

The background features a vibrant, multi-colored abstract design. On the left, there are horizontal, wavy bands of color in shades of red, orange, yellow, and green. On the right, a bright white light source emits a series of sharp, triangular rays in various shades of blue and cyan, creating a starburst effect that spreads across the right half of the image.

cisco *Live!*

Let's go

#CiscoLiveAPJC



The bridge to possible

Mean time to innocence:

A use case approach to trouble shooting and visibility
with Nexus Insights

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Matthias Wessendorf - Principal Technical Marketing Engineer

BRKDCN-3924

CISCO *Live!*

#CiscoLiveAPJC

Cisco Webex App

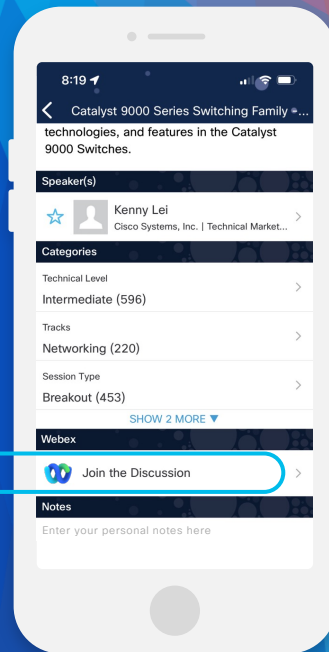
Questions?

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”
- 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 December 22, 2023.



<https://ciscolive.ciscoevents.com/ciscolivebot/#BRKDCN-3924>

Agenda



Day 2 Ops



Nexus Dashboard Insights Overview



Orchestrator Assurance

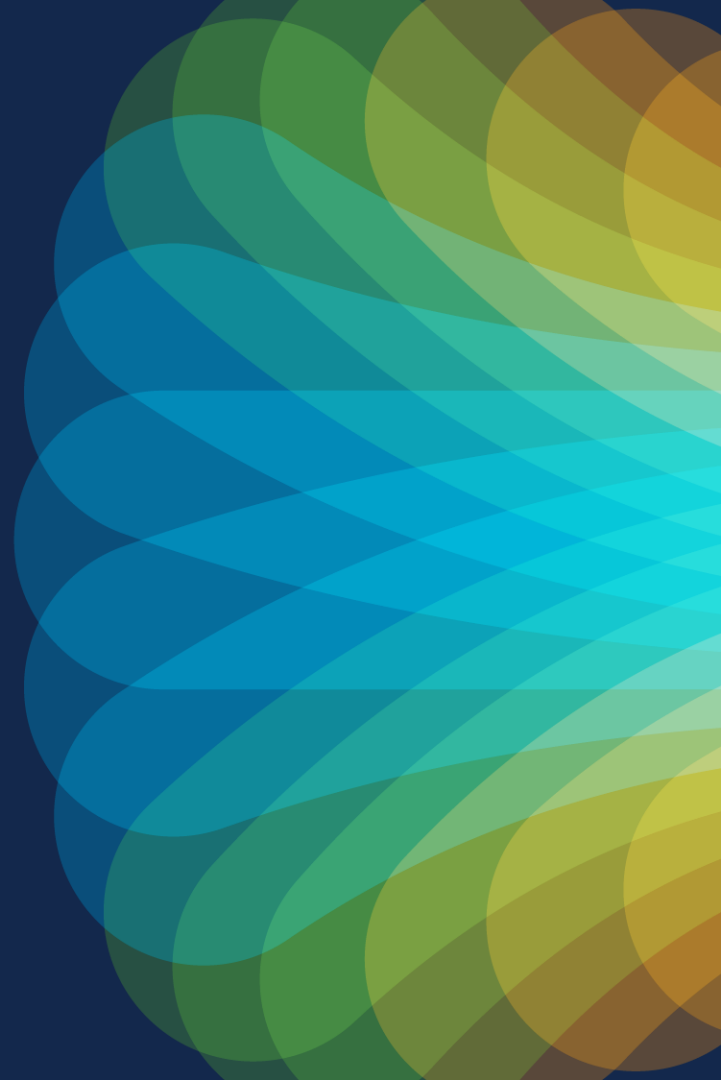


Troubleshooting Demos



Conclusion

Day 2 OPS



Managing the Complete Lifecycle

Day
0

Infrastructure
planning,
delivery and
installation

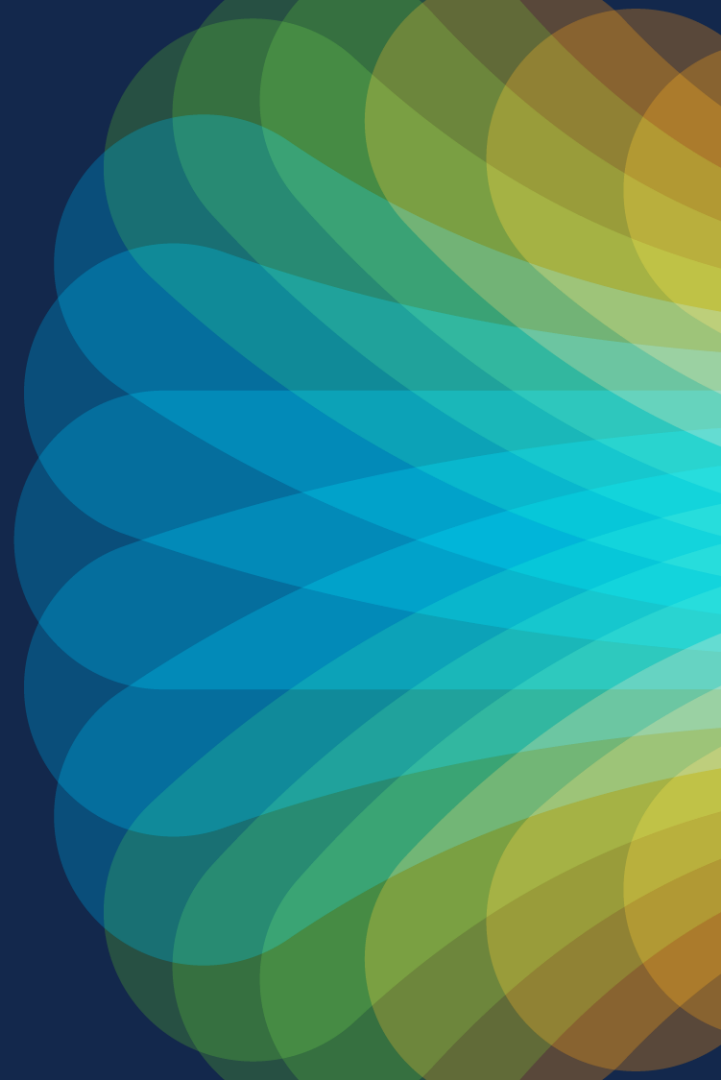
Day
1

Discover,
configure
and secure

Day
2

Assure,
monitor and
troubleshoot

What's
happening on
Day 2 and what
needs to
change?



Customer Challenges

Today's tools do not address modern network needs



Fragmented

- Too many tools addressing silo-ed visibility use cases
- Some are old, and some are expensive
- Different protocols/mechanisms



Reactive

- Inconsistent API architecture
- Specialized knowledge required
- Difficult to root-cause issue, and often time too late to react to it

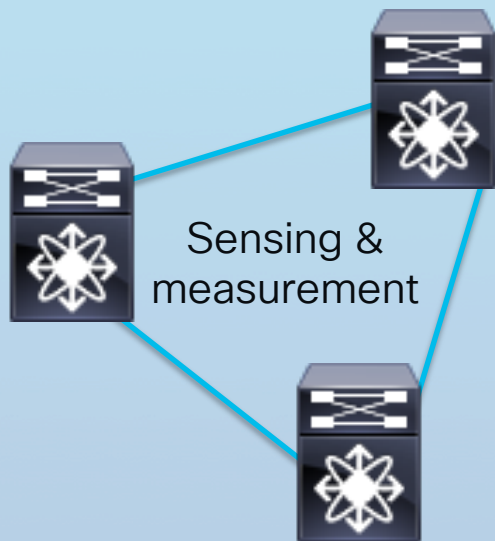


Limited Insights

- Low data fidelity that is not actionable
- Lack of data correlation, don't get the full picture
- No dataplane visibility

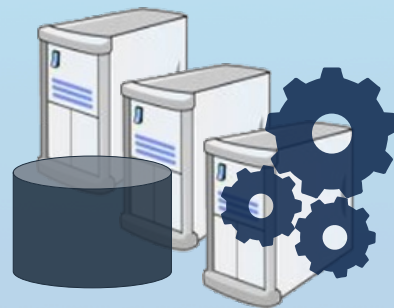
Network Telemetry Frees the Data

Where Data Is Created

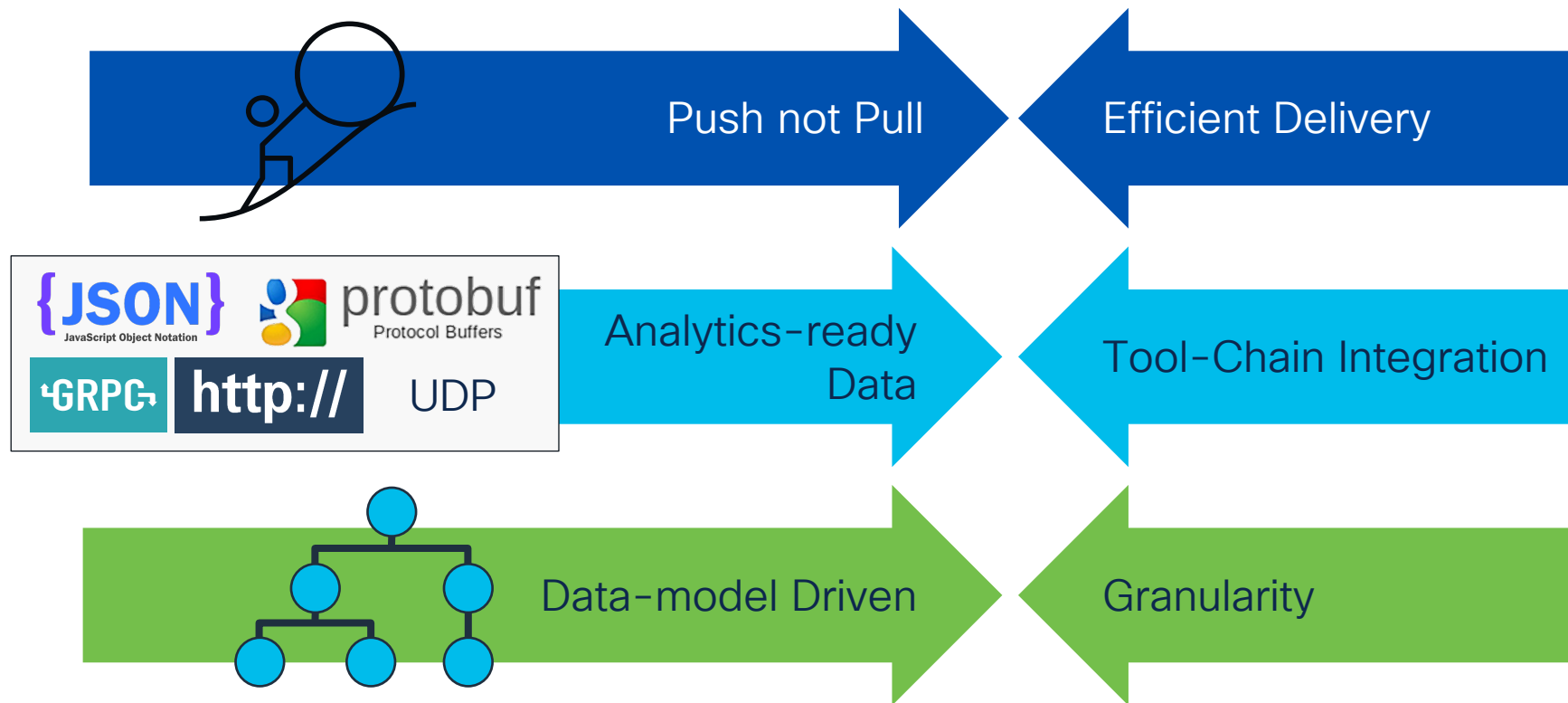


As Much Useful Data
As Efficiently as Possible

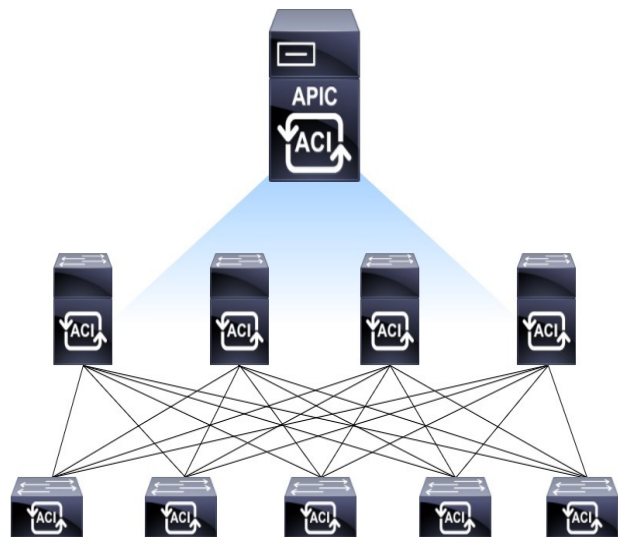
Where Data Is Useful



Key Streaming Telemetry Characteristics



Day 2 Operations Stack



Assurance

- Policy/ Control/Data plane Assurance
- Incident and Problem Management
- Compliance and Audit

Proactive Maintenance

- Fabric health and maintenance based on global Cisco advisories
- Network security maintenance based on PSIRTs and known vulnerabilities

