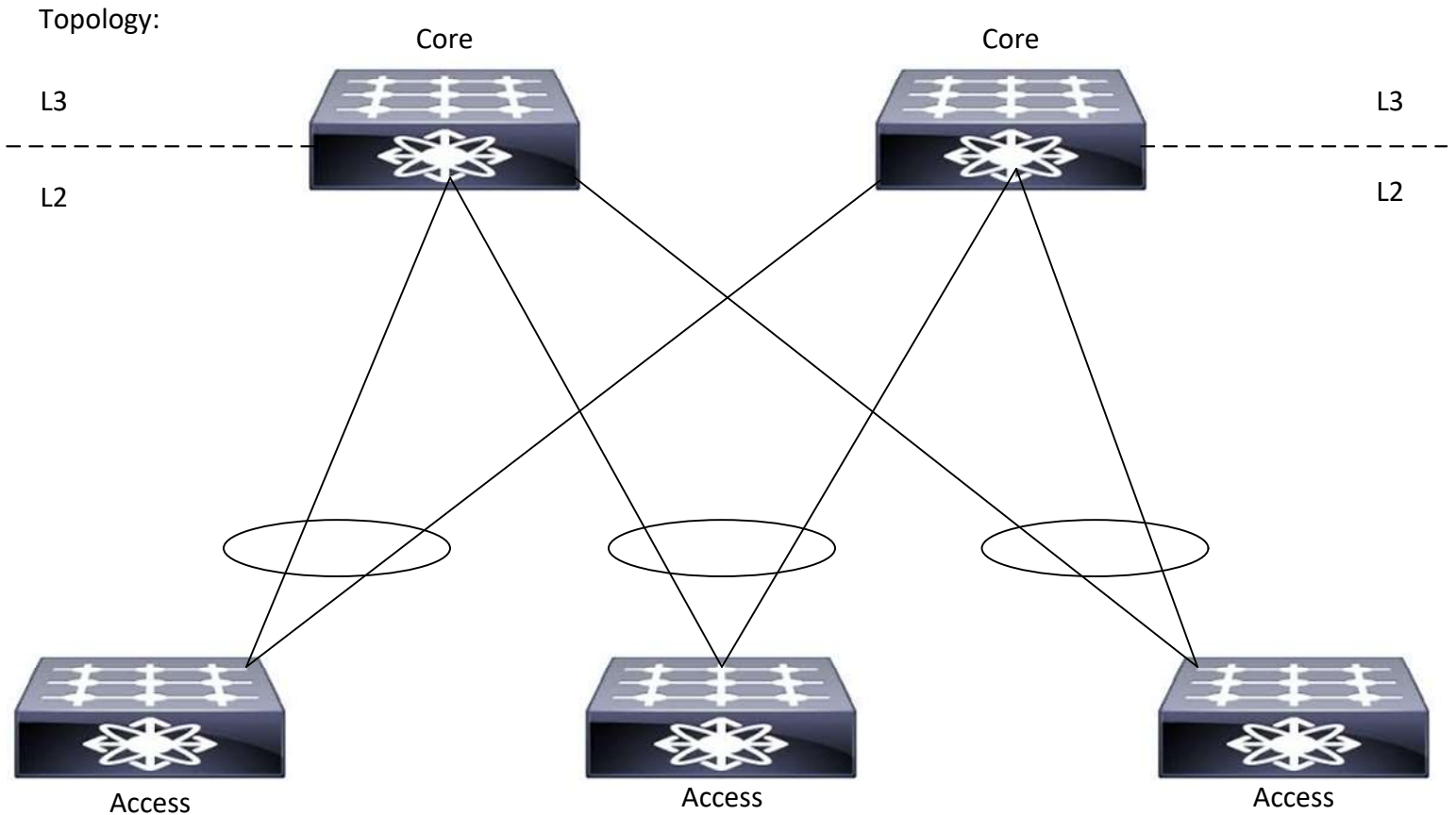


# Create an NDFC-Managed Classic LAN Site and Add it to NDI

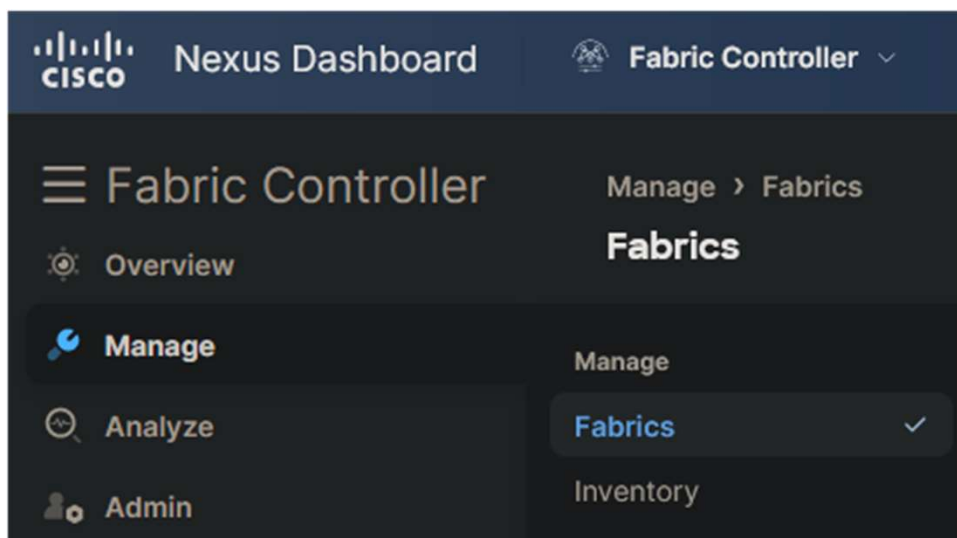
ND version: 3.1(1k)  
NDFC version: 12.2.1  
NDI version: 6.4.1

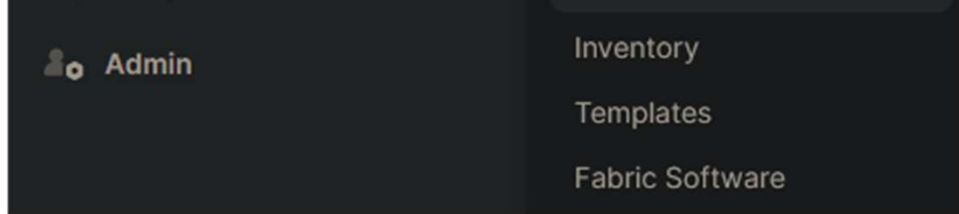


Nowadays, the most common NDFC site deployments are *Data Center VXLAN EVPN* fabrics, but NDFC is capable of deploying many other types of sites/fabrics, including *Classic LAN*. However, before adding an NDFC-managed *Classic LAN* site to NDI, there are some additional configurations that need to be made, all of which are not documented. Therefore, the purpose of this document is to demonstrate how to properly add an NDFC-managed *Classic LAN* site to NDI.

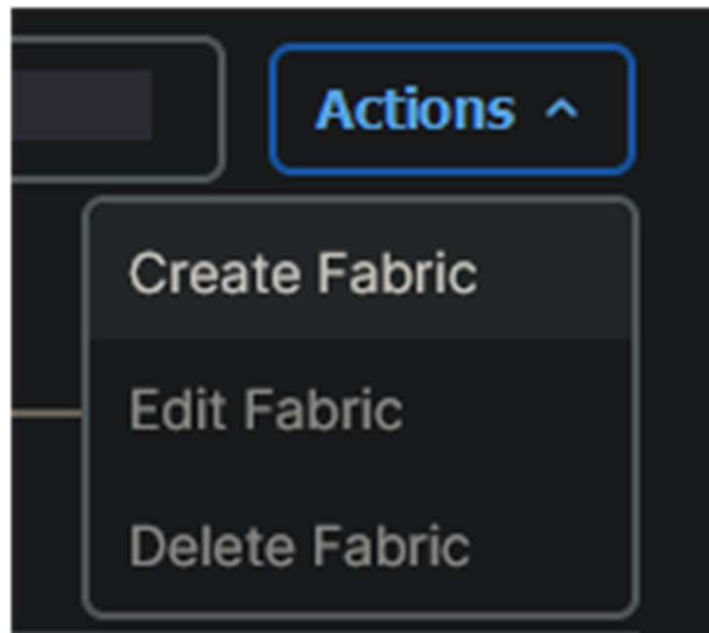
\*Note: this document assumes that you already have NDFC and NDI up and running. If this is not the case, please start with the installation guides found on Cisco.com.

