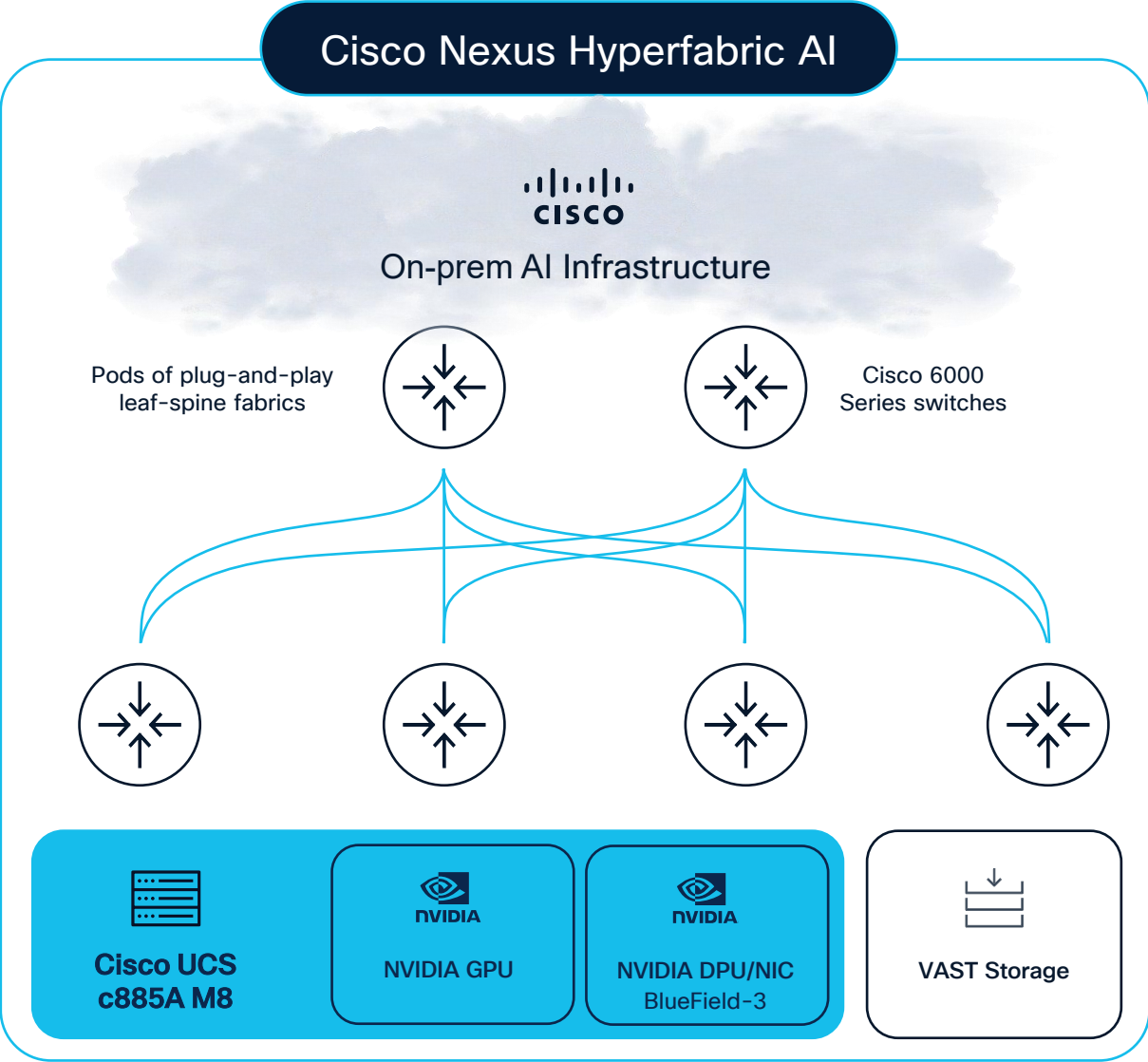
- **12 UCS GPU Servers (96x GPUs) + Storage**
 - 112x 800/400G Fabric Links
 - 96x 400G Backend Links
 - 48x 400G Frontend Links
 - 189x 1/10G Management Links
- **= 445 Total Links / 980x Optics**