Troubleshooting/Monitoring

- Fabric Health monitoring
- Fabric wide resource monitoring
- Anomaly detection

Nexus Dashboard Insights

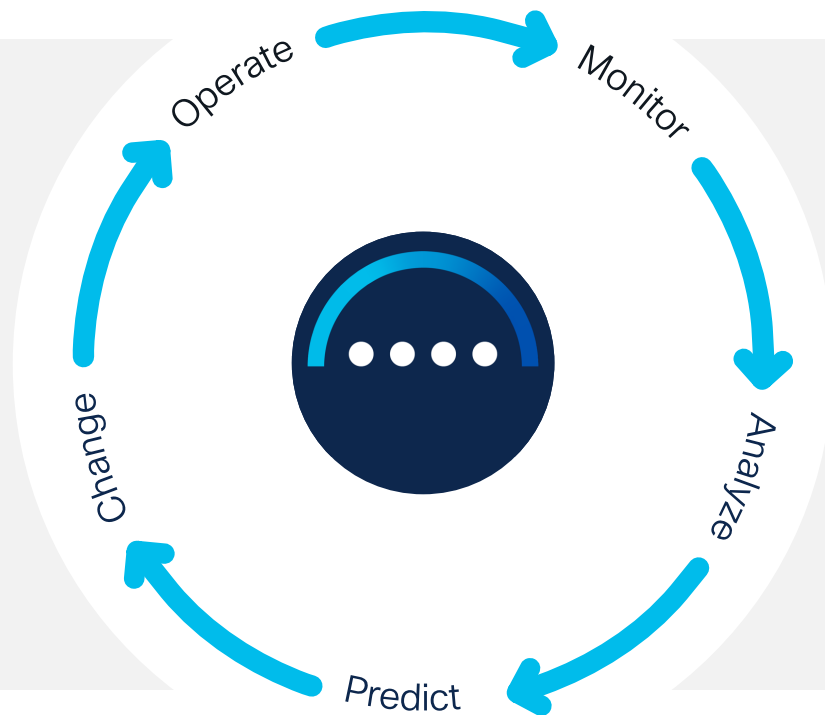
OP
S
T
A
C
K

Cisco Nexus Dashboard—a unified platform



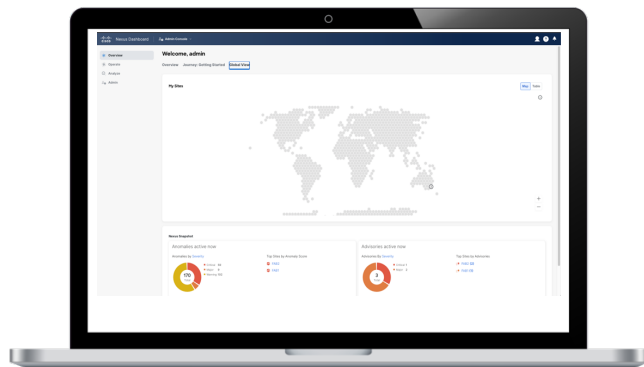
Any apps | All site types

Cisco Nexus Dashboard



Cisco Nexus Dashboard: A unified agile platform

The operator view



Consume service(s) from single place

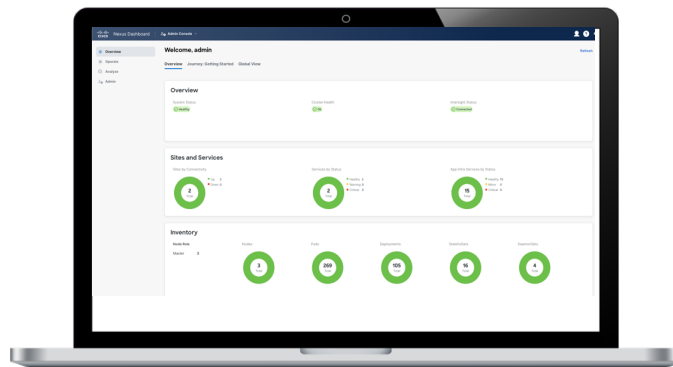


Frictionless navigation across multiple services and sites



Customize views and workflows

The admin view



Single dashboard for lifecycle management of services and ops infra

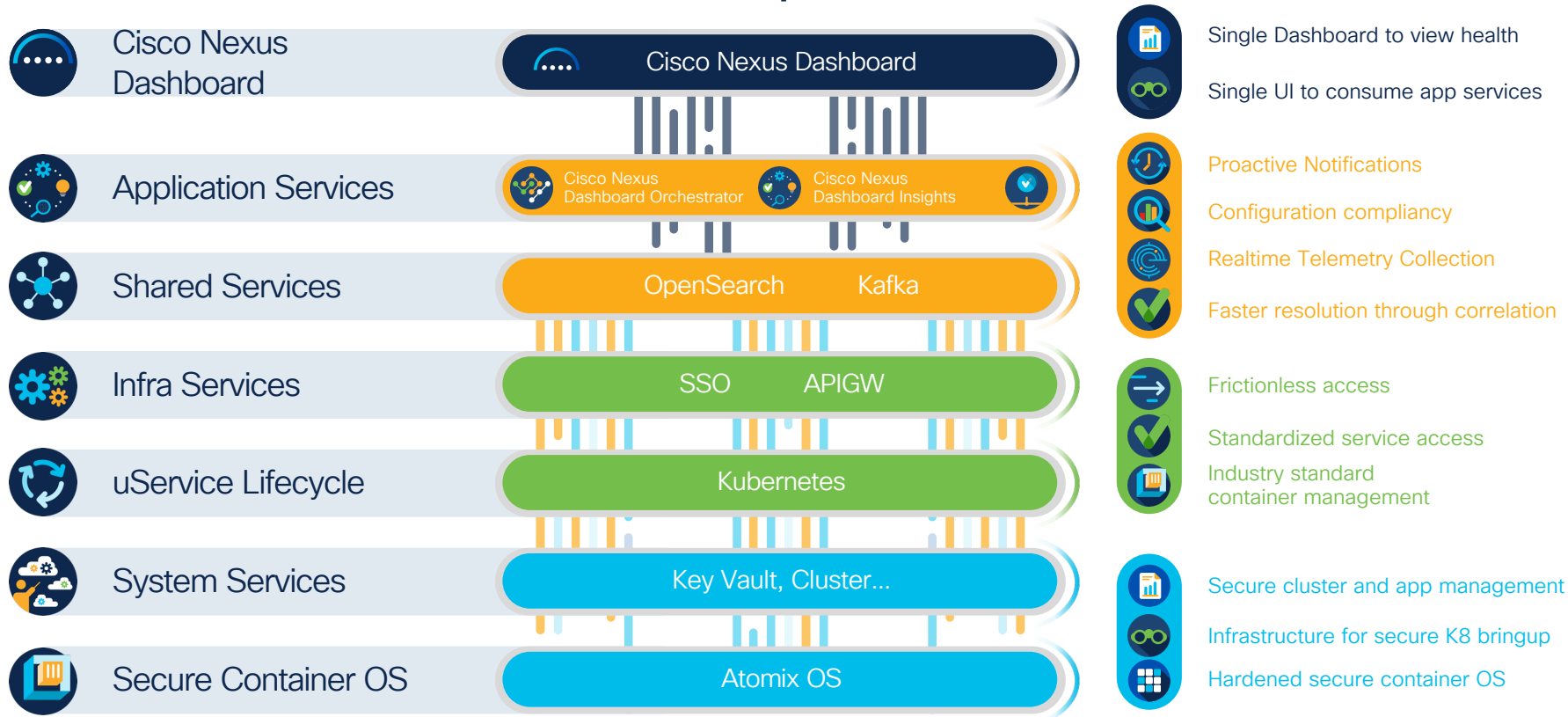


Consistent one-time onboarding of domains and services

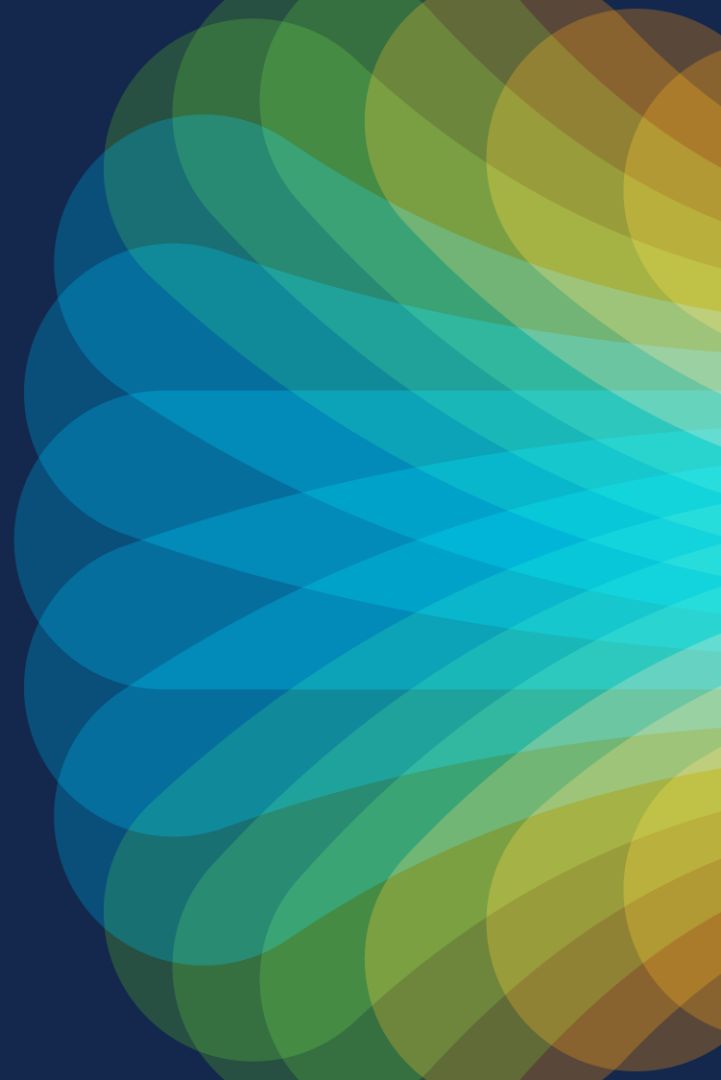


Consistent user management and access control

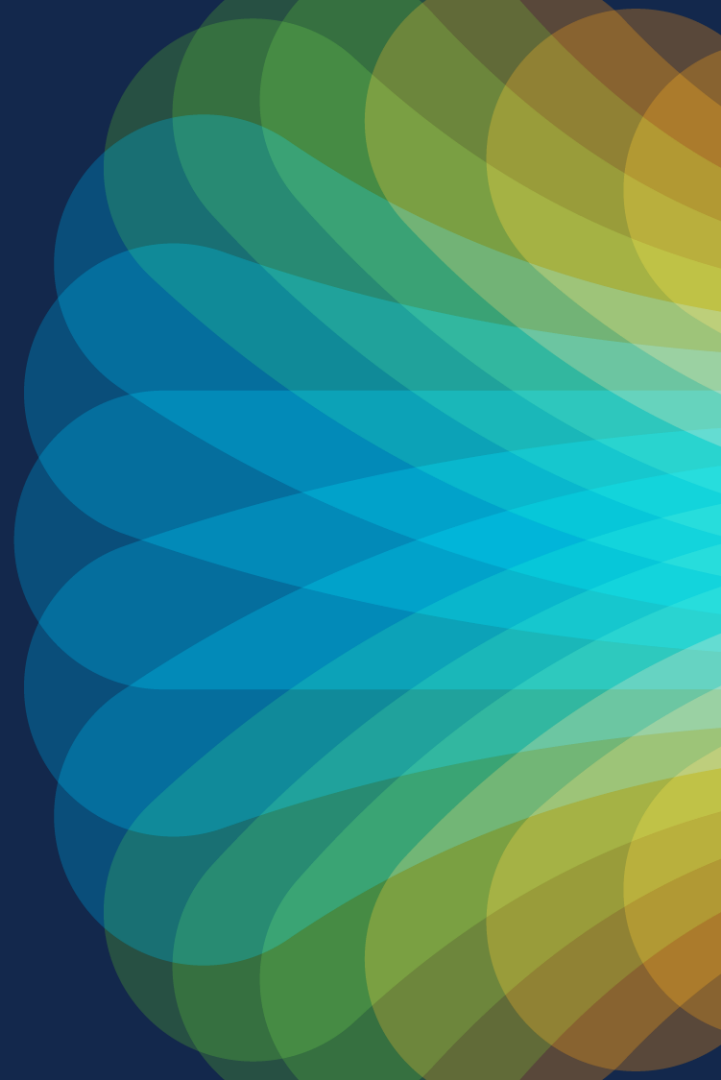
Cisco Nexus Dashboard platform—under the hood