1. Navigate to Nexus Dashboard Fabric Controller, and select **Manage** → **Fabrics**

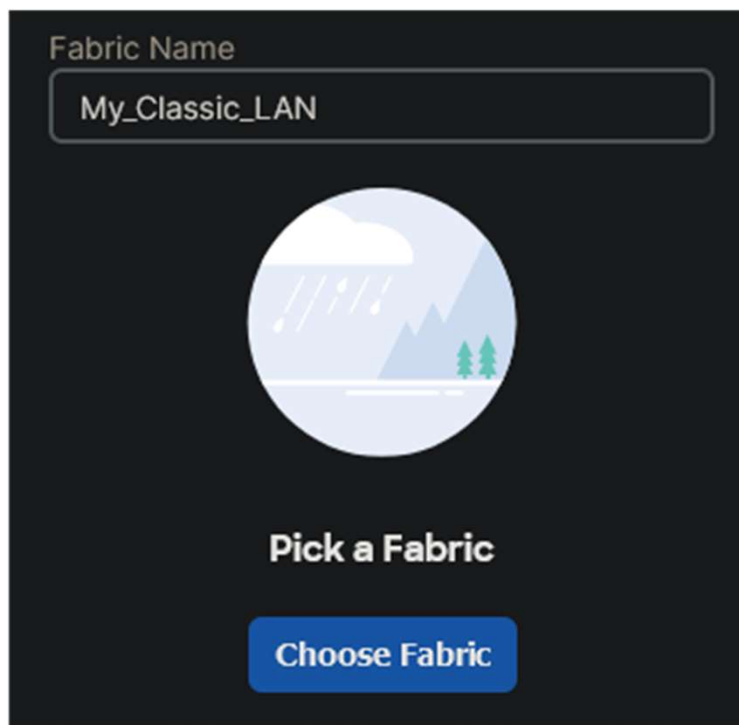




2. From the Actions menu, select **Create Fabric**



3. In the **Fabric Name** field, type in the desired name of your fabric



#### 4. Select **Classic LAN**

### Classic LAN

Fabric to manage a legacy Classic LAN deployment with Nexus switches.

5. On the **General Parameters** tab, **disable Fabric Monitor Mode**, since this site will be a managed site

The screenshot shows the 'Create Fabric' configuration page with the 'General Parameters' tab selected. The 'Fabric Name' field contains 'My\_Classic\_LAN'. Below it, 'Pick Fabric' shows 'Classic LAN' with a right arrow. The 'General Parameters' tab is active, with other tabs being 'Advanced', 'Resources', 'Configuration Backup', 'Bootstrap', and 'Flow Monitor'. Under 'General Parameters', 'Fabric Monitor Mode' is disabled (checkbox is empty), with a note: 'If enabled, fabric is only monitored. No configuration will be deployed'. 'Enable Performance Monitoring (For NX-OS Switches Only)' is enabled (checkbox is checked).

6. On the **Advanced** tab, **enable PTP** (as this is a necessary feature for NDI to send telemetry data), then click **Save**

The screenshot shows the 'Create Fabric' configuration page with the 'Advanced' tab selected. The 'Fabric Name' field contains 'My\_Classic\_LAN'. Below it, 'Pick Fabric' shows 'Classic LAN' with a right arrow. The 'Advanced' tab is active, with other tabs being 'General Parameters', 'Resources', 'Configuration Backup', 'Bootstrap', and 'Flow Monitor'. Under 'Advanced', 'Power Supply Mode' is set to 'ps-redundant' (dropdown menu), with a note: 'Default Power Supply Mode For Bootstrapped NX-OS Switches'. 'Enable MPLS Handoff' is disabled (checkbox is empty). 'Underlay MPLS Loopback Id' is empty (text field), with a note: '(Min:0, Max:1023)'. 'Enable AAA IP Authorization' is disabled (checkbox is empty), with a note: 'Enable only, when IP Authorization is enabled in the AAA Server'. 'Enable NDFC as Trap Host' is enabled (checkbox is checked), with a note: 'Configure NDFC as a receiver for SNMP traps'. 'Enable CDP for Bootstrapped Switch' is disabled (checkbox is empty), with a note: 'Enable CDP on management interface'.

Enable CDP for Bootstrapped Switch ☐ Enable CDP on management interface

Enable NX-API ☒ Enable HTTPS NX-API

NX-API HTTPS Port Number  
443

Enable HTTP NX-API ☐

NX-API HTTP Port Number

Inband Mgmt ☐ Import switches with inband connectivity

Enable Precision Time Protocol (PTP) ☒

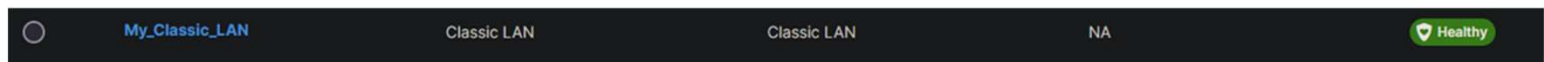
PTP Source Loopback Id\*  
0 (Min:0, Max:1023)

PTP Domain Id\*  
0 Multiple Independent PTP Clocking Subdomains on a Single Network (Min:0, Max:127)

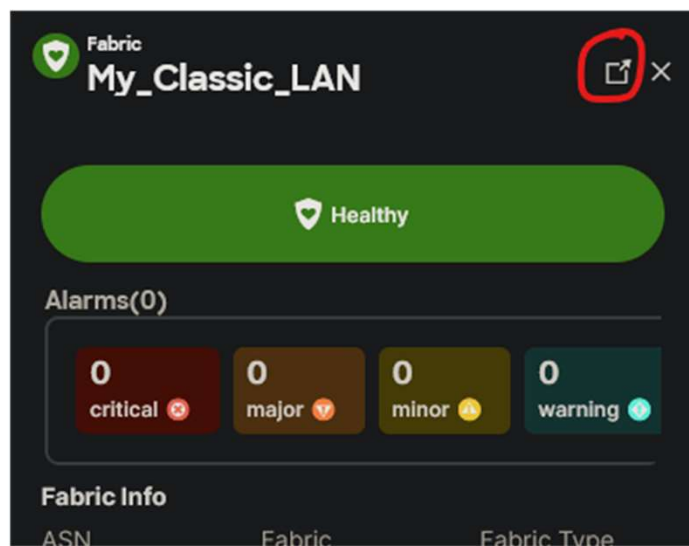
Fabric Freeform

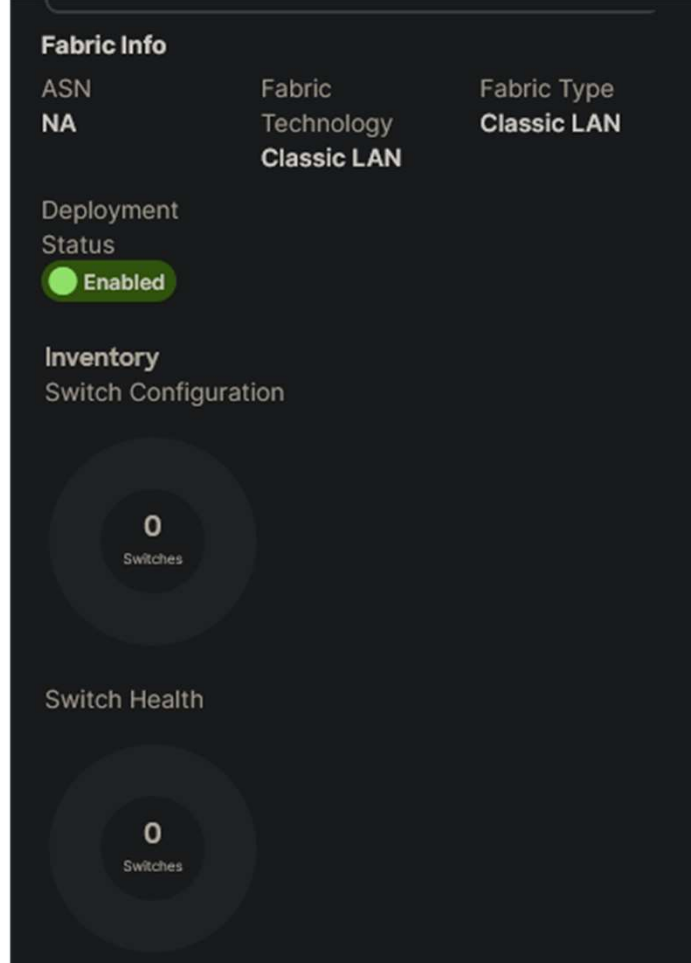


7. Click on the name of your new fabric



8. Click the box in the top right corner to open the **Fabric Overview** window

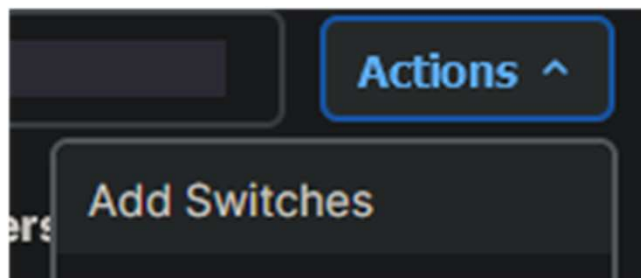




9. Click on the **Switches** tab



10. From the **Actions** drop down menu, select **Add Switches**



11. In the **Seed IP** field, input the **mgmt0 interface IP** address of at least one of the switches in your fabric (ND must have OOB mgmt connectivity to the fabric)