Cisco Nexus Hyperfabric AI

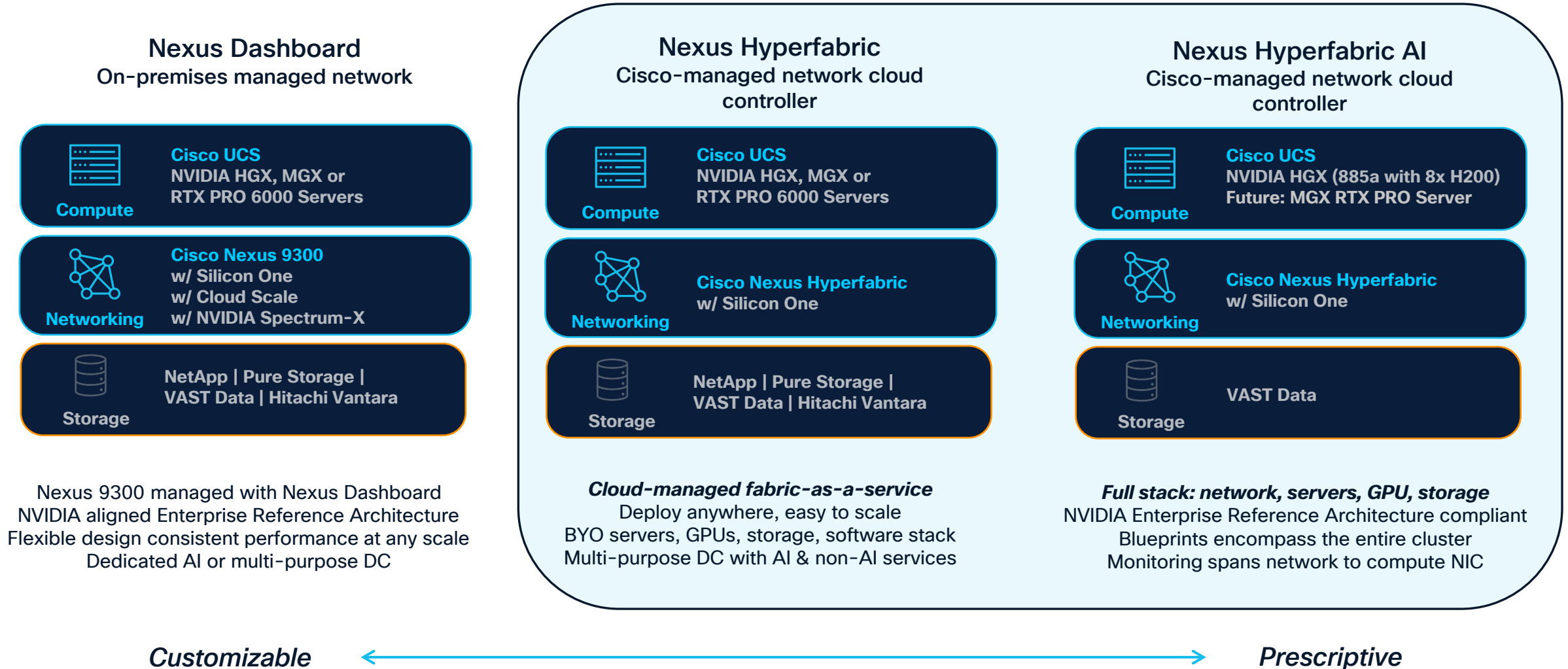
COMING THIS YEAR(CY25)

High-performance Ethernet	Cloud-managed operations
Unified stack including NVAIE	AI-native operational model
Democratize AI infrastructure	Visibility into full stack AI