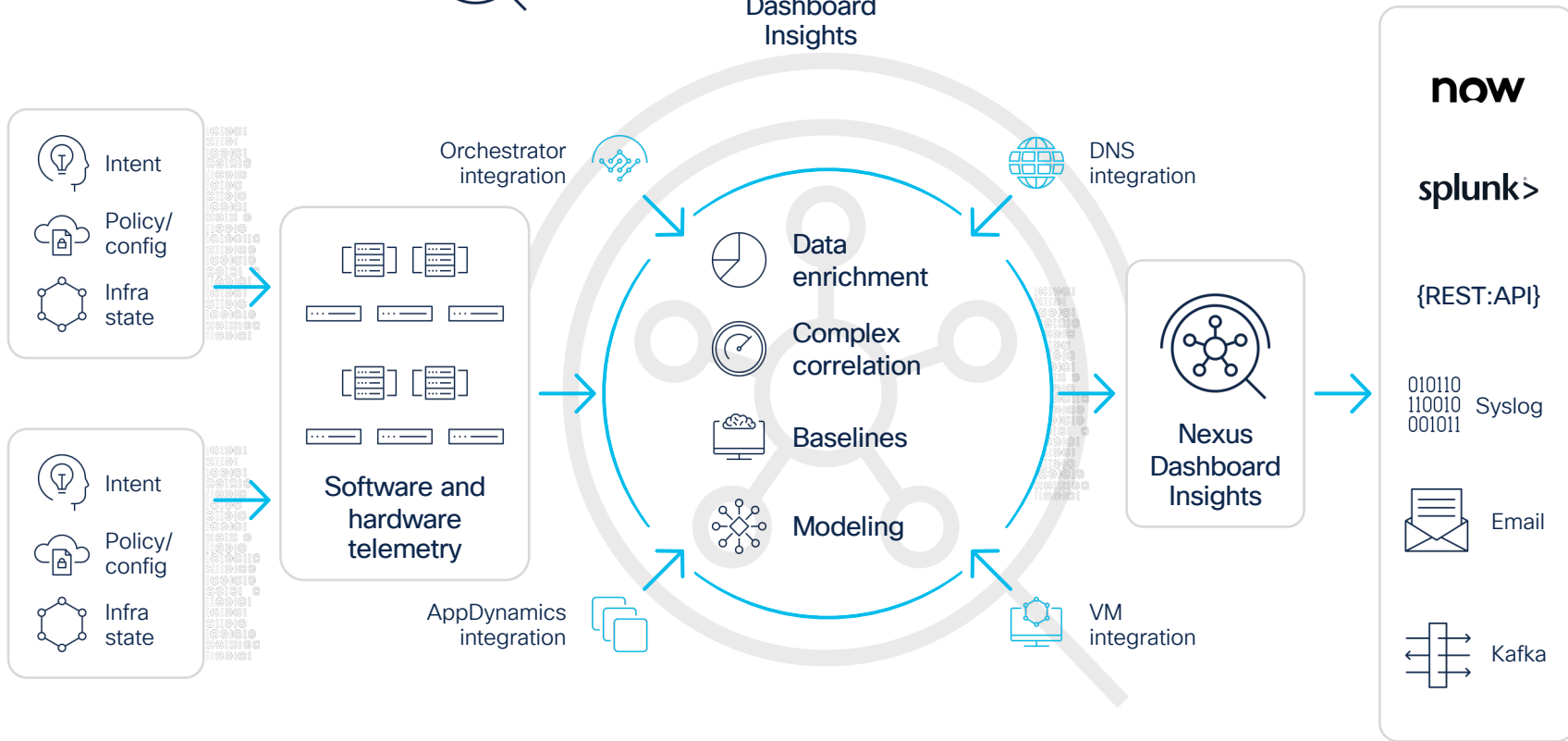
Let's build some
foundations



Nexus Dashboard Insights Overview

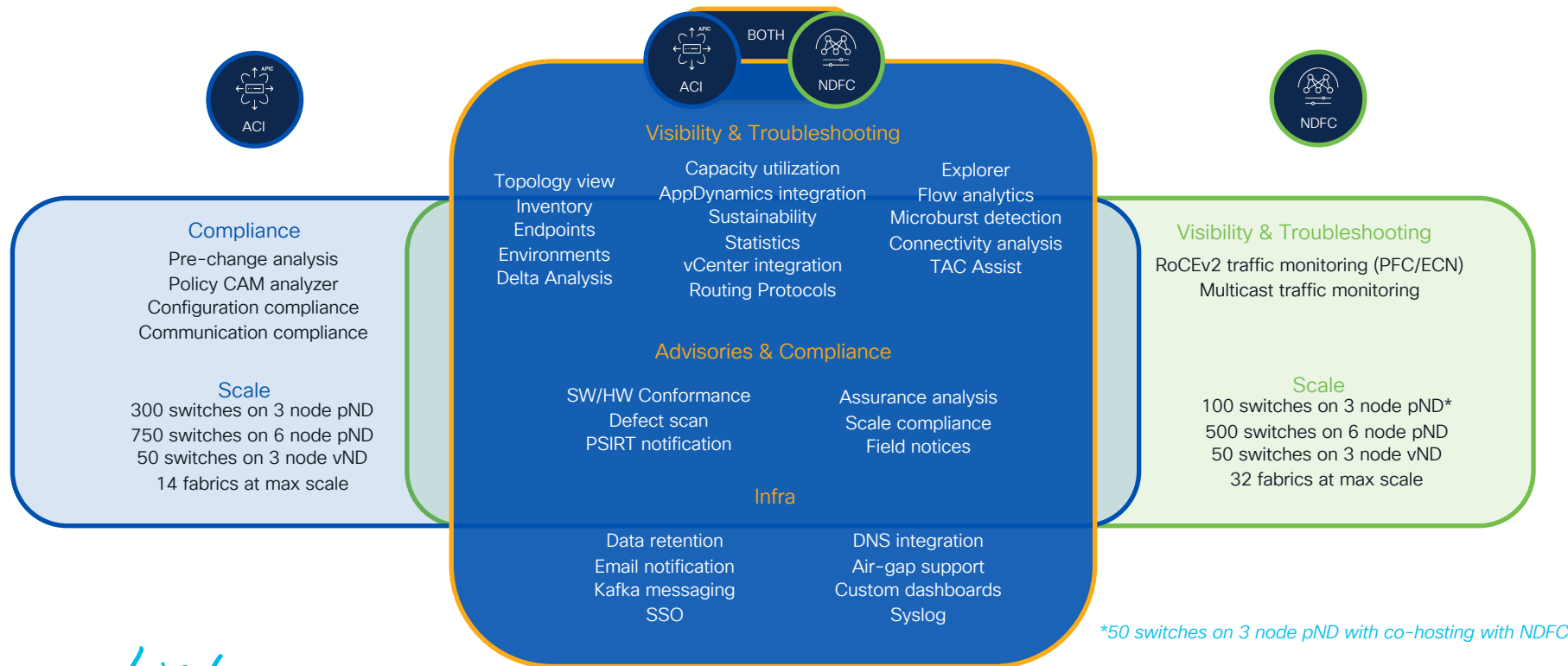


How it works

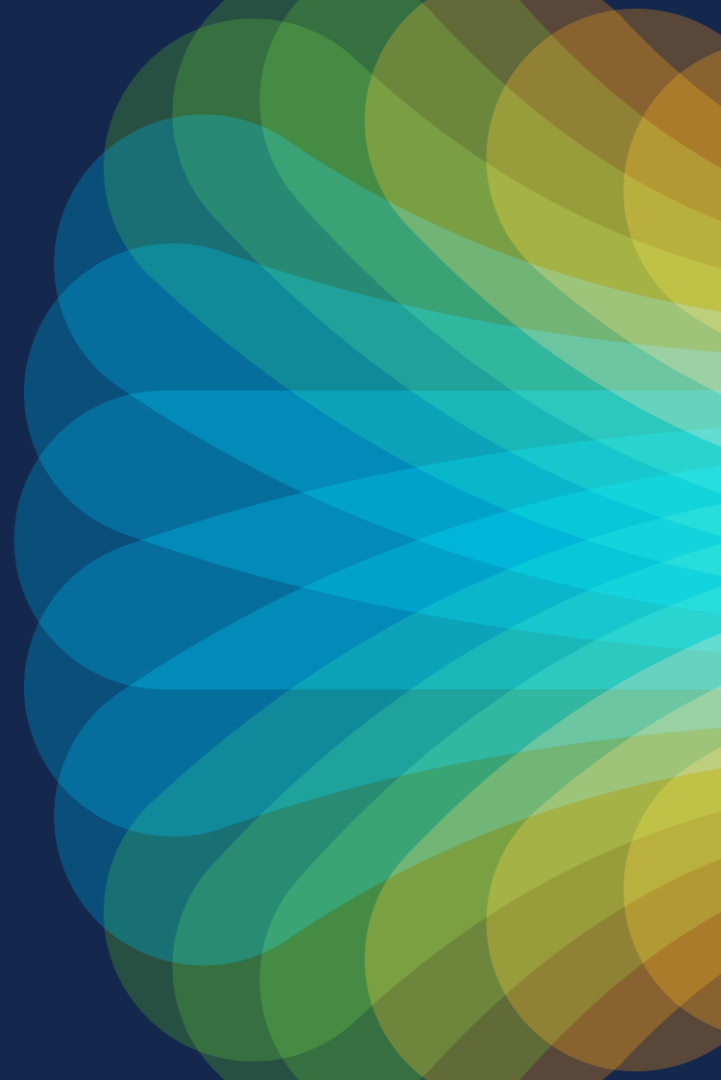


Nexus Dashboard Insights

Feature support



Features



Nexus Dashboard Insights

Standard Feature Set

Visibility and monitoring



Topology



Capacity planning



Control plane statistics



Microburst detection



Explorer queries



Interface statistics

Analytics and Correlation



Flow telemetry



Assurance



Endpoint analytics



Integrations



Delta and pre-change analysis



Anomalies

Advisories and tools



Conformance and lifecycle



PSIRT notification



TAC assist



Upgrade analysis

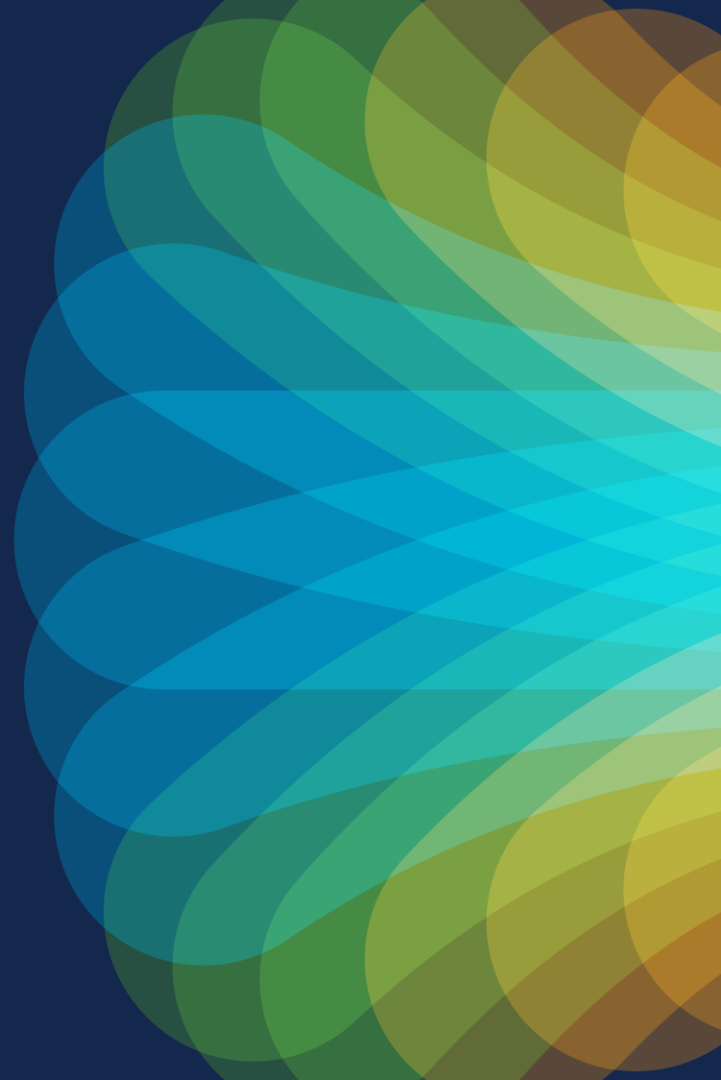


Field notices

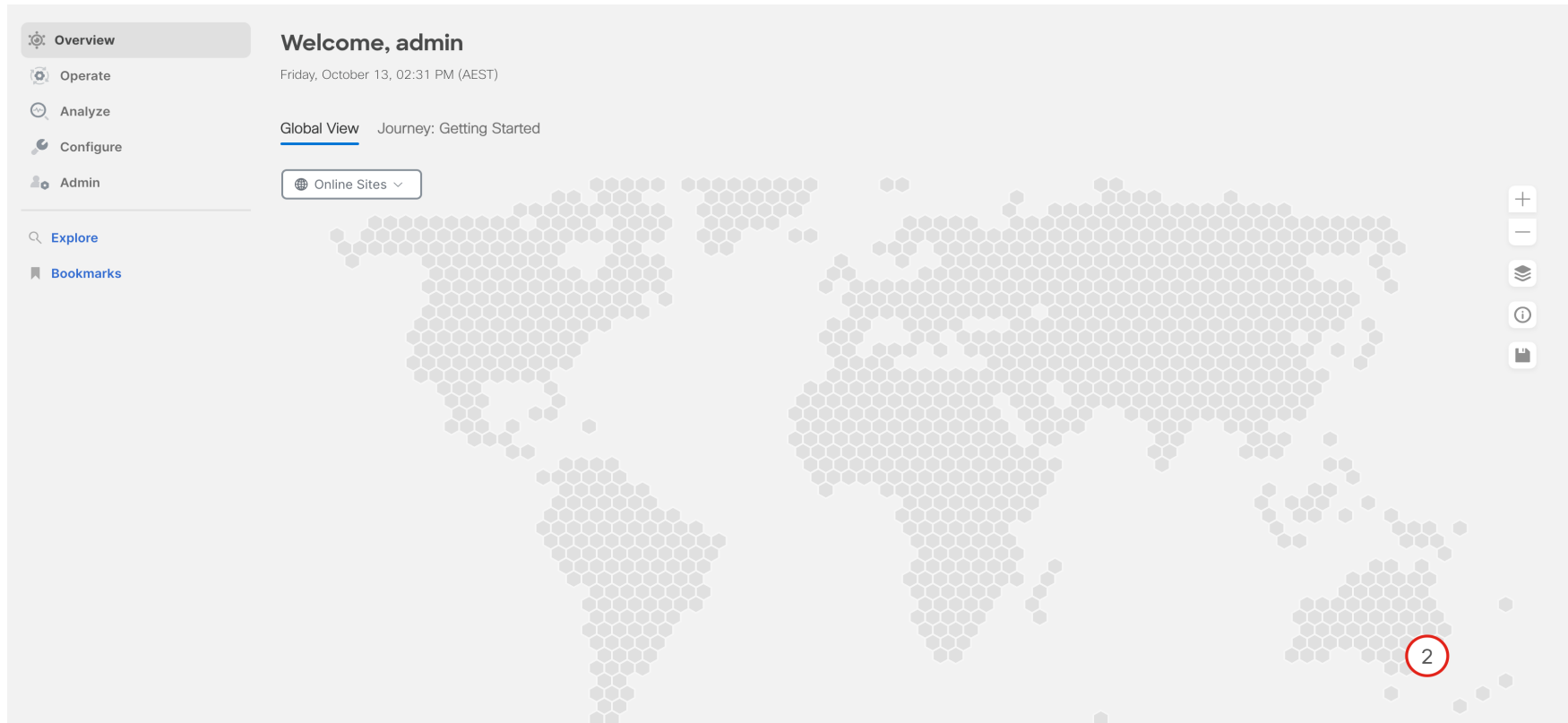


Bug scan

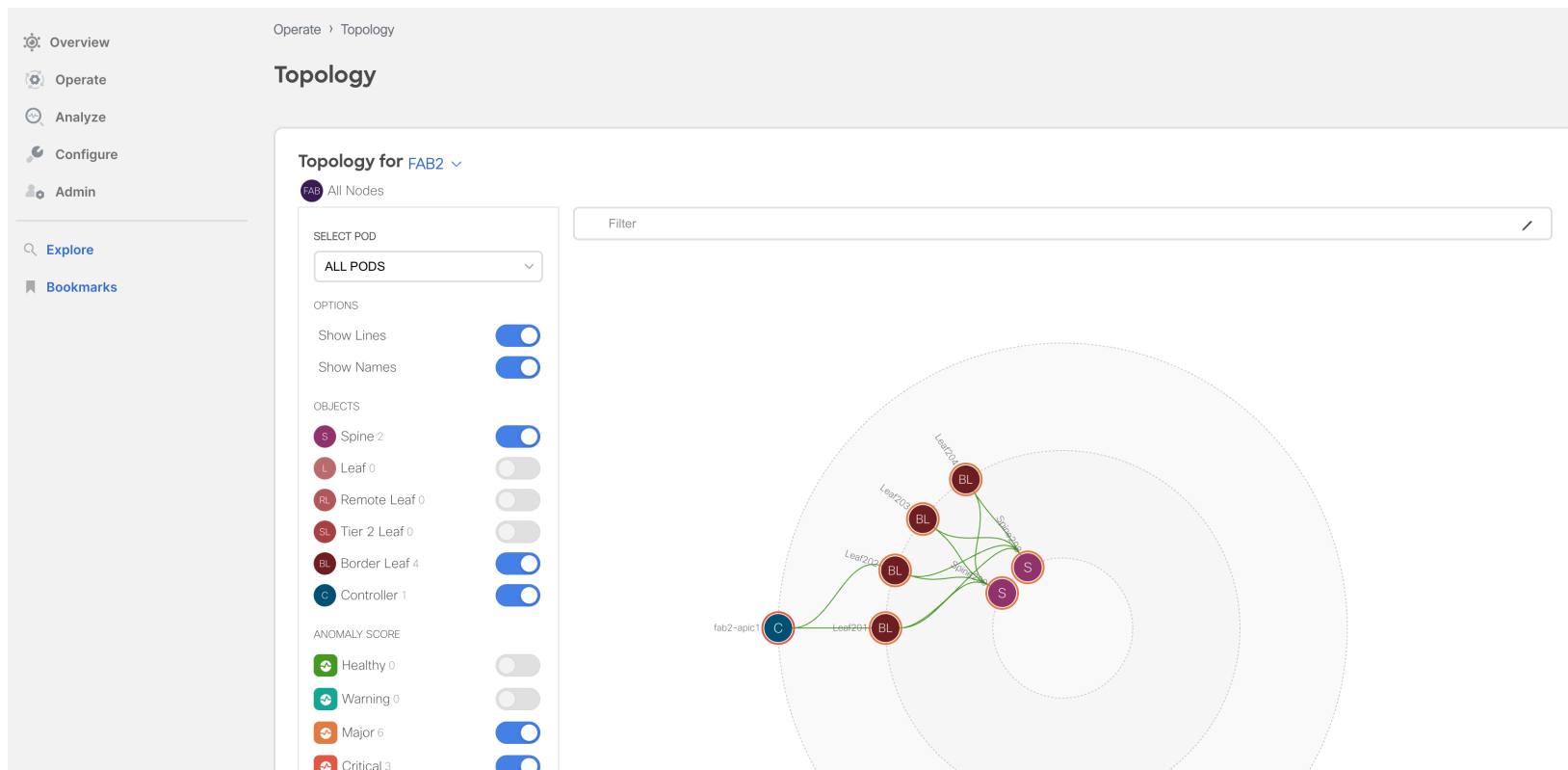
Live UI/Feature
Walkthrough – The
remaining slides in
this deck are for
your reference



Nexus Dashboard Insights – Overview



Nexus Dashboard Insights - Operate



Nexus Dashboard Insights - Analyze

Overview

Operate

Analyze

Configure

Admin

Explore

Bookmarks

Advisories

Online Sites

All Advisories Active Now

Filter

Unacknowledged

Advisory Level

Category

3

Critical 1

Major 2

Hardware EOL 3

☐ Title	Advisory Level	Category	Site	Nodes	
☐ End-of-Sale and End-of-Life Announcement for the Cisco Nexus C93180YC-FX and C93108TC-FX Fixed Switches - Cisco	Major	Hardware EOL	FAB2	Leaf204 FAB2 View all (2 total)	...
☐ End-of-Sale and End-of-Life Announcement for the Cisco Application Policy Infrastructure Controller (APIC-L2 and APIC-M2)	Critical	Hardware EOL	FAB2	fab2-apic1 FAB2	...
☐ End-of-Sale and End-of-Life Announcement for the Cisco Nexus 9332C and 9364C Fixed Spine Switches - Cisco	Major	Hardware EOL	FAB1	Spine199 FAB1	...

10

Rows

Page 1 of 1 << < 1-3 of 3 > >>

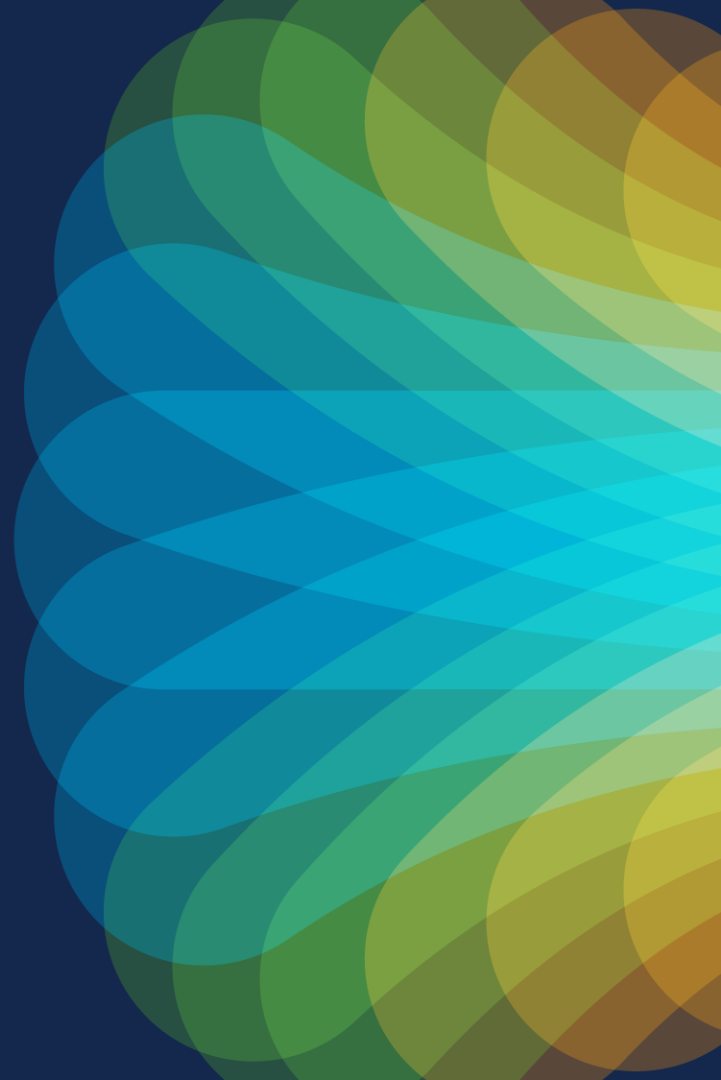
Nexus Dashboard Insights – Analysis Hub

The screenshot displays the 'Analysis Hub' section of the Nexus Dashboard Insights. On the left is a navigation sidebar with the following items: Overview, Operate, Analyze (highlighted), Configure, Admin, Explore, and Bookmarks. The main content area is titled 'Analyze > Analysis Hub' and contains a sub-header 'Analysis Hub' with a descriptive sentence: 'Analyze and troubleshoot your network with advanced analytics tools optimized for you to gain valuable insights into the performance and health of your network.' Below this, there are eight analytics tool cards arranged in a 2x4 grid:

- Compliance** (highlighted with a blue border): Monitor your fabric's compliance with custom anomaly rules. Icon: Blue list with checkmarks.
- Conformance**: Keep track of your hardware and software life cycles. Icon: Blue heart with pulse line.
- Policy CAM**: Monitor your network's policies. Icon: Blue bar chart.
- Connectivity**: Analyze flows from one endpoint to another. Icon: Blue network diagram.
- Log Collector**: Collect and analyze logs from you devices. Icon: Purple document with list.
- Sustainability**: Explore your site's energy usage, cost, and emissions. Icon: Green leaf.
- Delta Analysis**: Compare configurations and differences in your site(s) between two points in time. Icon: Purple circular arrows.
- Pre-Change**: View the potential impact of configuration changes. Icon: Purple circular arrow.