Switch Addition Mechanism\*

☒ Discover

### Seed Switch Details

Seed IP\*

Seed IP

Seed IP is required

Authentication Protocol\*

MD5

Username\*

Password\*

☐ Set as individual device write credential

Max Hops\*

2

```
sh run int mgmt0

!Command: show running-config interface mgmt0

version 10.4(2) Bios:version 05.51

interface mgmt0
 vrf member management
 ip address
```

12. In the **Username** and **Password** fields, enter the **username** and **password** of the switch(es) in the fabric

Add Switches - Fabric: My\_Classic\_LAN

Switch Addition Mechanism\*

☒ Discover

### Seed Switch Details

Seed IP\*

Ex: "2.2.2.20" or "10.10.10.40-60" or "2.2.2.20, 2.2.2.21"

Authentication Protocol\*

MD5

Username\*

admin

Password\*

☐ Set as individual device write credential

Max Hops\*

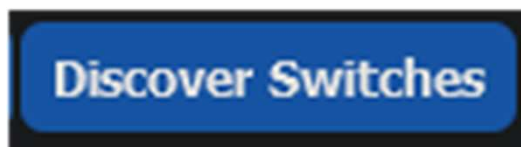
admin

Max Hops\*

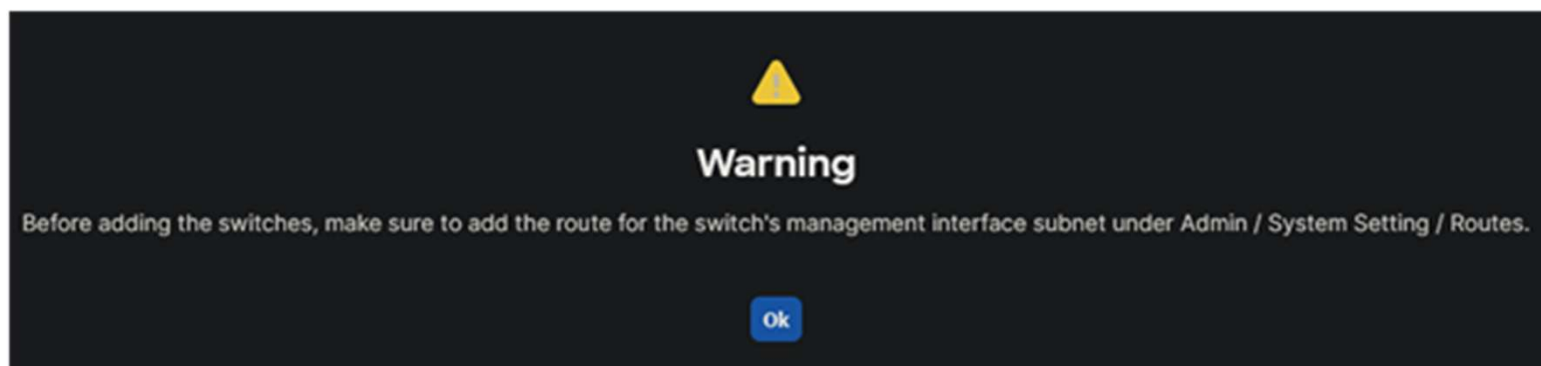
2

☐ Set as individual device write credential

13. Click **Discover Switches**



14. Take note of the warning message and complete this action under **Admin Console** → **Admin** → **System Settings** → **Routes** → **Management Network Routes**, if you haven't already done so



**Nexus Dashboard** Admin Console

Admin > System Settings

### System Settings

**General** Multi-Cluster Connectivity

#### Cluster Details

Name	App Subnet	Service Subnet
	App Subnet IPv6	Service Subnet IPv6

#### Proxy Configuration

**Type** **Server**

Ignore Hosts

#### Routes

**Management Network Routes**

**Data Network Routes**

15. You should also see a list of discovered switches, choose which switches you want to add to your fabric

15. You should now see a list of **discovered switches**; choose which switches you want to add to your fabric by **selecting the checkbox** next to them

Add Switches - Fabric: My\_Classic\_LAN

Switch Addition Mechanism\*  
☒ Discover

**Seed Switch Details**

Fabric My_Classic_LAN	Switch [redacted]	Authentication Protocol MD5	Username admin
Password <input type="checkbox"/> Set as individual device write credential	Max Hops 2	Preserve config <input checked="" type="checkbox"/> Enabled	

← Back

**Discovery Results**

Filter by attributes

Switch Name	Serial Number	IP Address	Model	Version	Status	Progress
<input type="checkbox"/> [redacted]	[redacted]	[redacted]	N9K-C93108TC-FX	9.3(5)	<span>Manageable</span>	
<input checked="" type="checkbox"/> [redacted]	[redacted]	[redacted]	N9K-C93180YC-FX	10.4(2)	<span>Manageable</span>	

16. After selecting the desired switches, click on **Add Switches**

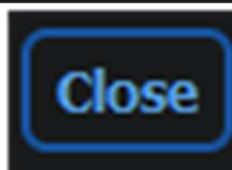


17. Watch the **Progress** bar to ensure that the switches get added properly; after the **Status** message changes to **Switch Added**, you may select the **Close** button