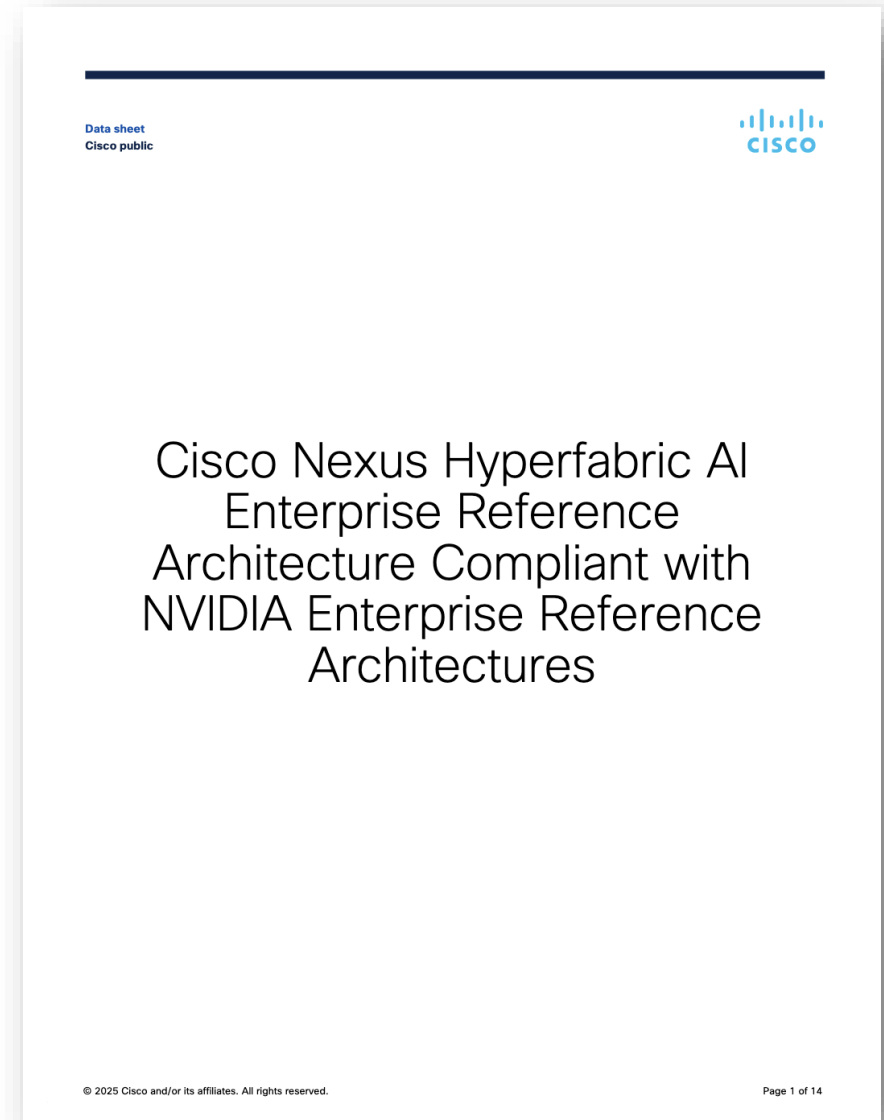
Cisco AI PODs Solution Options

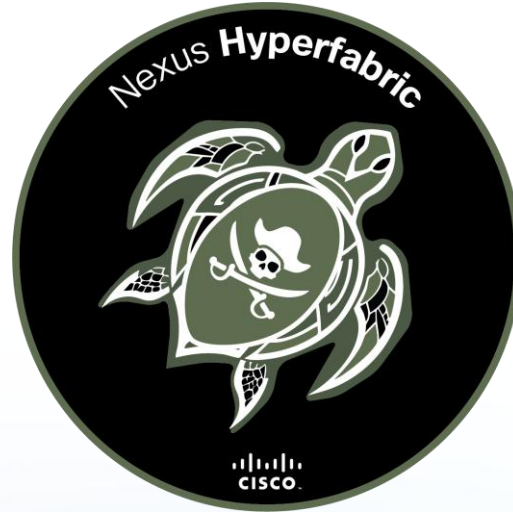
Choose Based on AI Use-Case and Operational Model



Documentation links

Hyperfabric AI Enterprise Reference Architecture





Build your fabric today!

<https://hyperfabric.cisco.com/>

Explore more for Hyperfabric

- Cisco Live Melbourne
 - Walk in Lab:
 - Cisco Nexus HyperFabric Lab [LABDCN-2619]
 - World of Solutions Demos:
 - Explore Cisco Nexus Hyperfabric
 - Experience Cisco Nexus Hyperfabric AI
- Cisco Live San Diego (June 2025)
 - On Demand Sessions
 - Cloud-Managed Data Center Networking Made Easy: Introducing Cisco Hyperfabric AI [PSODCN-1008]
 - How to Setup a Nexus Hyperfabric from Scratch [BRKDCN-2907]
 - AI Infra for the Rest of Us [BRKDCN-2677]
 - The Engineer Experiences for Cisco Nexus Hyperfabric [DEVNET-1454]
 - NorthWest Natural Gas Optimizes IT Operations with Nexus Hyperfabric [CSSDCN-1002]
 - Mastering Day 2 Operations of Cisco Nexus Hyperfabric [TACDCN-2014]

Documentation links

Cisco Nexus Hyperfabric User Content

The Nexus Hyperfabric user content collection takes you through the user journey to deploy and manage your data center fabrics.