At the bottom of the main content area, the footer text reads: '© Cisco Systems, Inc. Current date and time is Friday, October 13, 03:23 PM (AEST)'.

Visibility



The diagram is a circular network graph. It features two concentric rings of nodes. The outer ring consists of 32 nodes, each labeled with a unique identifier. The inner ring consists of 32 nodes, each represented by a black dot. Lines connect nodes between the two rings. The connections are color-coded: green lines represent one type of connection, and orange lines represent another. The nodes are labeled with various identifiers, including EPG names and IP addresses.

Labels for the nodes (clockwise from top-left):

- EPG ocp_nutanix_svc_wacl_we...
- EPG aci-containers-istio
- EPG aci-containers-default
- EPG 10.112.0.24
- EPG hrms_be_epg
- EPG inb
- EPG 10.111.0.24
- EPG F2-EPG1
- EPG 10.113.0.24
- EPG hrms_fe_epg
- EPG EPG1
- EPG log_epg
- EPG F2-EPG1
- EPG default_extereg
- EPG ocp_nutanix_svc_opanshit-in...
- EPG aci-containers-nodes
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- EPG 10.110.0.24
- EPG _auth_epg
- EPG jump_host
- EPG db_cache_epg
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- EPG Web_EPG
- EPG 10.110.0.24

Reset

EPGs

Prefixes

☒ Objects ☐ Tenants ☐ VRFs

Healthy

Unhealthy

Advanced Filter

VM Topology

Virtual Machine CSR-2

Overview Anomalies Topology Trends and Statistics

OPTIONS

Show Lines ☒

Show Names ☒

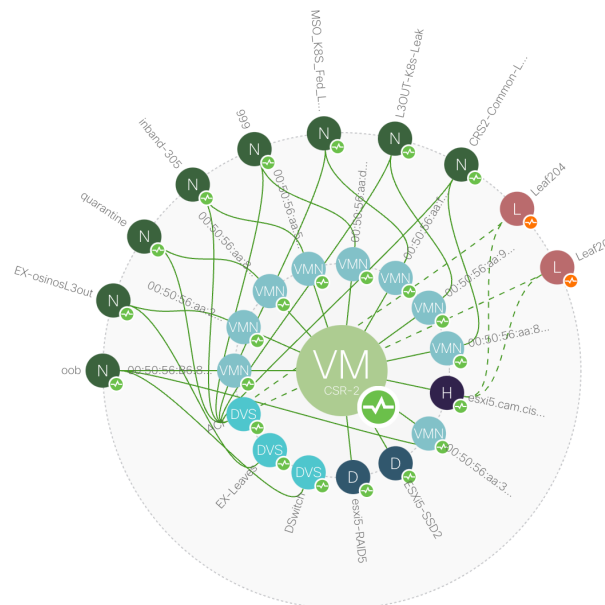
OBJECTS

- ☒ Host 1
- ☒ Datastore 2
- ☒ DVS 3
- ☒ Network 8
- ☒ VM Network 9
- ☐ VSS 0

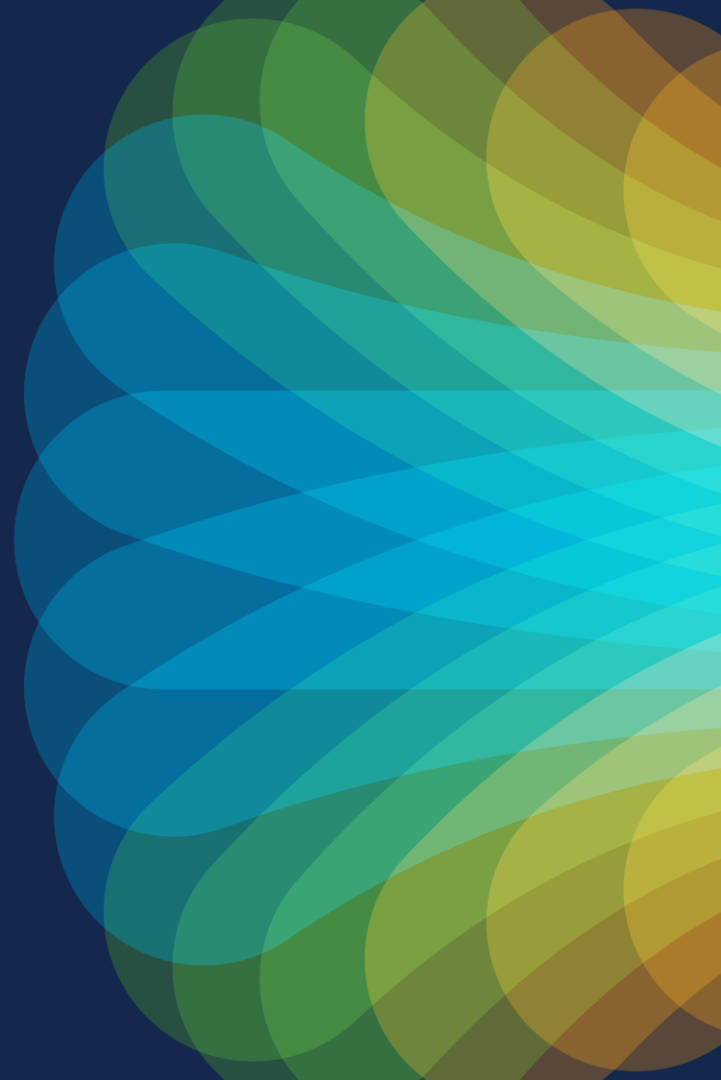
View More ▾

ANOMALY SCORE

- ☒ Healthy 24
- ☐ Warning 0
- ☒ Major 2
- ☐ Critical 0



Telemetry and Statistics



Hardware Resources

Hardware Resources for Site FAB2 🕒 Current ⌵



Switch	Anomaly Level	CPU	Memory	Temperature	Fan Utilization	Power Supply	Storage	
fab2-apic1	Warning	14%	28.57 of 62.4 GB	40 C of a max of 90 C allowed	19%	112 of 770 W	22.3 of 34.62 GB	
Spine299	Warning	8%	16.01 of 31.03 GB	30 C of a max of 80 C allowed	81%	266 of 1100 W	4.74 of 10.98 GB	
Spine298	Warning	4%	16.06 of 31.03 GB	30 C of a max of 80 C allowed	82%	272 of 1100 W	4.74 of 10.98 GB	
Leaf204	Warning	4%	18.11 of 31.03 GB	27 C of a max of 80 C allowed	47%	148 of 500 W	4.73 of 10.98 GB	
Leaf203	Warning	2%	18.27 of 31.03 GB	27 C of a max of 80 C allowed	46%	159 of 500 W	4.75 of 11.57 GB	
Leaf202	Warning	3%	17.93 of 31.03 GB	23 C of a max of 80 C allowed	102%	217 of 650 W	4.73 of 11.04 GB	
Leaf201	Warning	3%	18.21 of 31.03 GB	24 C of a max of 80 C allowed	102%	218 of 650 W	4.73 of 11.04 GB	

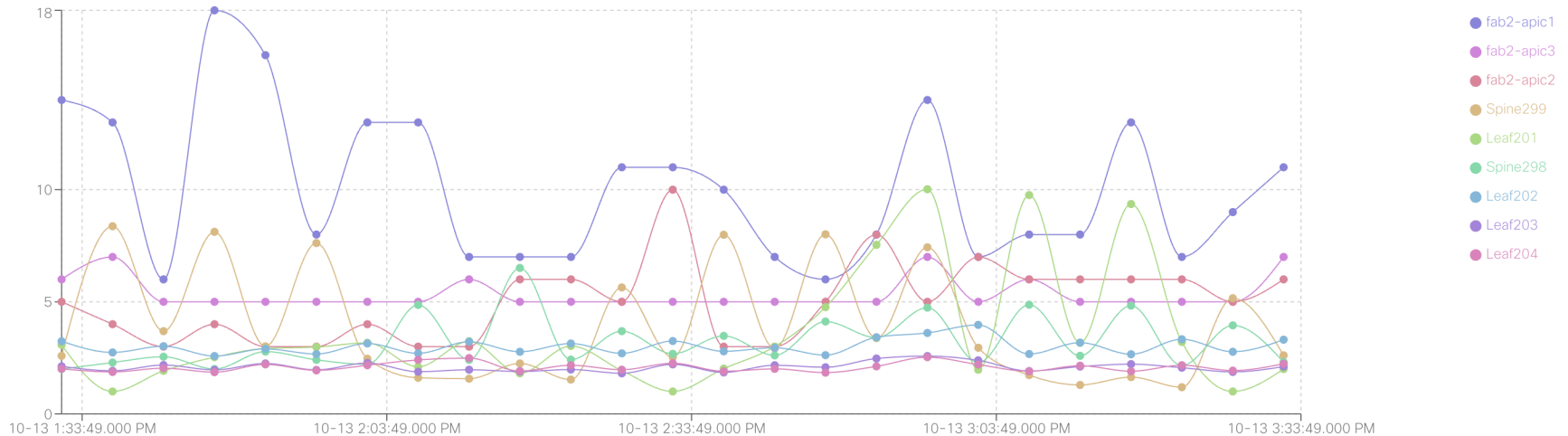
Hardware Resources – Cont.

Hardware Resources for Site FAB2 🕒 Current ▼



Filter

Top Devices By: CPU ▼



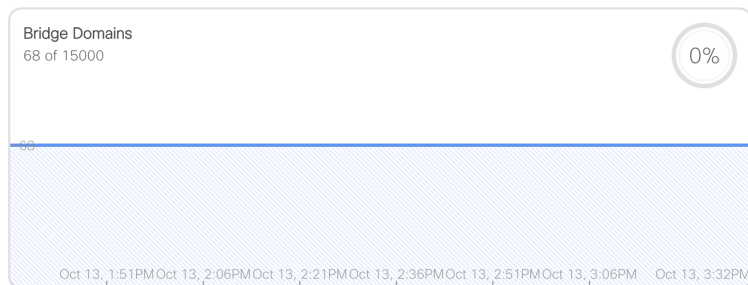
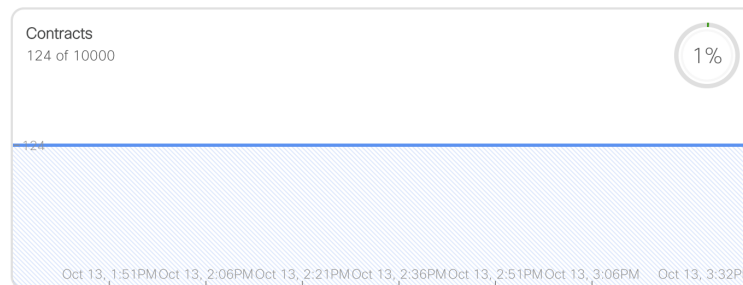
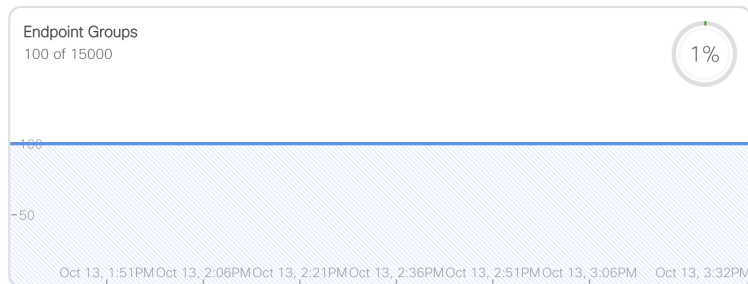
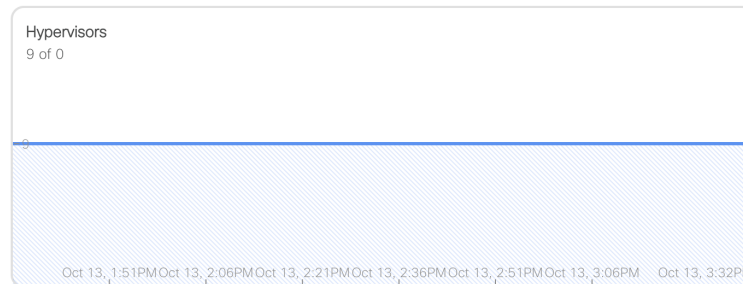
Resource Dashboard

Capacity for Site FAB2 🕒 Current ▾



Site Summary [Switch Summary](#)

Trends



Capacity Dashboard

Operational Resources Configuration Resources Interface Resources

Switch	Anomaly Score	Port Usage	Port Bandwidth	
Leaf204	 Warning	<div><div></div></div> 13 of 54 ports	Ingress: 0.02 of 1419 Gbps Egress: 0.02 of 1419 Gbps	
Leaf203	 Warning	<div><div></div></div> 13 of 54 ports	Ingress: 0.02 of 1428 Gbps Egress: 0.02 of 1428 Gbps	
Spine299	 Healthy	<div><div></div></div> 4 of 16 ports	Ingress: 0.01 of 280 Gbps Egress: 0.01 of 280 Gbps	
Spine298	 Healthy	<div><div></div></div> 5 of 16 ports	Ingress: 0.01 of 320 Gbps Egress: 0.01 of 320 Gbps	
Leaf202	 Healthy	<div><div></div></div> 17 of 54 ports	Ingress: 0.01 of 1566 Gbps Egress: 0.01 of 1566 Gbps	
Leaf201	 Healthy	<div><div></div></div> 17 of 54 ports	Ingress: 0.05 of 1566 Gbps Egress: 0.05 of 1566 Gbps	

Capacity Trend

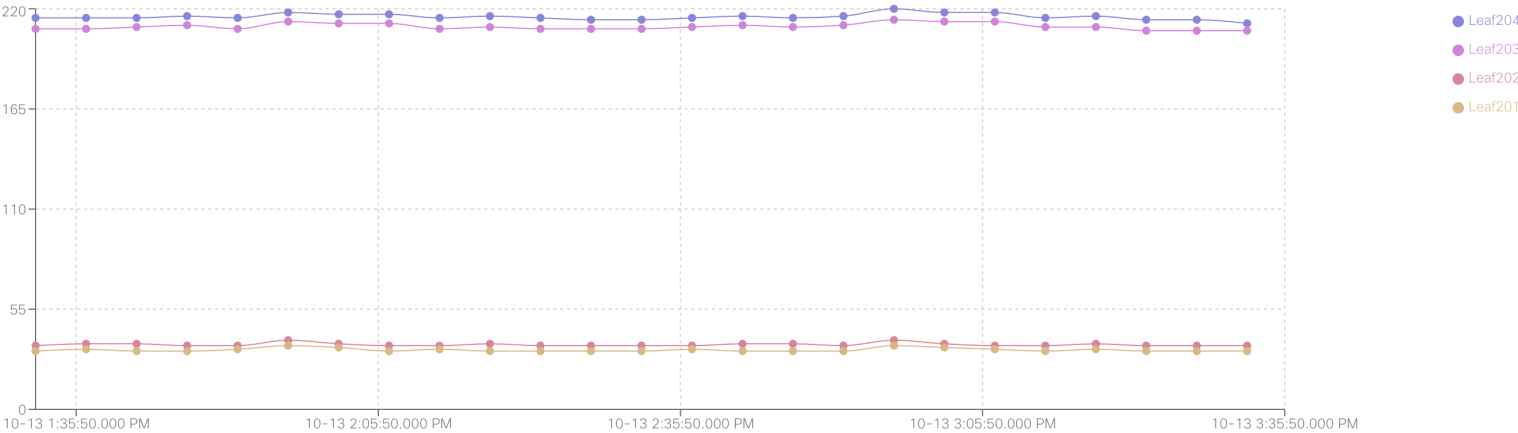
Capacity for Site FAB2 🕒 Current ▾



Site Summary Switch Summary

Filter

Top Switches By: MAC (learned) ▾



Policy Cam –FIX TCAM IMAGE BUG IN NDI

Policy CAM Statistics

All Policy CAM Rules by Hit Count by ☒ EPGs ☐ Tenants ☒ Leafs ☒ Contracts ☐ Filters