Status	Progress
<span>Manageable</span>	
<span>In Progress</span>	<div></div>

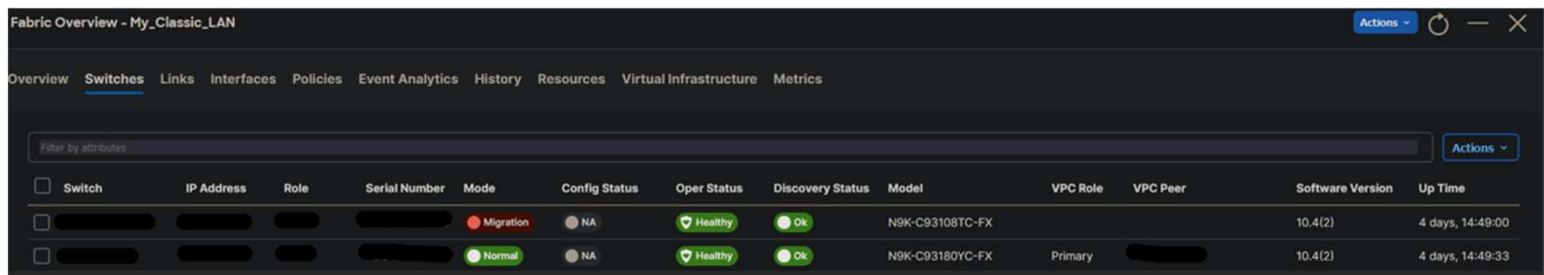
  

Status	Progress
<span>Manageable</span>	
<span>Switch Added</span>	<div></div>



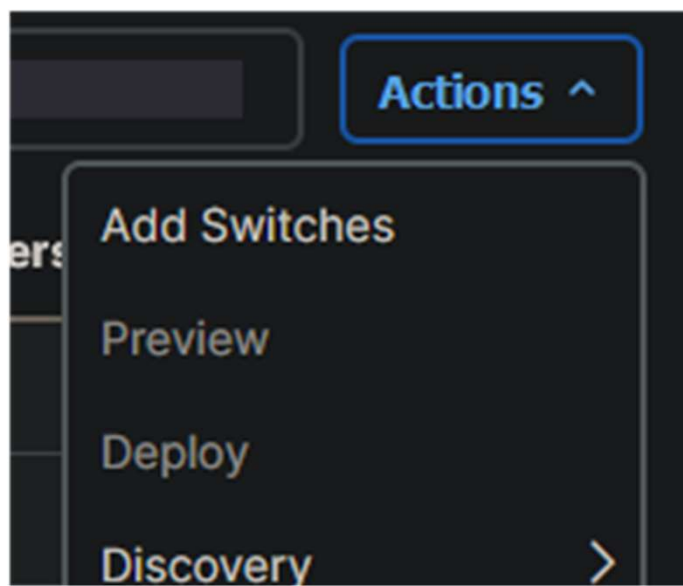
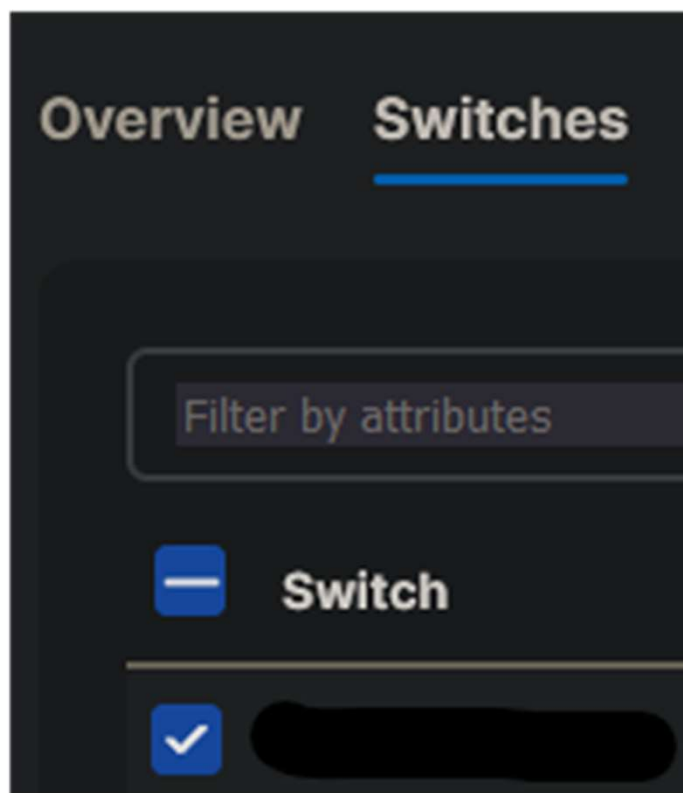


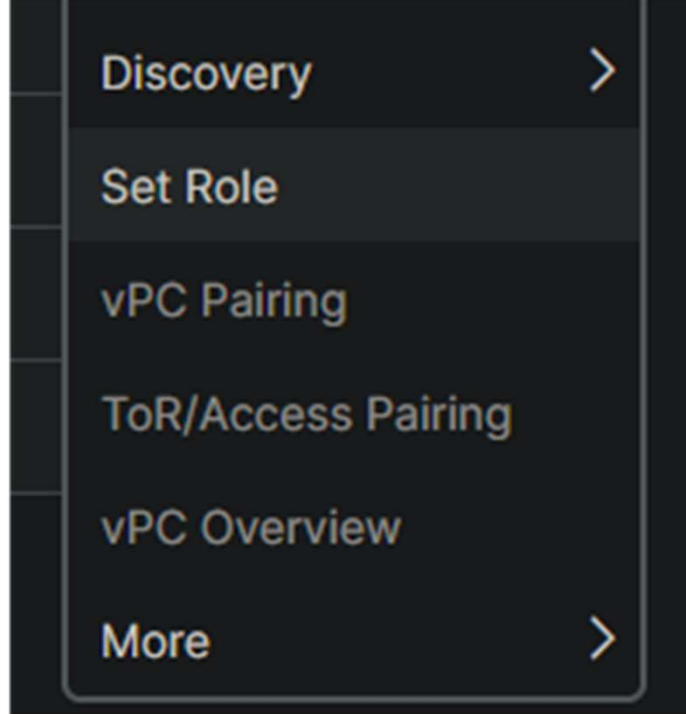
18. In the **Fabric Overview** window → **Switches** tab, you should now see switches



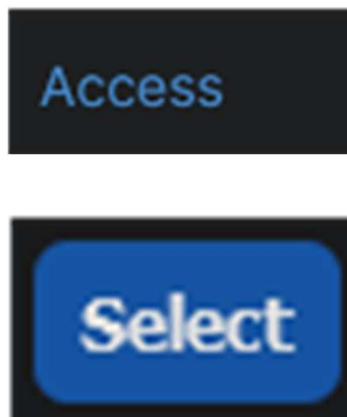
Switch	IP Address	Role	Serial Number	Mode	Config Status	Oper Status	Discovery Status	Model	VPC Role	VPC Peer	Software Version	Up Time
<input type="checkbox"/>				Migration	NA	Healthy	Ok	N9K-C93108TC-FX			10.4(2)	4 days, 14:49:00
<input type="checkbox"/>				Normal	NA	Healthy	Ok	N9K-C93180YC-FX	Primary		10.4(2)	4 days, 14:49:33

19. Choose each switch by **selecting the checkbox** next to them, then from the **Actions** menu select **Set Role** to choose the type of role the switch will have in your fabric

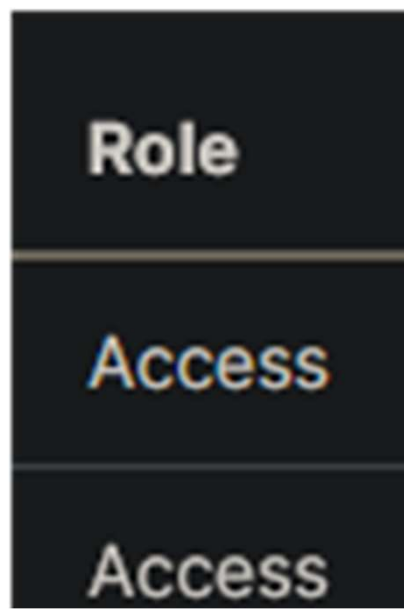


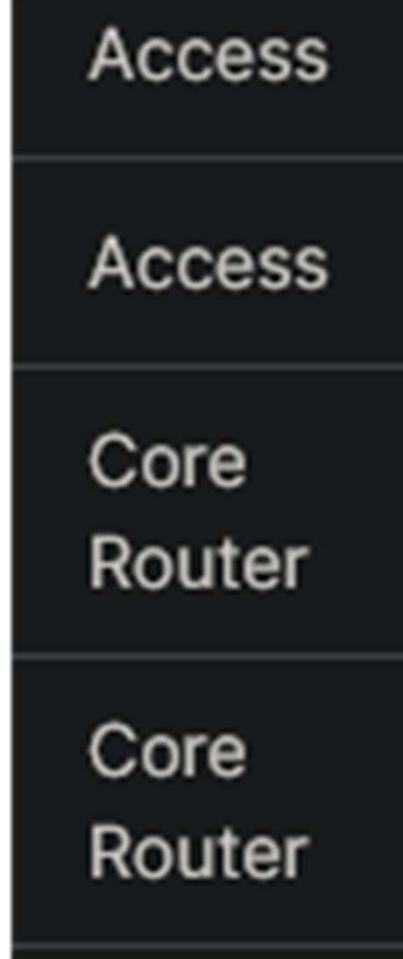


20. Select the desired switch role, then click on the **Select** button

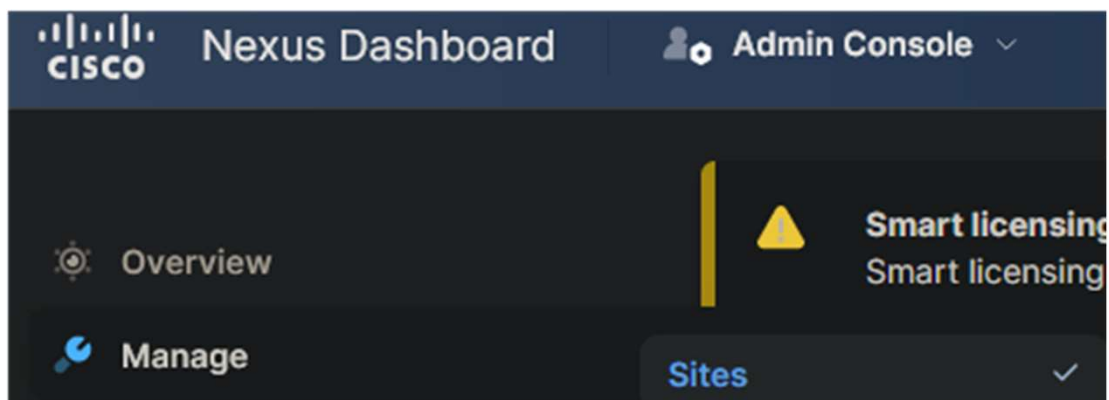


21. You should now see that each switch in the fabric has a **role assigned**

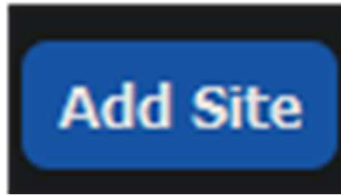




22. Now that your *Classic LAN* fabric has been created, navigate to Nexus Dashboard Insights, and select **Manage** → **Sites**



23. Select the **Add Site** button on the right side of the page



24. Enter the **hostname** or **IP address** of the **Nexus Dashboard data network interface** (can be obtained from the "DATANETWORK" field in the "acs show nodes" command output on the CLI of an ND node), followed by the ND credentials

acs show nodes						
NAME (*=SELF)	SERIAL	VERSION	ROLE	DATANETWORK	MGMTNETWORK	STATUS
		3.1.1k	Master			Active

Nexus Dashboard

Admin Console

Manage > Sites > Add Site

Overview

Manage

Analyze

Admin

Add Site

You can add a controller or a group of NX-OS Switches to be part of a site.