Learn

Deploy

Get Started

Configure

Use

Troubleshoot

Reference

Learn

Deploy

Get Started

Configure

Use

Troubleshoot

Reference

Search or ask about Nexus Hyperfabric

Learn

Deploy

Get Started

Configure

Use

Troubleshoot

Reference

Deploy

Cisco 6000 Series Switches

HF6100-32D

HF6100-60L4D

Overview

Prepare to Install

Install the Switch

Install the Fan

Install the Power Supply

Hyperfabric Series - Secure Boot

Hyperfabric Series - QR Code

Regulatory Compliance and Safety Information

Statement of Volatility

Get Started

Release Notes

Getting Started

Subscriptions

Bringing Up 100G Fabric Secondary Switches

Extending Connectivity to Cisco Nexus Hyperfabric

Configure

Cisco Nexus Hyperfabric -- Getting Started

Search or ask about Nexus Hyperfabric collection

Explore top questions

Updated August 12, 2025

Save PDF Feedback

Expand all sections

Cisco Nexus Hyperfabric

Components of a Cisco Nexus Hyperfabric deployment

How Cisco Nexus Hyperfabric works

Switch telemetry

Nexus Hyperfabric use cases

The Cisco Nexus Hyperfabric lifecycle

Accessing Cisco Nexus Hyperfabric

Designing the fabric blueprint

Bill of materials and ordering

Onboarding the fabric

Cisco Nexus Hyperfabric

The Cisco Nexus Hyperfabric is a fabric-as-a-service solution that allows you to design and build a physical network that is managed by a cloud-based service. Your network can start as small as a single switch and can grow to multiple locations, each with a fabric of many switches.

The design, deployment, and operation of the Cisco Nexus Hyperfabric is based on a shared responsibility model between you and Cisco. Cisco automation and operations staff own the proper functioning of the cloud-based service and the software upgrade process. Your staff maintains direct control of the wiring of switch uplinks and of all interconnections to your applications, hosts, domestic network, and connectivity to the cloud-based service.

Components of a Cisco Nexus Hyperfabric deployment

These components comprise a Cisco Nexus Hyperfabric deployment:

- Cisco Nexus Hyperfabric service-A scalable, globally-distributed, multi-tenant cloud-based software-as-a-service (SaaS) network infrastructure management solution. The Cisco Nexus Hyperfabric service is hosted and operated by Cisco, and is the single point of provisioning and visibility for your fabrics.
- Cisco Nexus Hyperfabric switches-Cloud-managed Cisco 6000 switches on your premises or in a colocation environment. Bootstrapping and administration of the switches is handled by the cloud-based service.
- High-performance fabric-Mesh or spine-leaf topologies that use EVPN VXLAN, Layer 2 VLANs, or IPv4/IPv6 routing.
- Graphical user interface (GUI) and the REST API-The interfaces that you can use to perform tasks in Cisco Nexus Hyperfabric.
- On-site page-Provides the network cabling technicians with step-by-step tasks to claim, bind, and cable the devices in your fabric. This page also provides real-time validation of the fabric topology.

Cisco Nexus Hyperfabric components



Cisco DevNet

Documentation Learn Technologies Community Events

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Technology Data Center Hyperfabric

Learn Docs Community

Deploy, Build, and Automate

The Cisco Nexus Hyperfabric is a fabric-as-a-service solution that allows you to design and build a physical network that is managed by a cloud-based service. Your network can start as small as a single switch and can grow to multiple locations, each with a fabric of many switches.

Read the docs

EVENT

Cisco Live! 2025 Hyperfabric sessions

DATA SHEET

Cisco Nexus Hyperfabric data sheet

DATA SHEET

Cisco 6000 series switches data sheet

What can I do with the Cisco Nexus Hyperfabric API?

Design before you buy

Plug-and-play deployment

Assertion-based monitoring

Discover Cisco Nexus Hyperfabric sample code

Download sample code from GitHub.

White paper

Cisco Public

Cisco

The bridge to possible

Extending Connectivity to Cisco Nexus Hyperfabric

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Page 1 of 20

White paper

Cisco Public

Cisco

The bridge to possible

Nexus Hyperfabric Security

Overview of the Solution's Security Architecture and Procedures

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Page 1 of 23

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Contact me at: dbackman@cisco.com

Thank you

CISCO Live !