Filter by attributes

Provider EPG	Consumer EPG	Leaf	Contract	Consumer VRF	Action	1 Month	1 Week	1 Day	1 Hour	Cumulative	Policy Count	
aci-containers-default	aci-containers-nodes	Leaf203 FAB2	aci-containers-Kubernete s-health-check	k8s	Permit	65046255	44734579	6874038	0	76945132	2	
aci-containers-default	aci-containers-nodes	Leaf204 FAB2	aci-containers-Kubernete s-health-check	k8s	Permit	64396520	44483927	6213476	0	64529658	2	
aci-containers-system	aci-containers-nodes	Leaf204 FAB2	aci-containers-Kubernete s-health-check	k8s	Permit	64235410	42283236	5954019	0	64376788	2	
aci-containers-system	aci-containers-nodes	Leaf203 FAB2	aci-containers-Kubernete s-health-check	k8s	Permit	53796785	38729510	5752591	0	64506927	2	
aci-containers-nodes	aci-containers-default	Leaf203 FAB2	aci-containers-Kubernete s-api	k8s	Permit	21529976	15606191	4543054	0	27671617	6	
aci-containers-nodes	aci-containers-default	Leaf204 FAB2	aci-containers-Kubernete s-api	k8s	Permit	46315684	31383393	2497052	0	46416117	6	
aci-containers-nodes	aci-containers-system	Leaf204 FAB2	aci-containers-Kubernete s-api	k8s	Permit	30994365	21297962	2353170	0	31059990	6	
NexusDashboard	catch_all	Leaf204 FAB2	NexusDashboard	inb	Permit	19824881	14243129	1840715	0	19917909	2	
aci-containers-nodes	aci-containers-system	Leaf203 FAB2	aci-containers-Kubernete s-api	k8s	Permit	9534453	6512411	1663305	0	13186160	6	
netop-nodes	default_extepg	Leaf203 FAB2	default	k8s	Permit	25494629	10430660	1309084	0	27996681	4	

Endpoint Analytics

Interfaces L3 Neighbors Endpoints vPC Domains Flows

Filter

Anomaly Level



MAC	IP Addresses	Hostnames	Anomaly Level	Connected To	Interface	Status	Tenant	VRF	
68:E5:9E:42:B3:EE	192.168.15.42	ocp-sr-iov-bm03.ocp-sr-iov.cam.ciscolabs.com	Healthy	Leaf201 Leaf202	ocpbm-bm-03-eno7-eno8_bond0	Active	ocp_sr-iov	k8s	
B8:A3:77:09:3C:9B	192.168.15.35 + 1 More	ocp-sr-iov-bm02.ocp-sr-iov.cam.ciscolabs.com	Healthy	Leaf203 Leaf204	ocpbm-bm-02-eno7-eno12_PolGrp	Active	ocp_sr-iov	k8s	
00:50:56:AA:07:A7	192.168.2.200	-	Healthy	Leaf203 Leaf204	esxi5_vpc_vmn-ic2-3_PolGrp_PolGrp	Active	ndo-t1	ndo-t1-vrf1	
00:50:56:64:22:8E	192.168.199.5	-	Healthy	Leaf203 Leaf204	esxi5_vpc_vmn-ic2-3_PolGrp_PolGrp	Active	common	k8s	
00:50:56:67:00:99	192.168.199.4	-	Healthy	Leaf203 Leaf204	esxi4_vpc_vmn-ic2-3_PolGrp	Active	common	k8s	
BA:1B:CB:E0:2E:DE	192.168.199.199	-	Healthy	Leaf203 Leaf204	bm-01-40G_PolGrp	Active	common	k8s	

Endpoint Details and History

IP Details for IP 192.168.15.42



Overview IP History Anomalies

IP History for [Last month](#) ▾

10/07/2023 1:08:31 PM

●

Hostname(s) for 192.168.15.42 changed to 192.168.15.42 - ocp-sr-iov-bm03.ocp-sr-iov.cam.ciscolabs.com

▼

10/07/2023 1:02:28 PM

●

Hostname(s) for 192.168.15.42 - ocp-sr-iov-bm03.ocp-sr-iov.cam.ciscolabs.com changed to 192.168.15.42

▼

10/06/2023 3:21:10 P...

●

Status changed from Aged out to Active

VM Name	Hypervisor	MAC Address	IP Addresses	Status	VRF	BD	Encap	Nodes
-	-	68:E5:9E:42:B3:EE	192.168.15.42	Active	k8s	netop-ocp_sr-iov-node-bd	vlan-308	Leaf201 Leaf202

Interface

ocpbm-bm-03-eno7_eno8_bond0

10/06/2023 3:17:55 PM

●

Status changed from Active to Aged out

▼

10/06/2023 3:16:35 PM

●

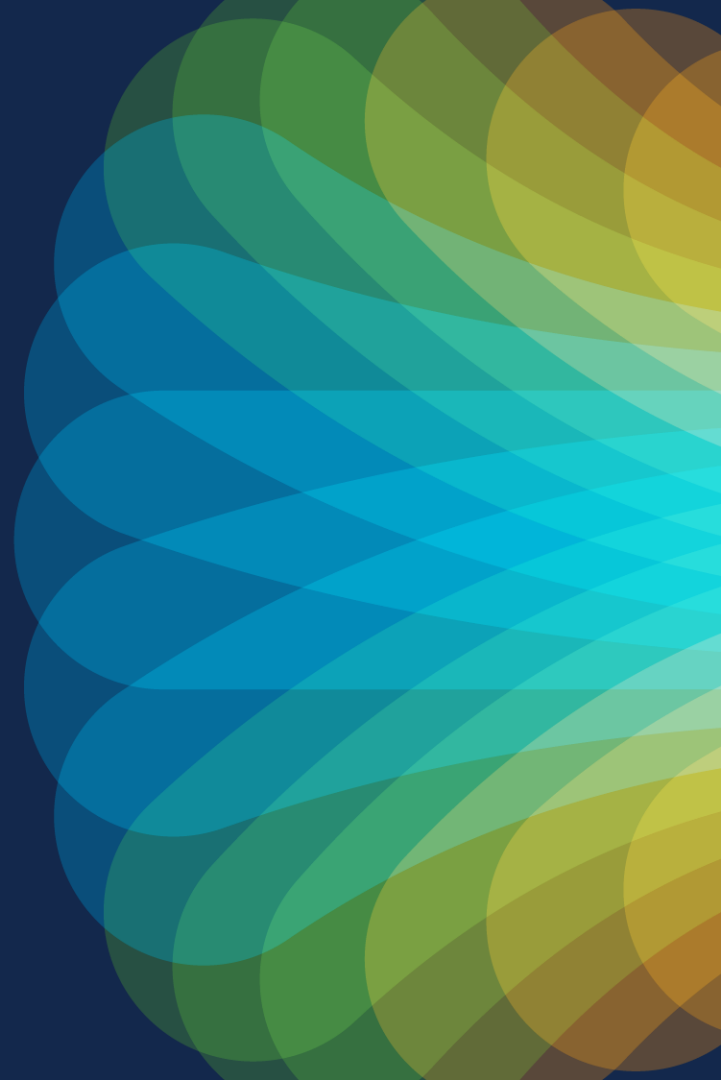
Status changed from Aged out to Active

▼

RoCEv2 Monitoring and Multicast state monitoring and group info

- Insights of the ECN and PFC counters per interface and queues on that interface
- the following MROUTE information are displayed at site level:
 - Multicast groups
 - Sources per group
 - Sending rate per source
 - Receivers per group
- At multicast group level, the following information are displayed
 - Source: source IP address, switch name, interface
 - Receiver: receiver count, uptime, L3 interface, switch name (where receivers are connected)

Anomalies



Anatomy of an Anomaly

[← Anomalies](#)

Contract Has Invalid Filters

Refresh

Actions

★

🔖

What's the impact?

The Contract will only enforce the valid filters.

Contract has invalid Filters:

Tenant	Contract
common*	OCP_Cluster1_svc_default_router*

How do I fix it?

Recommended Solution

Failing Condition (1/1)

- Determine if the subjects/filters identified are required.
 - If the subjects are required, then assign existing filters, or recreate any filters that were accidentally deleted, that meet your requirements.
 - Delete the subjects that are no longer required.
- If this contract is no longer required, determine if the contract can be deleted.

Search Bar updates

- Works when looking up anomalies in both individual and

Overview

Operate

Analyze

Configure

Admin

Explore

Nexus Dashboard

Insights

Anomalies

Online Sites

All Anomalies

Ungrouped

Active Now

Filter

EPG

IP Address

Interface

Last Seen Time

MAC Address

Site

What's Wrong?

Category

Connectivity 2002

Integrations 1

Configuration 1

Endpoint 0011.0105.0083 learning information is not consistent across the fabric leafs and spines.

Critical

Connectivity

SJ-DC1

Aug 17 2023 11:07:33.000 AM

Recent

Endpoint 0011.0104.0028 learning information is not consistent across the fabric leafs and spines.

Critical

Connectivity

SJ-DC1

Aug 17 2023 11:07:33.000 AM

Recent

Endpoint 0011.0105.006b learning information is not consistent across the fabric leafs and spines.

Critical

Connectivity

SJ-DC1

Aug 17 2023 11:07:33.000 AM

Recent

Endpoint 0011.0101.0097 learning information is not consistent across the fabric leafs and spines.

Critical

Connectivity

SJ-DC1

Aug 17 2023 11:07:33.000 AM

Recent

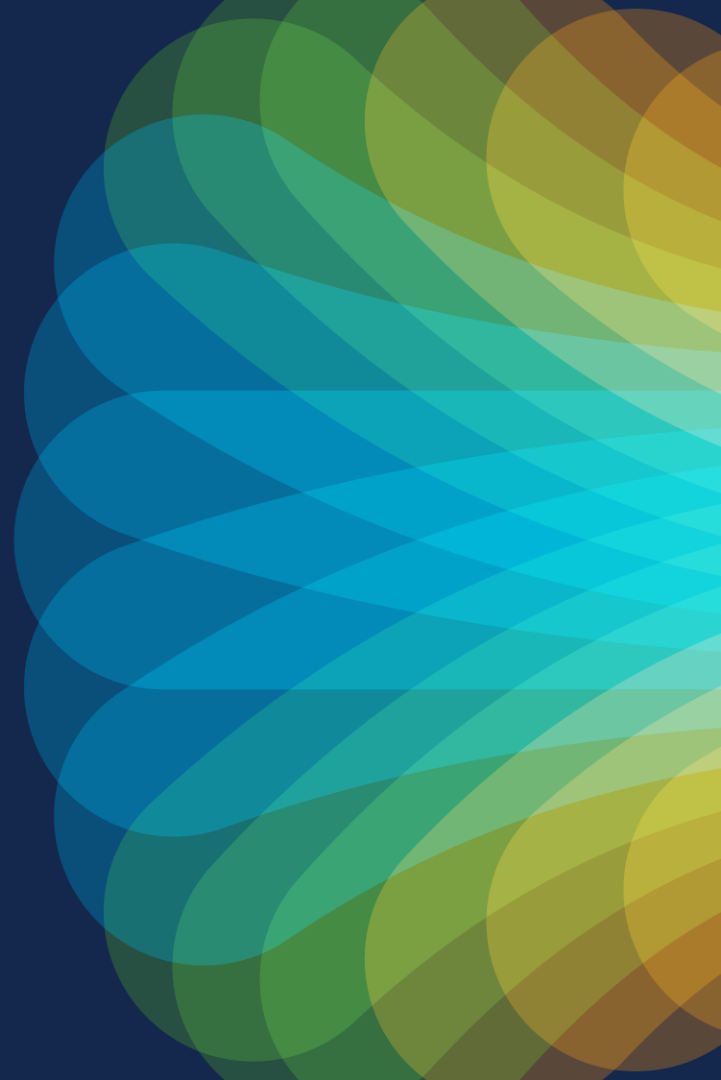
CISCO *Live!*

#CiscoLiveAPJC BRKDCN-3924

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Delta Analysis and Pre-Change Analysis



Delta Analysis

General



Delta Analysis Completed

Submitted on October 13, 2023, 03:53:41 PM

Site
FAB2

Submitter ID
INSTANT

Earlier Snapshot
October 06, 2023, 04:45:51 PM

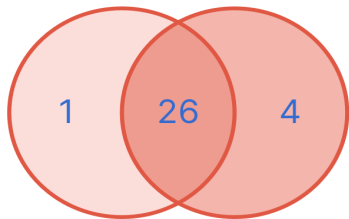
Later Snapshot
October 13, 2023, 02:46:30 PM

Time Range
6d 22hr 0m 39s

Health Delta Policy Delta

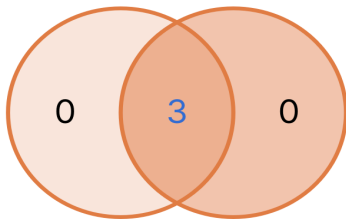
Anomaly Count

Critical



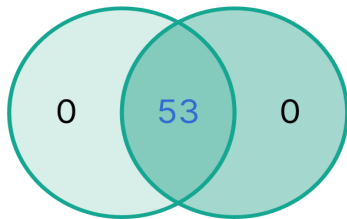
Earlier | Later
27 | 30

Major



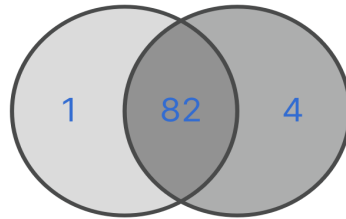
Earlier | Later
3 | 3

Warning



Earlier | Later
53 | 53

Total



Earlier | Later
83 | 86

Delta Analysis

Health Delta by Resources

☐ View Changed

Resources	Total Earlier	Total Later	Unhealthy Earlier	Unhealthy Later	Cleared	Unchanged	New	
App Profiles	39	39	8	8	0	8	0	
BDs	74	77	10	10	0	10	0	
Contracts	133	133	47	47	0	47	0	
Endpoints	245	250	0	0	0	0	0	
EPGs	149	152	10	10	0	10	0	
External Routes	90	93	0	0	0	0	0	
Interfaces	378	378	0	0	0	0	0	
Internal Subnets	175	175	2	2	0	2	0	
L3Outs	11	11	1	1	0	1	0	
Leafs	4	4	2	2	0	2	0	
Tenants	26	26	8	8	0	8	0	
VRFs	30	30	2	2	0	2	0	

Delta Analysis

All Anomalies **Grouped**  ← Later Snapshot Only

Filter

Title	Anomaly Level	Category	Count	
Configuration Compliance Violated	 Critical	Compliance	4	

25  Rows

Page 1 of 1 << 1-1 of 1 >>

Delta Analysis

Health Delta Policy Delta

Changed Policy Objects

Tenants (55)

ocp_sr_lov (46) ▾

common (9) ▾

Tenant uni/tn-common

🔌 0 🔄 0 🟡 0

🔌 0 🔄 0 🟡 0

🔌 14 🔄 3 🟡 0

Fabric

L4 - L7 Services

VM Networking

Other (14)

Policy Viewer

☒ View Changed

Earlier	Later
1	1
2	2
3	3
4	4

⬆ Show more code above

⬇ Show more code below

```

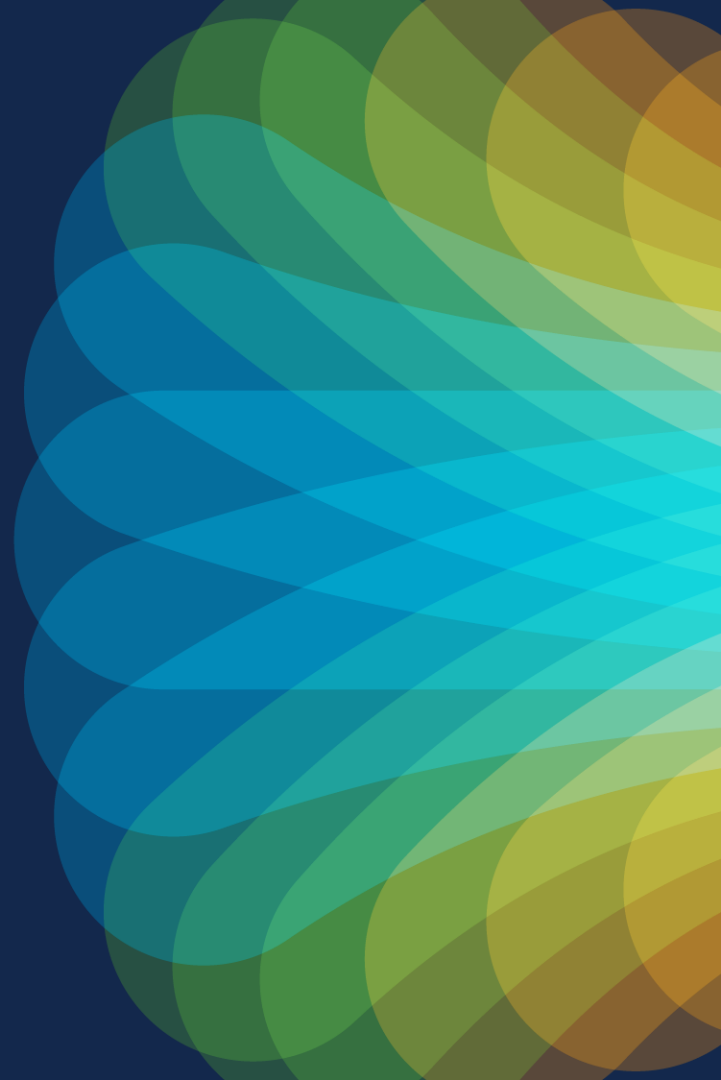
4532 4532 </infraPortDirecPol>
4533 4533 <cdpIfPol annotation="" descr="" adminSt="enabled" nameAlias="" ownerTag="" name="system-cdp-
4534 4534 </cdpIfPol>
4535 4535 <fvnsVlanInstP annotation="orchestrator:aci-containers-controller" descr="" nameAlias="" ownerTag="
4536 4535 <fvnsEncapBlk annotation="orchestrator:aci-containers-controller" descr="" role="external" nameAlias
4537 4535 </fvnsEncapBlk>
4538 4535 <fvnsEncapBlk annotation="orchestrator:aci-containers-controller" descr="" role="external" nameAlias
4539 4535 </fvnsEncapBlk>
4540 4535 <fvnsEncapBlk annotation="orchestrator:aci-containers-controller" descr="" role="external" nameAlias
4541 4535 </fvnsEncapBlk>
4542 4535 <fvnsEncapBlk annotation="orchestrator:aci-containers-controller" descr="" role="external" nameAlias
4543 4535 </fvnsEncapBlk>
4543 4536 <fvnsEncapBlk annotation="orchestrator:aci-containers-controller" descr="" role="external" nameAlias
4543 4537 </fvnsEncapBlk>
4544 4537 <fvnsEncapBlk annotation="orchestrator:aci-containers-controller" descr="" role="external" nameAlias
4545 4537 </fvnsEncapBlk>

```

Audit Log

- Modified by intersight_dc**
 2:43:56 PM AEST
 Message configuration modified
[View More >](#)
- Modified by intersight_dc**
 2:43:26 PM AEST
 Message configuration modified
[View More >](#)
- Modified by intersight_dc**
 2:42:55 PM AEST
 Message configuration modified
[View More >](#)
- Modified by intersight_dc**
 2:42:25 PM AEST
 Message configuration modified
[View More >](#)
- Modified by intersight_dc**
 2:41:55 PM AEST
 Message configuration modified
[View More >](#)
- Modified by intersight_dc**

Connectivity Analysis (CA)



Connectivity Analysis Introduction

- User can look for Layer-2 or Layer-3 2 to 5 tuple flows, trace and debug the flows without requiring the enablement of Flow Telemetry
- CA includes:
 - ECMP Graph map showing all possible paths a flow could take
 - Path validation including control plane checks for all switches for the path of the flow
 - Optional Active path verification including ELAM on all switches for long-lived flows
- Note: In ACI it requires strictly version 6.0.2 or above as it depends on FSV agent which is embedded in the latest Nexus Insights Cloud Connector (NICC) APIC app. The app is available on dcappcenter.cisco.com and can be upgraded if needed.