What is a Site? | How to prepare your ACI and NX-OS Switches for Nexus Dashboard

1 Add Site

2 Details

3 Summary

Add Site

Add your site's host name/IP and login information below to fetch your site and add it to Nexus Dashboard.

Hostname/IP Address \*

Username \*

admin

Password \*

Login Domain

Use Proxy

Validate Peer certificate

Security Domains

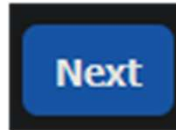
Name

Add Security Domains

Cancel

Next

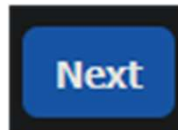
25. Select **Next**



26. Select the checkbox next to your fabric, and choose a location

☒ My\_Classic\_LAN    My\_Classic\_LAN    LanClassic    Washington, DC, United States    [See on map](#)

27. Select **Next**



28. Make sure all the information is correct, then select **Save**

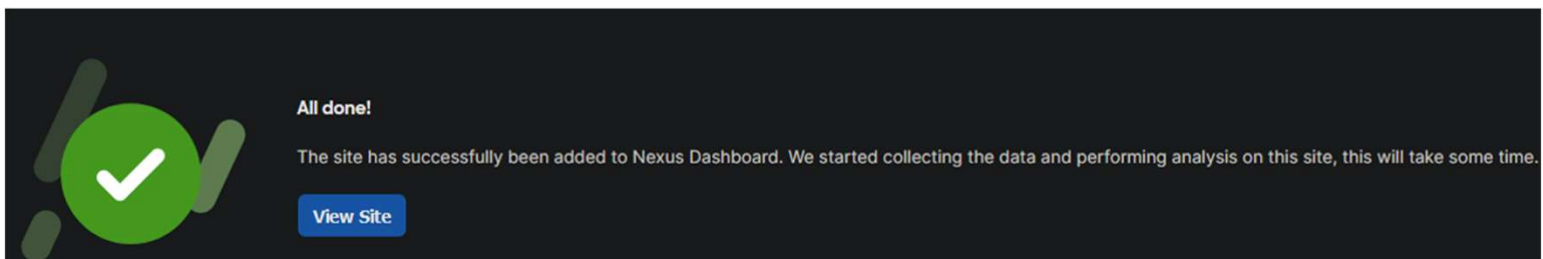
**Summary**

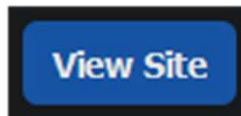
Site Name	Fabric Name	Location
My_Classic_LAN	My_Classic_LAN	Washington, DC, United States

[Back](#) [Save](#)



29. On the next page, select **View Site**



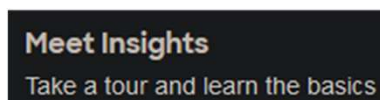
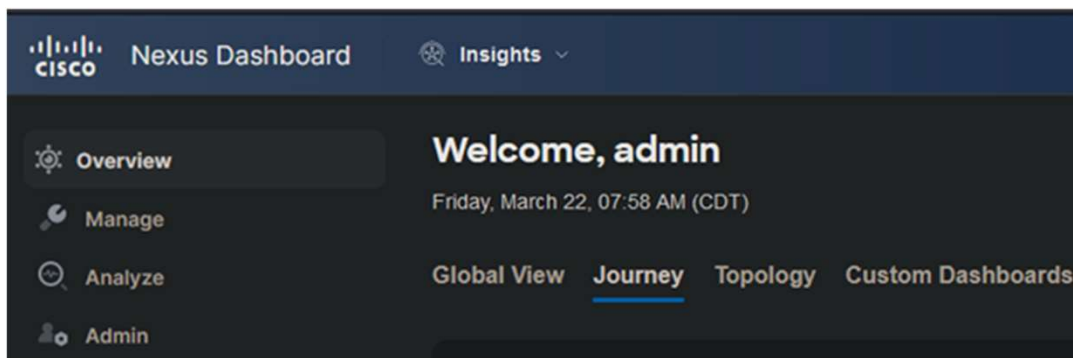
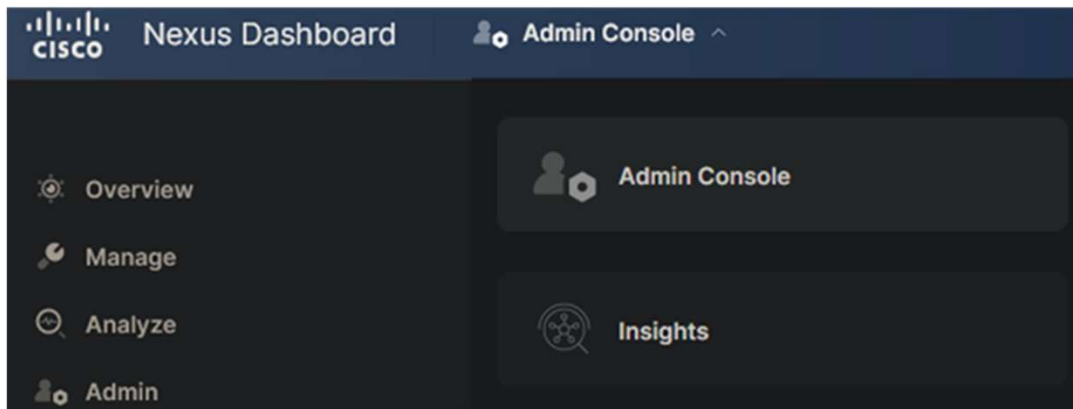


30. Verify that the site is **Healthy** and that the **Connectivity Status** is **Up**

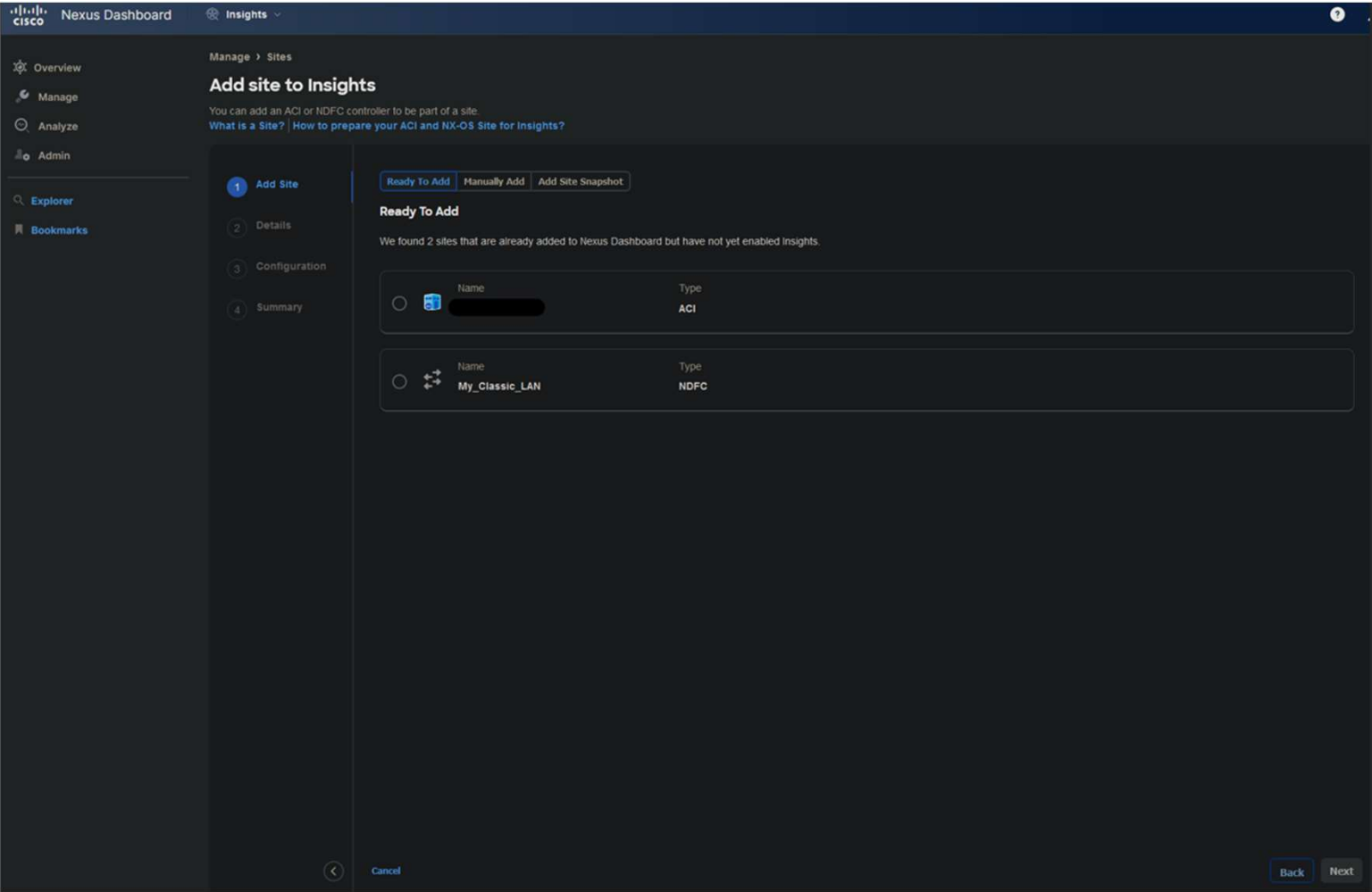
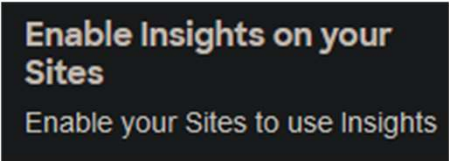
The screenshot shows the "Sites" page in the Cisco Nexus Dashboard Admin Console. The left sidebar contains navigation links: Overview, Manage, Analyze, and Admin. The main content area has a "Filter by attributes" search bar and an "Add Site" button. Below is a table with columns: Health Score, Name, Type, Connectivity Status, Firmware Version, and Enabled Services.