Connectivity Analysis Example

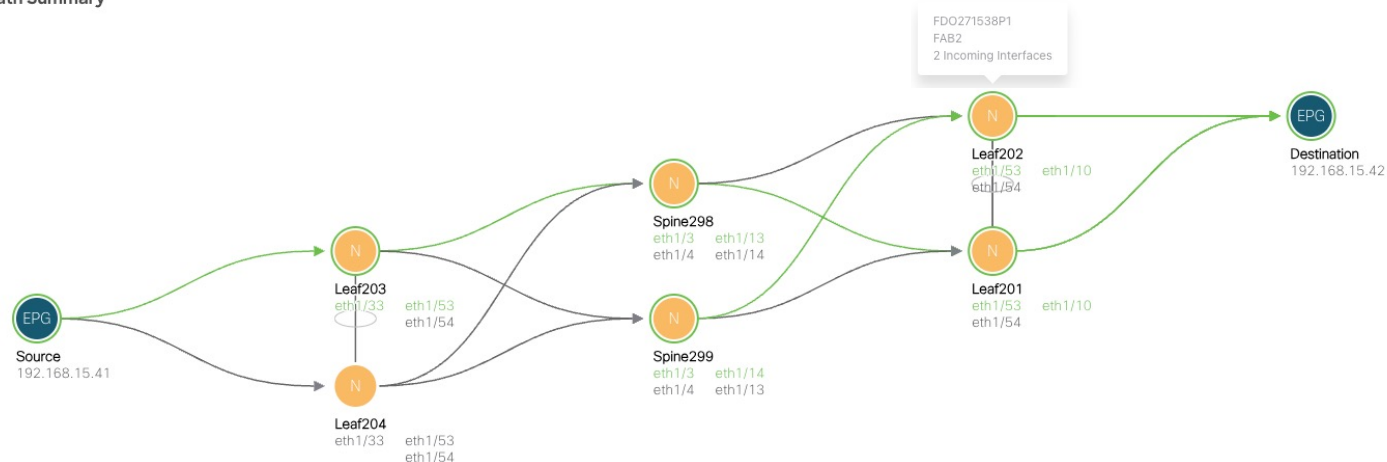
Analysis Results

✓ Job Status Completed

✓ Path Status Success

Details						
Creation Time	End Time	Run Time	Tenant Name	VRF Name	Destination Tenant Name	Destination VRF Name
Oct 18 2023, 12:05:32.000 PM	Oct 18 2023, 12:07:35.000 PM	1 Minute 58 Seconds	common	k8s	common	k8s
Source IP	Destination IP	Source Port	Destination Port	Protocol	Analyze Active Path	
192.168.15.41	192.168.15.42	-	22	-	Enabled	

Path Summary



Connectivity Analysis Example

Details

Inner L3 Header

L3 Type	IPv4
DSCP	48
Don't Fragment Bit	0x0
TTL	255
IP Protocol Number	undefined
Destination IP	192.168.15.42
Source IP	192.168.15.41

Outer L3 Header

L3 Type	IPv4
DSCP	3
Don't Fragment Bit	0x0
TTL	31
IP Protocol Number	UDP
Destination IP	10.1.48.64
Source IP	10.1.120.67

Outer L4 Header

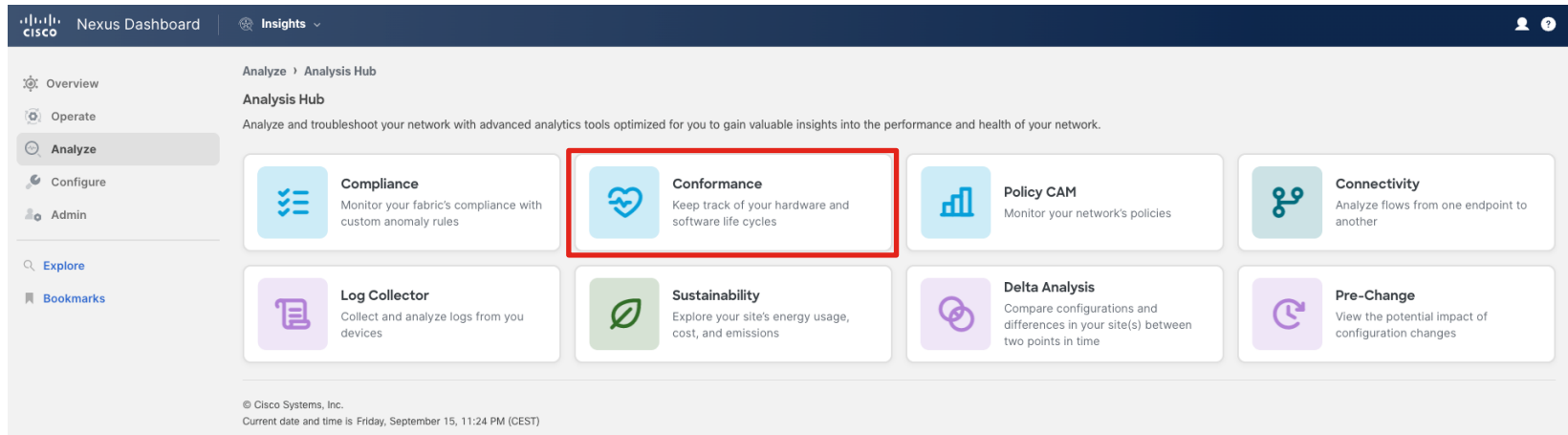
L4 Type	IPvLAN
Don't Learn Bit	0
Src Policy Applied Bit	1
Dst Policy Applied Bit	1
sclass(src pcTag)	0x2b01
VRF or BD VNID	15728633(0xEFFFF9)

Scale Conformance

- This feature generates scale conformance report to track resource usage on sites against published Verified Scalability Guidelines (VSGs)
- Each resource is categorized as
 - Violation: beyond 100%
 - Approaching Limits: 90-100% usage
 - Conformant: below 90% usage
- Reports are generated per site every week, plus first and last day of month
- On-demand report update (one per day) is possible
- Multi-dimensional limits are not supported (roadmap)

UX Flow

- Analyze -> Analysis Hub -> Conformance



UX All Sites Conformance

- Overview of all sites scale conformance

All Sites Summary

[View Conformance Criteria](#)

Overall Scale Conformance Level



0 sites have metrics violated limits and 0 sites have metrics approaching limits

Top 5 Switches by Scalability Metric Violations



No Switches with Scalability Metric Violations

Scalability Metrics

Controller Level



Violated Limits 0
Approaching Limits 0
Conformant 28

Switch Level



Violated Limits 0
Approaching Limits 0
Conformant 126

Total Scalability Metrics Violations

0 Violated Limits

0 new violated limits

The number of metrics violating the supported limits remained the same since last month

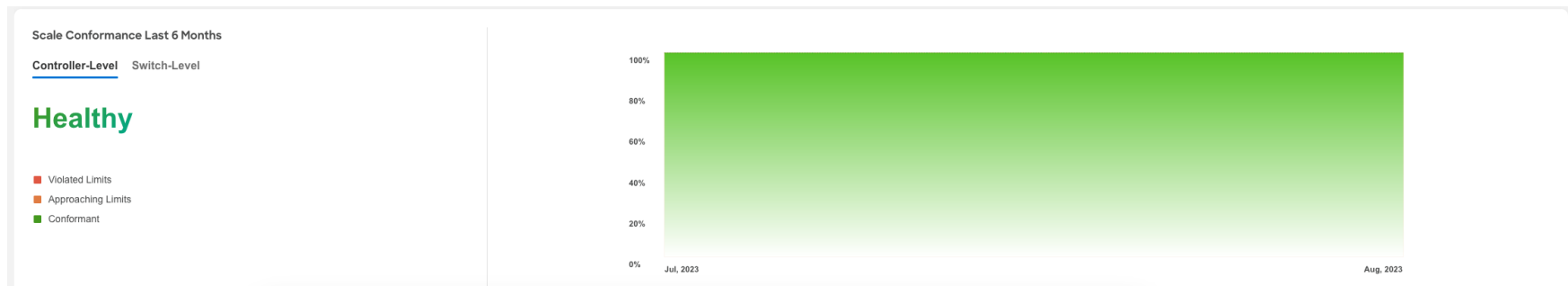
0 Approaching Limits

0 new approaching limits

The number of metrics approaching the supported limits remained the same since last month

UX All Sites Conformance

- History of all sites conformance



UX All Sites Conformance

- All controllers and switches conformance

Clicking on any of the Metric Bubbles will expand to show all metrics via a side drawer

All Scale Metrics

Sites Switches

Filter by attributes

Site	Type	Software Version	Controller Metrics Conformance	Switch Metrics Conformance	
qa-fabric	ACI	5.2(8d)	14	44	
prod-fabric	ACI	6.0(2h)	14	88	

All Scale Metrics

Sites Switches

Filter by attributes

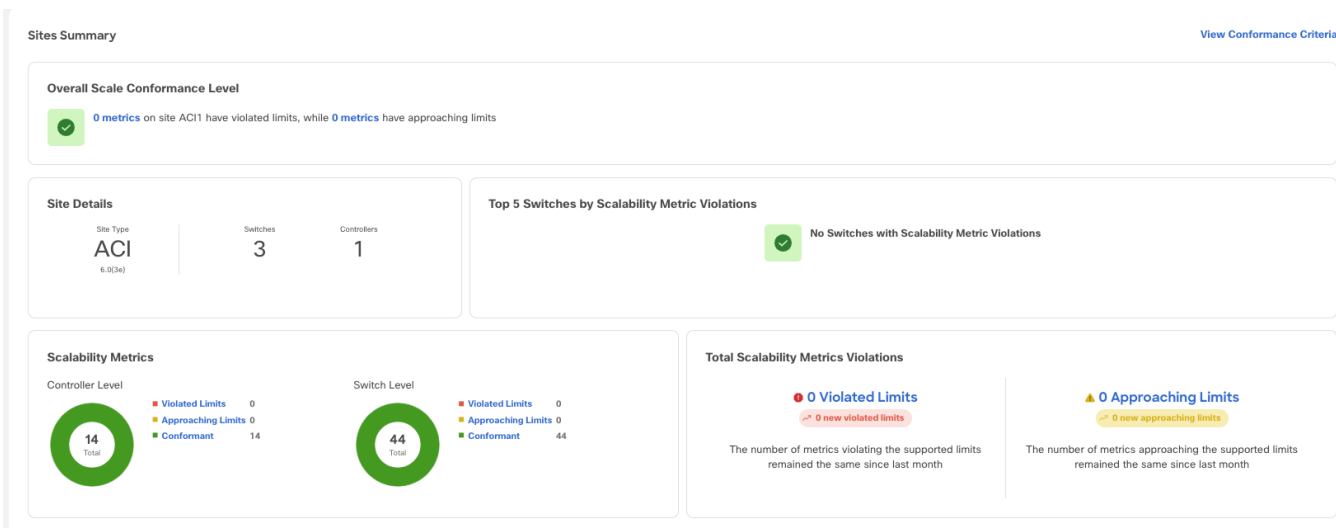
Switch	Site Name	Software Version	Model	Forwarding Scale Profile	Metrics Conformance	
leaf1	prod-fabric	16.0(2h)	N9K-C93180YC-FX	dual-stack	22	
leaf2	prod-fabric	16.0(2h)	N9K-C93180YC-FX	dual-stack	22	
leaf3	prod-fabric	16.0(2h)	N9K-C93180YC-FX	dual-stack	14	
leaf4	prod-fabric	16.0(2h)	N9K-C93180YC-FX	dual-stack	14	
sub-leaf1	prod-fabric	16.0(2h)	N9K-C9358GY-FXP	dual-stack	14	
qa-leaf1	qa-fabric	15.2(8d)	N9K-C93180YC-FX	dual-stack	22	
qa-leaf2	qa-fabric	15.2(8d)	N9K-C93180YC-FX	dual-stack	22	

10 Rows

Page 1 of 1 << < 1-7 of 7 > >>

UX Single Site Conformance

- Overall Single Site conformance



UX Single Site Level Metrics

- Single Site level metrics

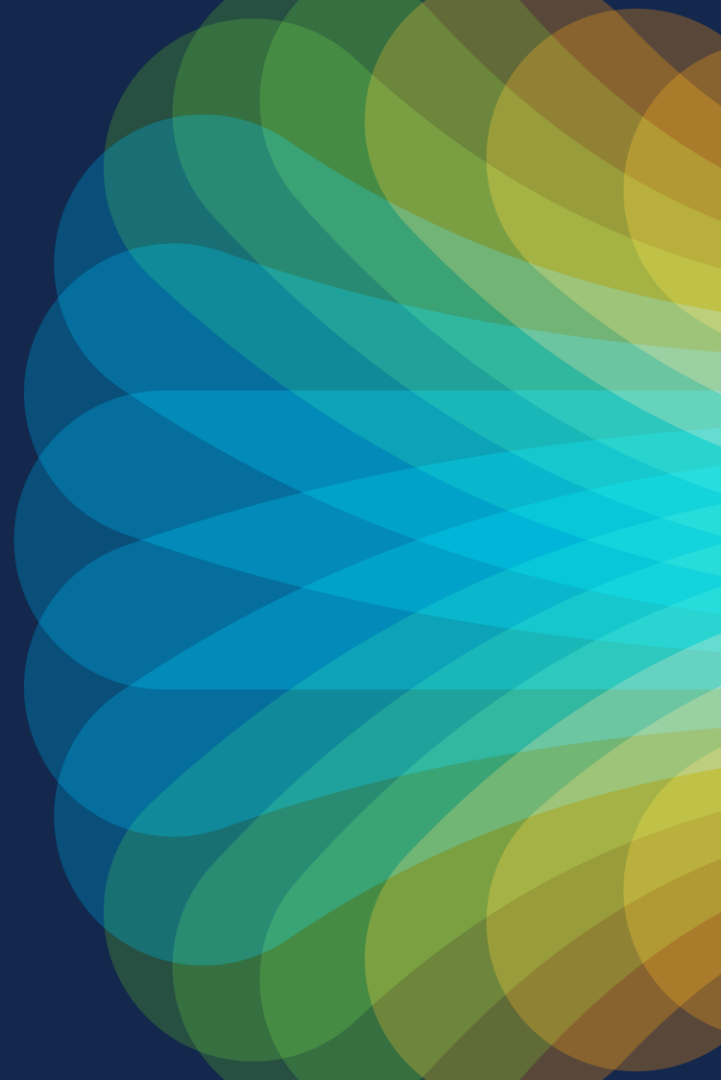
Site Level Scale Metrics

Filter by attributes		
Metric	Conformance Status	Resource Usage 
Number of pods	 Conformant	<div><div></div></div> 16.67% 1 of 6 
Number of spines in a multipod fabric	 Conformant	<div><div></div></div> 4.17% 1 of 24 
Number of L3 contexts (VRFs)	 Conformant	<div><div></div></div> 3.50% 35 of 1000 
Number of leaf switches	 Conformant	<div><div></div></div> 2.35% 2 of 85 
Number of tenants	 Conformant	<div><div></div></div> 1.40% 14 of 1000 
Number of contract filters	 Conformant	<div><div></div></div> 0.73% 73 of 10000 
Number of contracts	 Conformant	<div><div></div></div> 0.54% 54 of 10000 
Number of endpoint groups (EPGs)	 Conformant	<div><div></div></div> 0.42% 63 of 15000 
Number of L4-L7 graphs	 Conformant	<div><div></div></div> 0.40% 4 of 1000 
Number of L4-L7 devices (HA pairs)	 Conformant	<div><div></div></div> 0.33% 4 of 1200 