Health Score	Name	Type	Connectivity Status	Firmware Version	Enabled Services
Minor	[REDACTED]	ACI	Up	5.2(7f)	0
Healthy	My_Classic_LAN	NDFC	Up	12.2.1.316	0

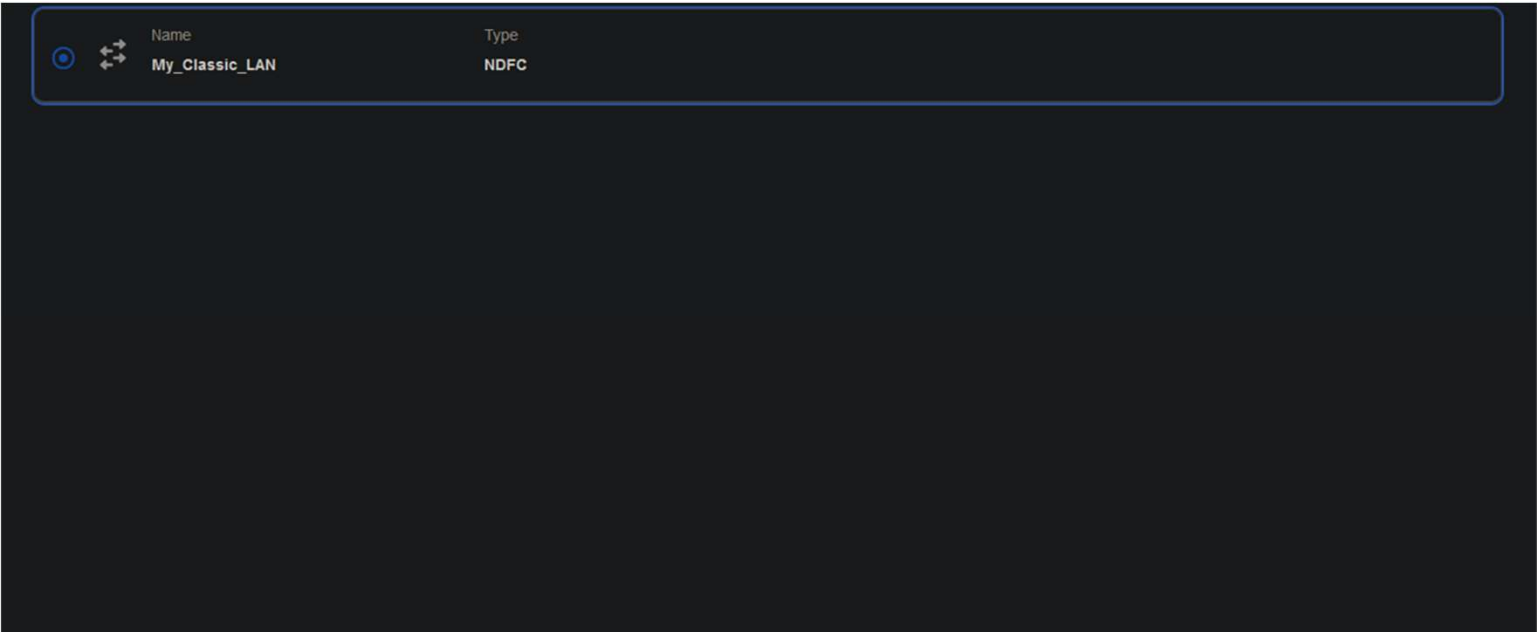
31. Navigate to **Insights** → **Overview** → **Journey**, and go through the steps, starting with **Meet Insights**



32. The second step, **Enable Insights on your Sites**, is where you will add your site to Insights



33. Select your site and click **Next**



Cancel

Back

Next

Next

34. On the **Details** tab, make sure the information is correct, then select **Next**

The screenshot shows the 'Details' tab of the Nexus Dashboard configuration interface. On the left, a sidebar contains four items: 'Add Site' (checked), 'Details' (selected), 'Configuration', and 'Summary'. The main content area is titled 'Details' and includes the instruction 'Now add a name and location to identify each site on Nexus Dashboard'. Below this is a table with two columns: 'Name' and 'Type'. The 'Name' column contains 'My\_Classic\_LAN' and the 'Type' column contains 'NDFC'. Under the 'General' section, there is a 'Name\*' field with 'My\_Classic\_LAN' and a 'Nearest Town or City\*' dropdown menu showing 'Washington, DC, United States' with a 'See on map' link. At the bottom left, there is a 'Cancel' button and a back arrow. At the bottom right, there are 'Back' and 'Next' buttons.

Next

35. On the **Configuration** tab, select **Classic** for **Fabric Type**, **Managed** for **Fabric Mode**, then choose the **Loopback** interface and **VRF** that has connectivity to the ND data network interface; finally **enter the switch credentials**

The screenshot shows the 'Configuration' tab of the Nexus Dashboard configuration interface. On the left, the sidebar shows 'Add Site' (checked), 'Details' (checked), 'Configuration' (selected), and 'Summary'. The main content area is titled 'Configuration' and includes a 'General' section. Under 'General', there is a 'Fabric Type\*' dropdown menu set to 'Classic', a 'Fabric Mode\*' dropdown menu set to 'Managed', and an 'Insights Collector Information' icon. Below these, there is a toggle for 'IPv4' and 'IPv6', with 'IPv4' being selected. At the bottom, there is a 'Loopback\*' field with the value '0'. At the bottom left, there is a 'Cancel' button and a back arrow. At the bottom right, there are 'Back' and 'Next' buttons.