10  Rows

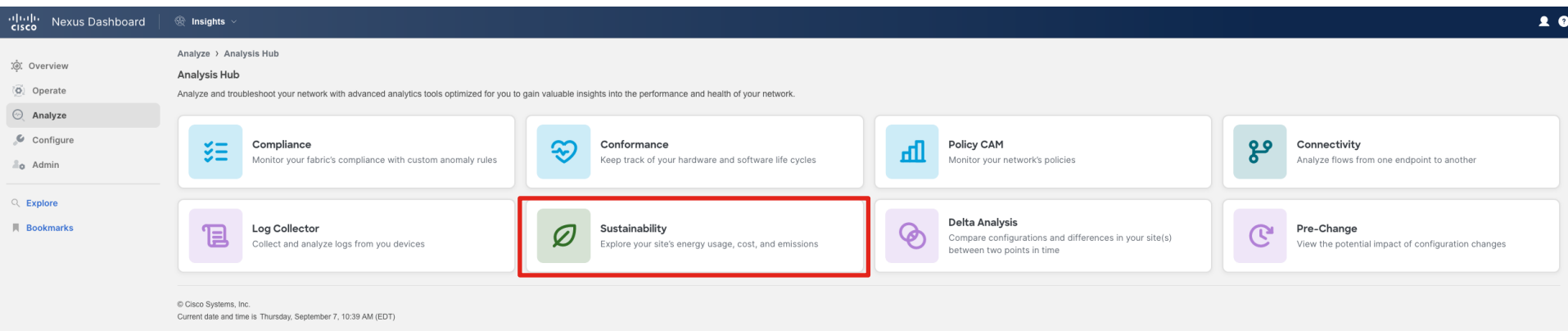
Page 1 of 2 << < 1-10 of 14 > >>

Sustainability



Sustainability

- With the Sustainability feature, customers can visualize how a Datacenter fabric is consuming energy and the type of energy as well
- This Feature is found under Analyze > Analysis Hub



Sustainability Report

- Upon navigating to Sustainability previous months report
 - Ex. If user opens Sustainability in shown
- Use the drop d Month”

Cost

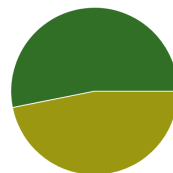
Since your energy usage is higher for August than normal, we're expecting your energy bills to be higher overall

Est. Daily Cost for August

\$16.86

Estimated daily cost for August, based on your sites' energy usage and the average energy cost in each site's region

Share of Daily Cost Per Site



prod-fabric	53.13%
qa-fabric	46.87%

Analyze > Analysis Hub > Sustainability

Sustainability Report

All Sites (2)

August 2023

For August, you've used significantly more energy from the grid across your sites

August At A Glance

Emissions are estimates based on site locations, like Electricity Maps. You can learn more about our

August Summary

Estimated Cost
\$498.98

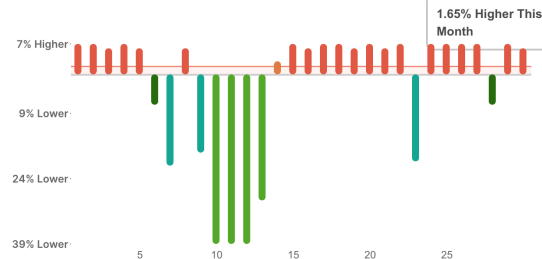
Energy

Usage August

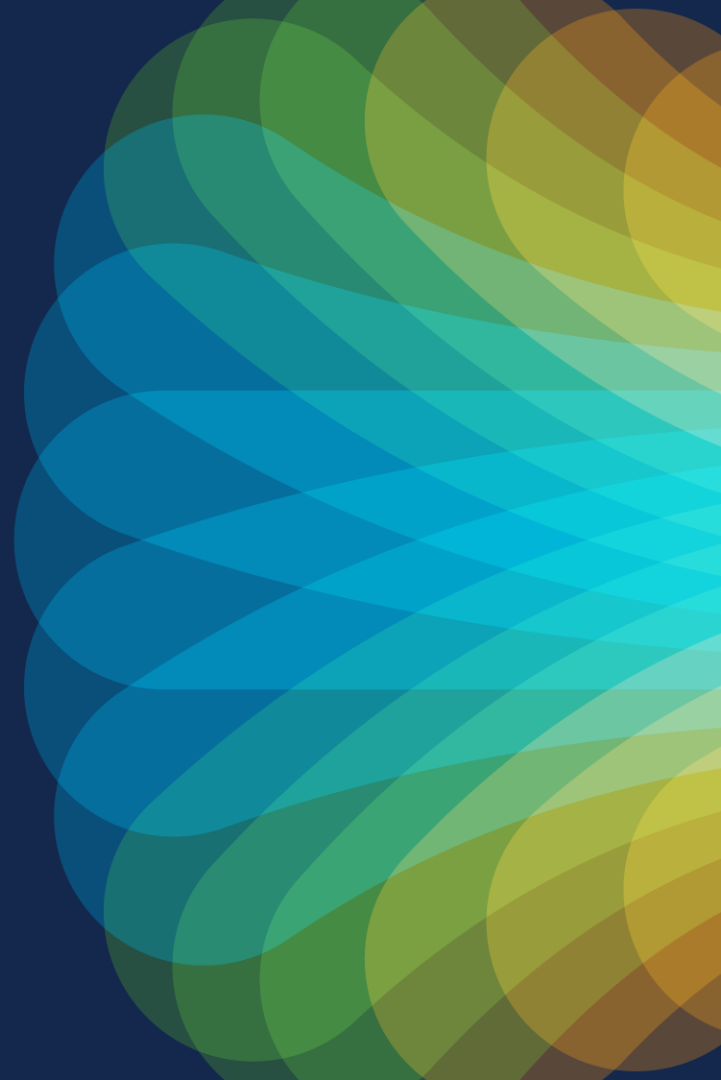
Higher

Total usage from August 1 to date, when compared to your usage for last month July 2023

Daily usage versus prior month's average			
0-12% lower	0-2% higher	2-5% higher	5%+ higher
12-25% lower			
25%+ lower			



Remote Data Storage



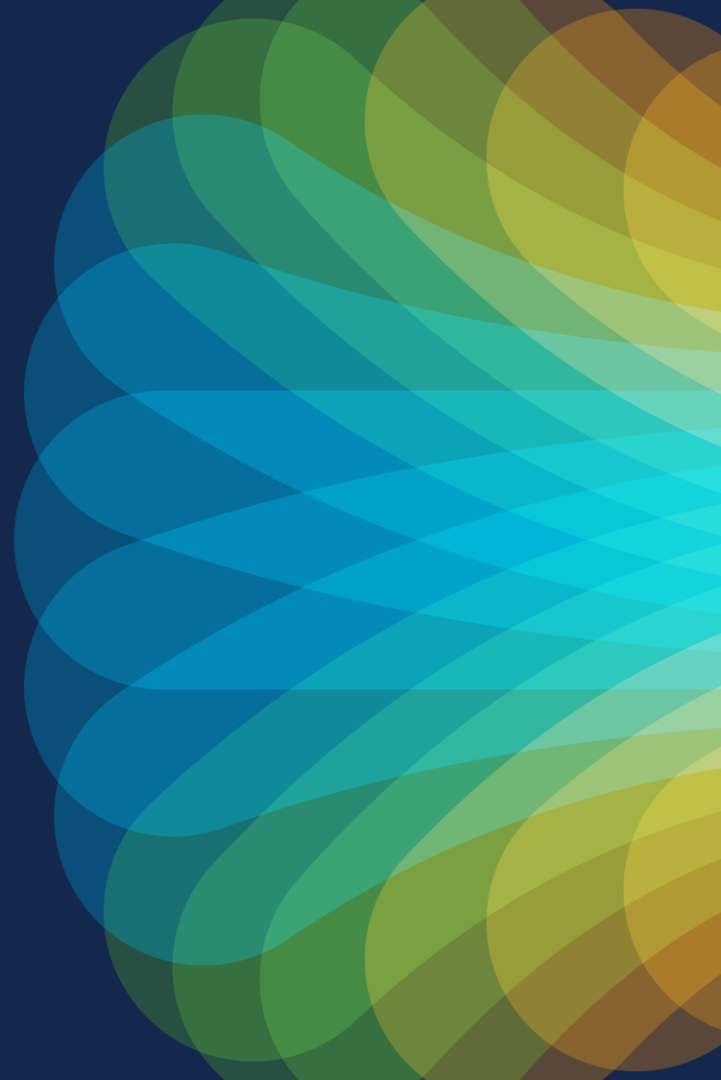
Remote Data Storage (RDS) NDI Support Intro

- This feature allows to store fabric data Flows collected in NDI into remote data storage
- Historically flows were stored in the Nexus Dashboard storage and therefore limited to the capacity of the cluster
- The current local storage would allow to store flows for no more than a week
- Many customers requested to have flows stored for much longer time. RDS comes to satisfy this need as in principle customers can now store infinite flows, as long as they have infinite storage.

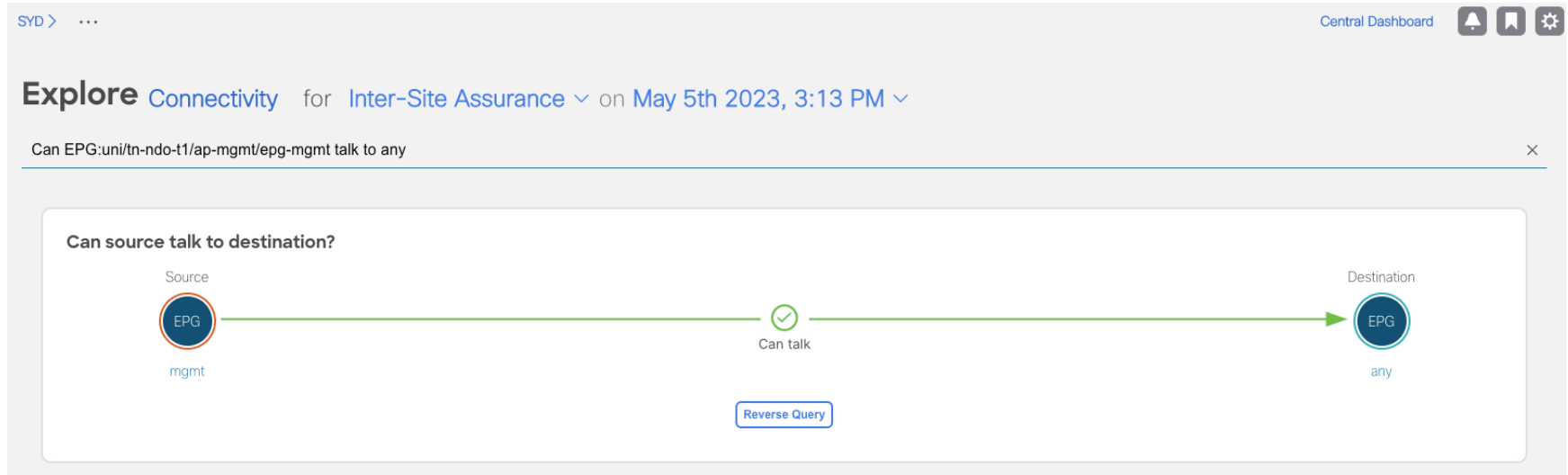
Remote data storage

- Uses only NFSv3
- RDS is added in ND and NDI user claims the storage for flow export
- Only sends flow data to remote NAS
- User can choose:
 - BASE flow export: 5-tuple (an example will be provided)
 - FULL flow export: full record (an example will be provided)

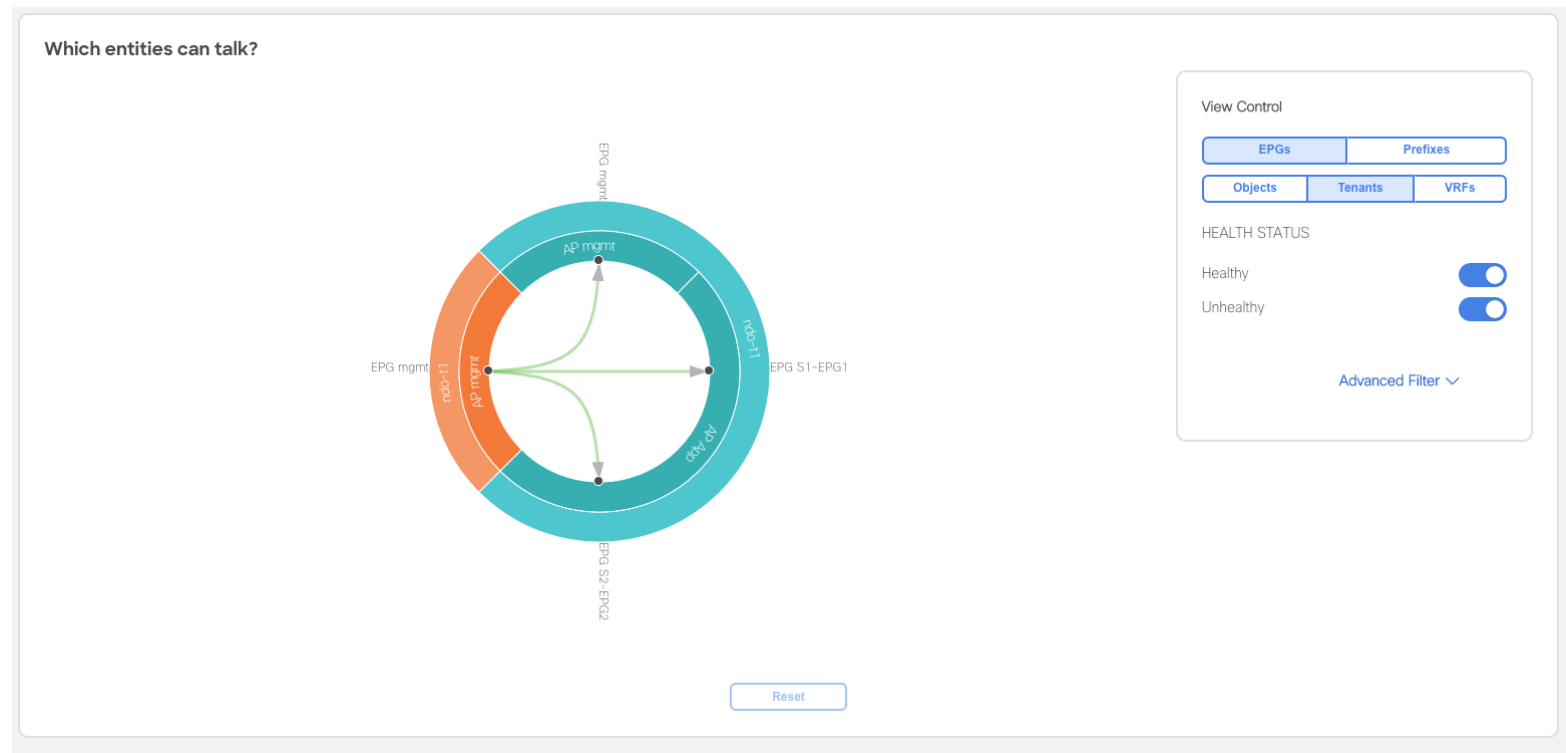
NDO Assurance



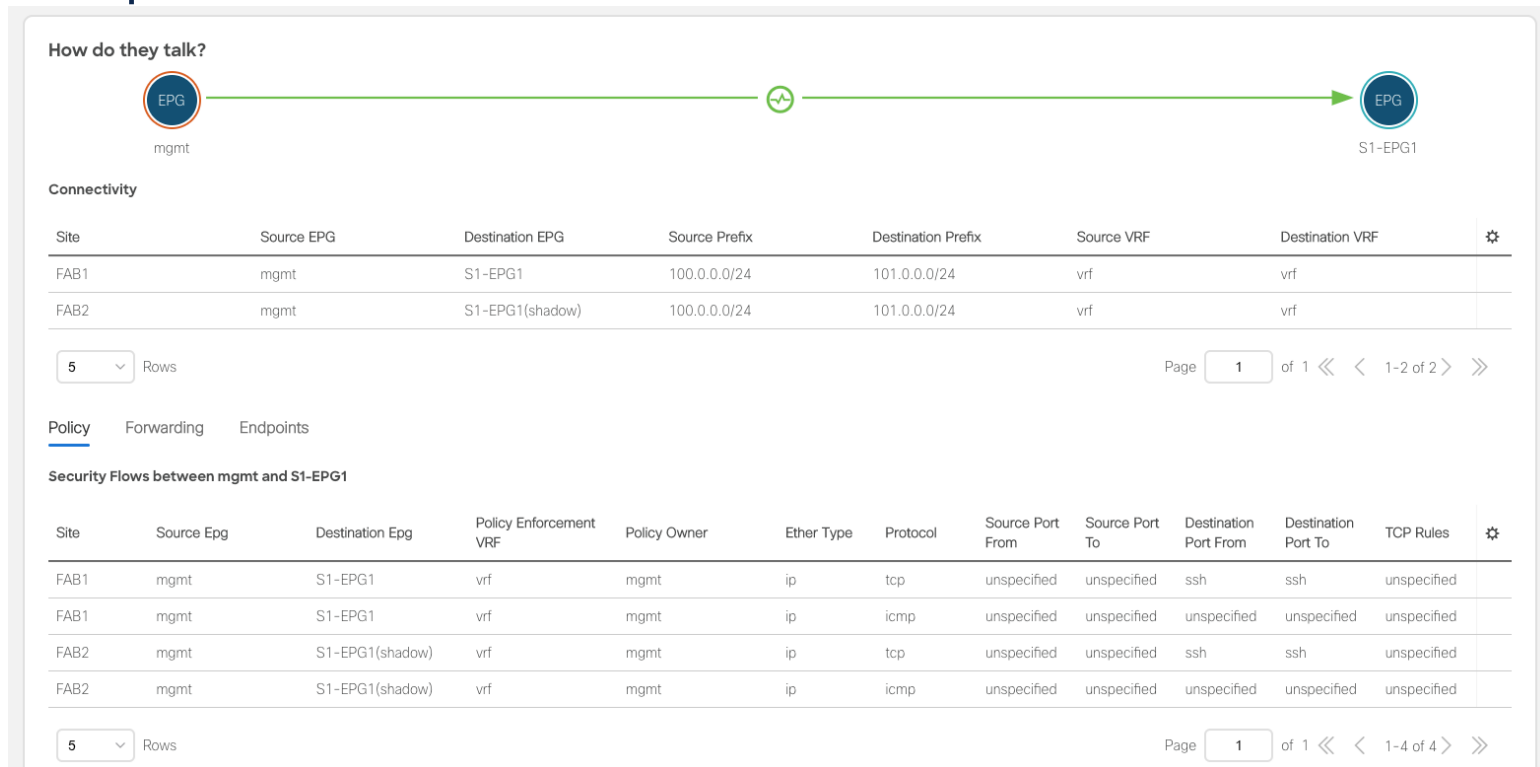
NDO Explorer



NDO Explorer



NDO Explorer



NDO Explorer

Policy Forwarding Endpoints

Tenant Endpoint Details between epg1 and epg2

Filter by attributes

Severity	Site	MACs	IPs	EPGs	BDs	VRFs	Encaps	Interface	⚙
-	qa-fabric prod-fabric	00:50:56:AF:3B:2F	192.168.44.200 192.168.44.100	unlabeled-epg	stretch-bd2	vrf1	1234	po1	
-	qa-fabric prod-fabric	00:50:56:AF:18:0E	192.168.41.200	unlabeled-epg	stretch-bd1	vrf1	1200	po1	

5

Rows

Page

1

of 1

1-2 of 2

Anomalies Individual

Filter by attributes

Severity	Title	Sites	Category	Description	⚙
No rows found					

10

Rows

Page

1

of 1

0-0 of 0

NDO Assurance Anomalies

Overview

Operate

Analyze

Configure

Admin

Explore

Bookmarks

Anomalies

Online Sites

All Anomalies Orchestrator on Select a

Filter

Title	Anomaly Level	Category	Count
NDO Site External Interface Oper Down Admin Up	Critical	Configuration	1

10 Rows

Page 1 of 1 << 1-1 of 1 >>

What's the impact?

Spine to external network connectivity will be degraded or lost.

Site Name

FAB1

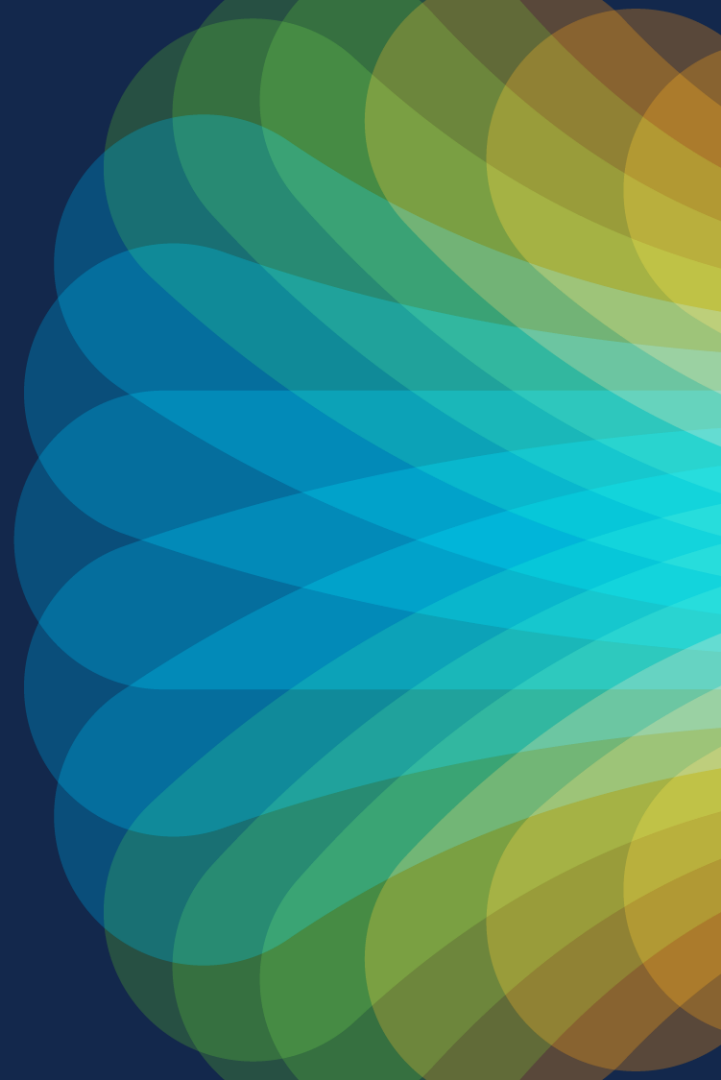
Node Name

Spine198

Interfaces	Operational State Reason
eth1/16	link-not-connected

But I have many
fabrics!

Global View



Cluster Federation – OneView

Cluster
vND

Overview

Operate

Analyze

Admin

Welcome, camrossi

OverviewJourney: Getting StartedGlobal View

My Sites

MapTable

Filter by attributes

Health Score	Name	Type	Connectivity Status	Anomaly Score	Advisories	Firmware Version	Services	
Healthy	DC-WEST vND	ACI	Down	Critical	Critical	6.2(1.21)	0	...
Healthy	SITE1 vND	DCNM	Down	N/A	N/A	12.2(1)	0	...
Warning	FAB1 ND-SYD	ACI	Up	Healthy	Healthy	6.0(3.49a)	2	...
Warning	FAB2 ND-SYD	ACI	Up	Healthy	Healthy	6.0(3d)	2	...

Rows per page10<1>

Nexus Snapshot

Anomalies active now

Anomalies by Severity

Critical 19

Major 15

Warning 11

45
Total

Top Sites by Anomaly Score

DC-WEST

Advisories active now

Advisories By Severity

Critical 4

Major 3

Warning 2

9
Total

Top Sites by Advisories

DC-WEST (9)

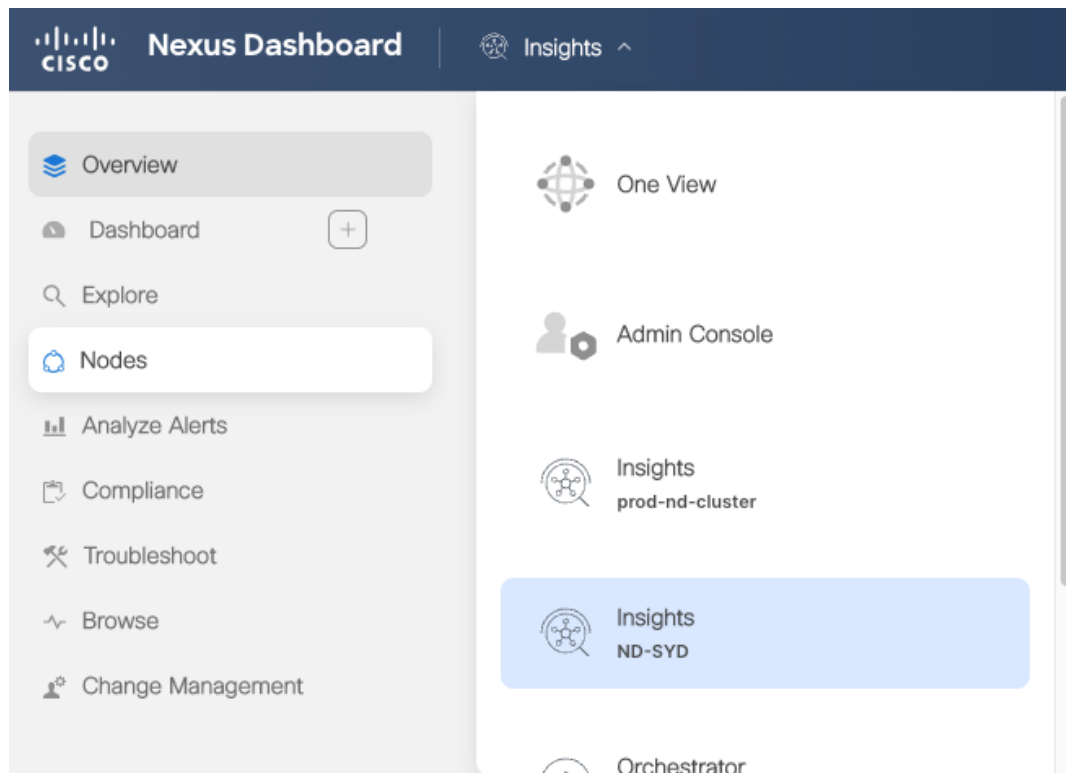
Single Sign On (SSO)

My Sites

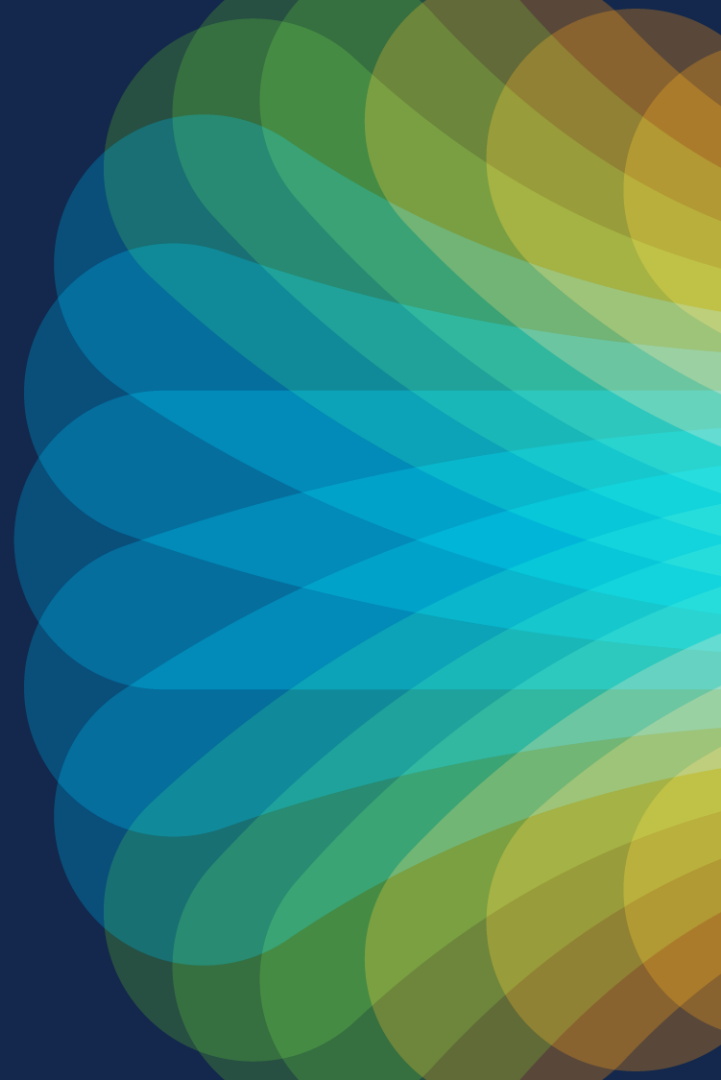
[Map](#)[Table](#)

Health Score	Name	Type	Connectivity Status	Anomaly Score	Advisories	Firmware Version	Services	
 Minor	FAB2 ND-SYD	 ACI	 Up	 Critical	 (2)	6.0(2h)	Launch	
N/A	capic-azure-east prod-nd-cluster	 Cloud Network Controller 	 Down	 N/A	 (N/A)	25.0(3k)	0	
N/A	test prod-nd-cluster	 Cloud Network Controller 	 Down	 N/A	 (N/A)	25.0(3k)	0	
 Healthy	qa-fabric prod-nd-cluster	 ACI	 Up	 Critical	 (0)	6.0(2h)	2	

Multiple Services, Multiple Sites, All-In-One Dashboard



Demos



How to troubleshoot an application connectivity issue

Connectivity Analysis

Integration into external tools and usage of FTE

Enforcing Config Compliance

CICD Pipeline

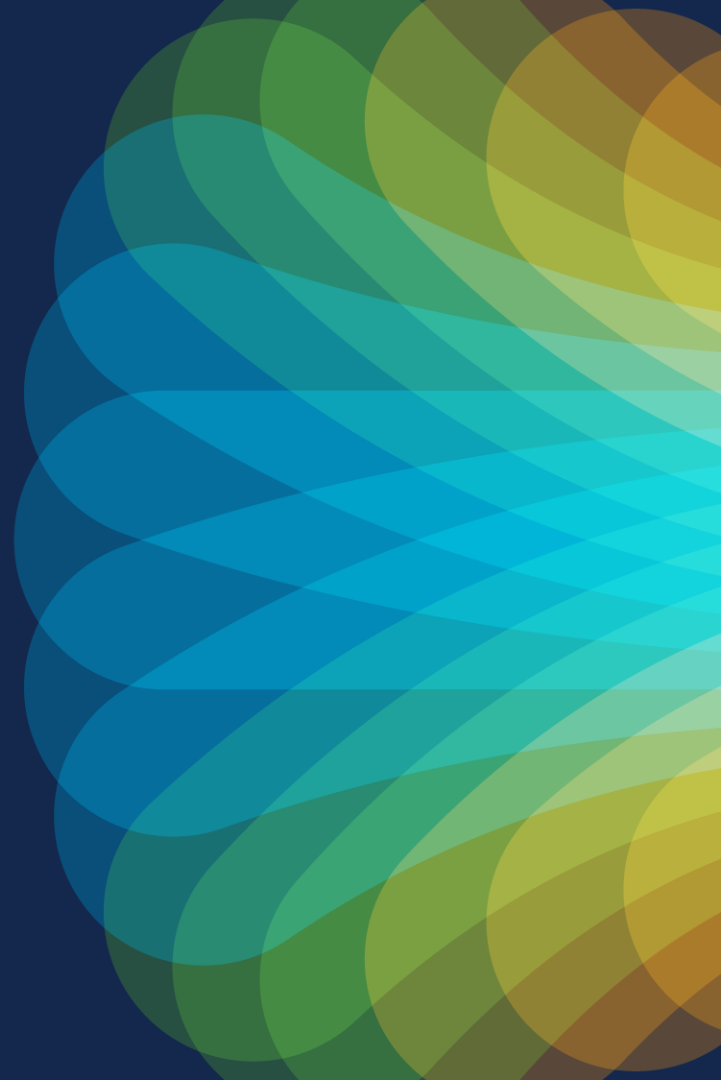
Firmware Update Analysis

App Dynamics Integration

Remote Data Storage

Sustainability and Conformance

Conclusion



Take Away

- Better visibility with real time analysis
- Meaningful, actionable anomalies
- Root Cause is a few clicks away
- Assurance for your configuration intent



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Thursday	9:30am – 4:00pm
Friday	10:30am – 1:30pm

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The bridge to possible

Thank you

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The background features a vibrant, abstract design. On the left, there are horizontal, wavy bands of color in shades of red, orange, yellow, and green. On the right, a bright white light source emits a series of colorful rays in shades of blue, cyan, and yellow, creating a sunburst effect.

cisco *Live!*

Let's go

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