IPv4 ☒ IPv6 ☐

Loopback\*  
0

VRF\*  
default

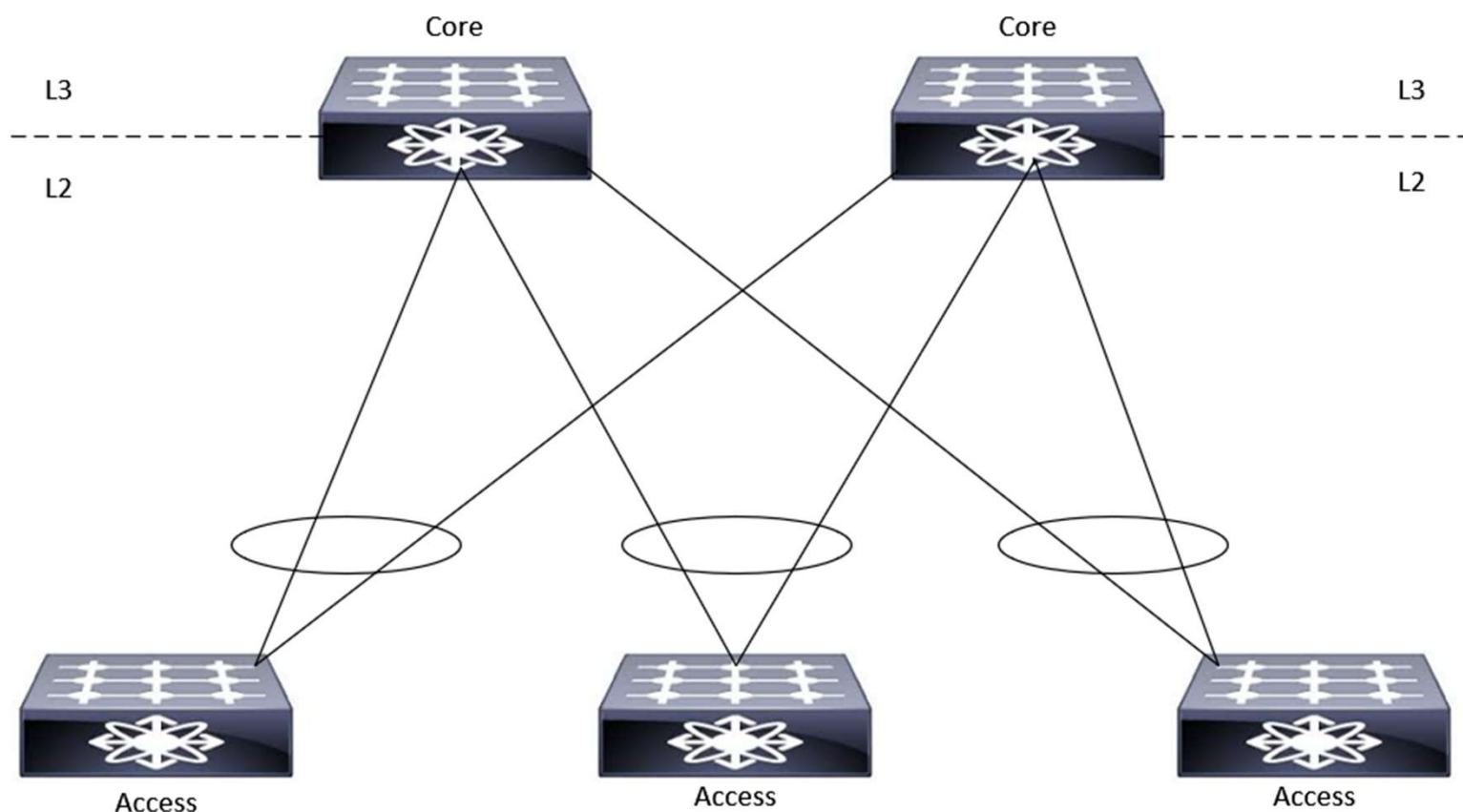
**Switch Credentials**

Username\*  
admin

Password\*  
[REDACTED]

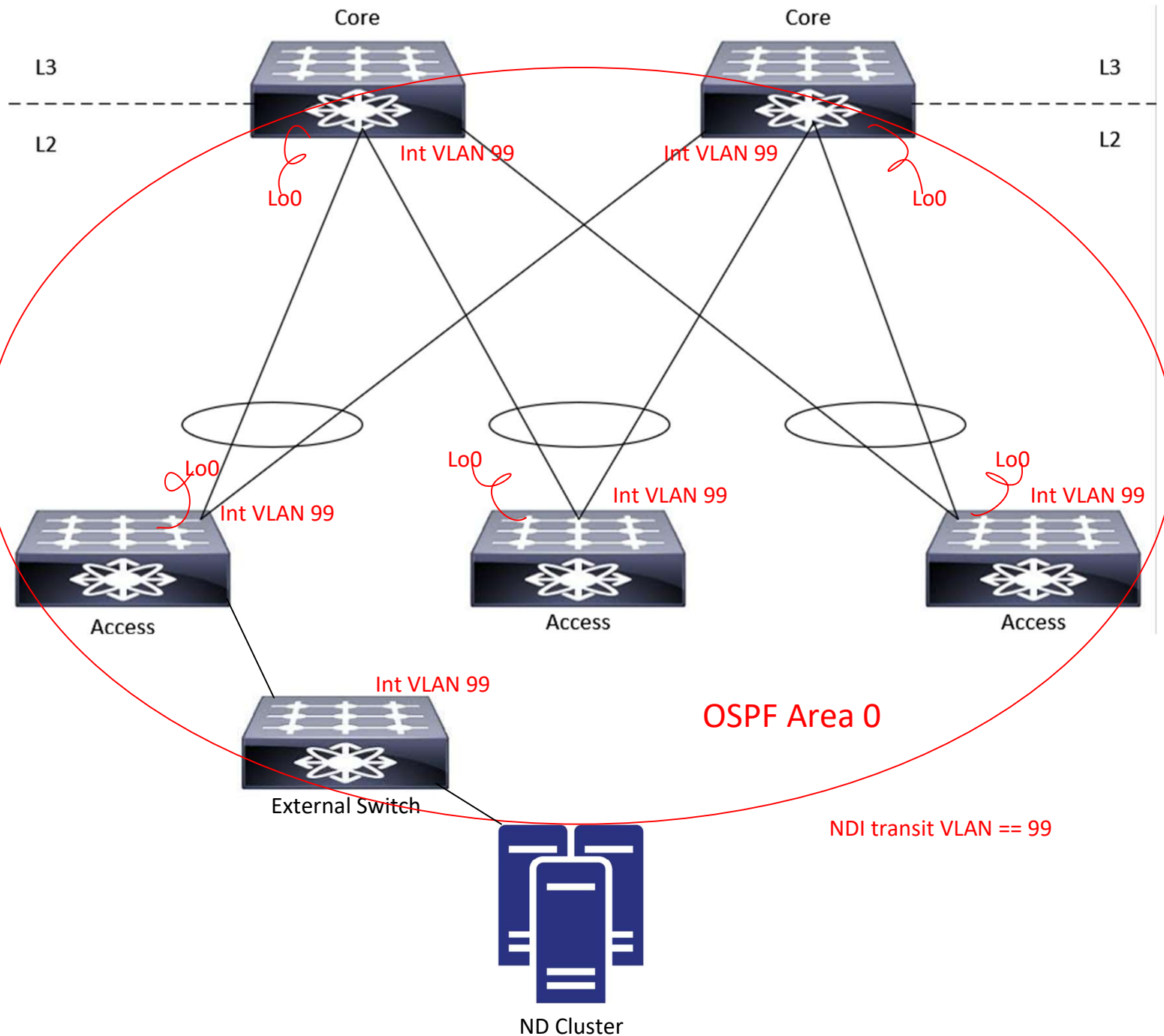
Switch Name	Switch Ip	Switch Username	Switch Password
<input type="button" value="Add Switch Credential"/>			

Now, this is where we take a detour to explain the loopback interface and VRF configuration. Recall that our topology is a collapsed core design where the access switches are purely L2, while the core switches provide L3/gateway functionalities. If the access switches are L2-only, yet they require a VRF and routed loopback interface for sending telemetry data to NDI, how will we make this work?



The answer is actually quite simple. We can create the loopback interface on all of the switches, then configure a “transit VLAN” on each switch which will be used to carry the NDI telemetry data. We will then configure an “underlay”, just like we do with *Data Center VXLAN BGP EVPN* fabrics, but instead of using routed interfaces, we will use an SVI on each switch. This allows us to keep all our links as L2 trunk links; we simply need to ensure that we add the NDI transit VLAN to the trunks. The SVI on each switch will use the same VLAN ID (e.g., 99), and then we’ll configure an IGP (e.g., OSPF) to perform route peering between each switches’ SVI and loopback interface. Either the default VRF or a user VRF may be used here, depending on how far you want to segment the traffic. Also, the configs can be made either in NDFC, using a freeform config template (preferred), or directly on the CLI of the switches. With that in mind, let’s look at a more detailed design to see how this all works.

the default VNI of a user VNI may be used here, depending on how far you want to segment the traffic. Also, the configs can be made either in NDFC, using a freeform config template (preferred), or directly on the CLI of the switches. With that in mind, let's look at a more detailed design to see how this all works.



The OSPF configuration on all the core and access switches will look something like this:

```
sh run ospf

!Command: show running-config ospf

version 10.4(2) Bios:version 05.51
feature ospf

router ospf 1

interface Vlan99
```

```

router ospf 1

interface Vlan99
 ip router ospf 1 area 0.0.0.0

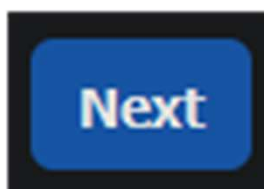
interface loopback0
 ip router ospf 1 area 0.0.0.0

```

For more information on how to implement this configuration using a freeform config template in NDFC, refer here: <https://www.cisco.com/c/dam/en/us/td/docs/dcn/ndfc/1221/articles/ndfc-enabling-freeform-configurations/enabling-freeform-configurations-on-fabric-switches.pdf>

Now that we have routed connectivity from our Classic LAN fabric to our ND cluster, we can continue on with next steps.

36. Click the **Next** button to proceed to the next step



37. On the **Summary** tab, ensure that the configuration is correct

✓ Add Site

✓ Details

✓ Configuration

4 Summary

Summary

↔

Name

My\_Classic\_LAN

Type

NDFC

Details

Name

My\_Classic\_LAN

Location

Washington, DC, United States

Configuration

General

Fabric Type

CLASSIC

Fabric Mode

Managed

Insights Collector Information

IPv4

Loopback

0

VRF

default

Switch Credentials

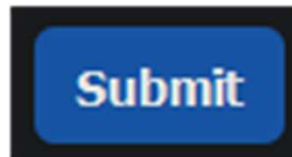
<

Cancel

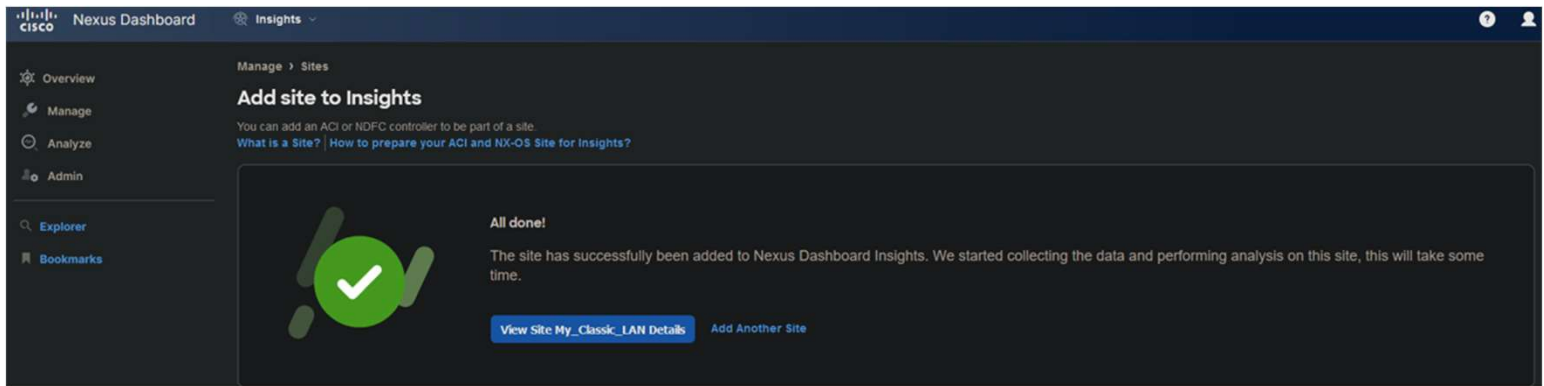
Back

Submit

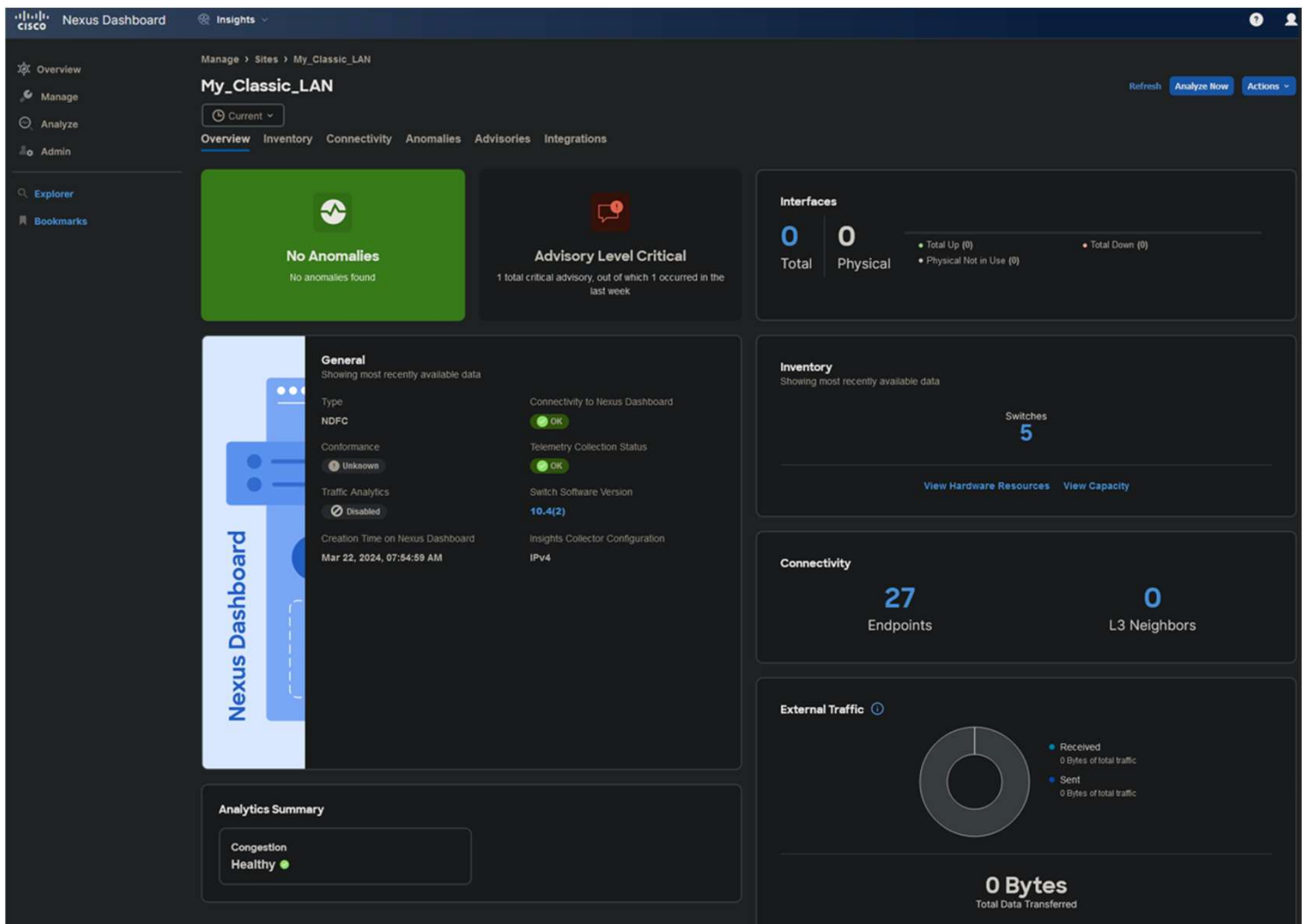
38. Click the **Submit** button



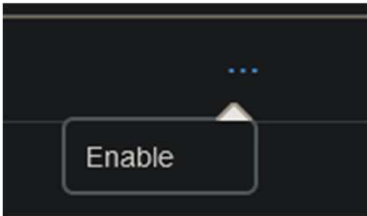
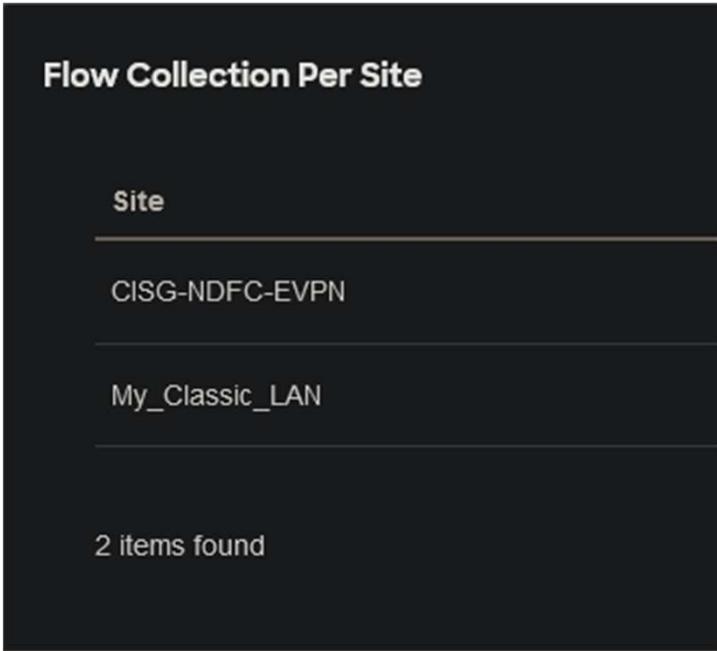
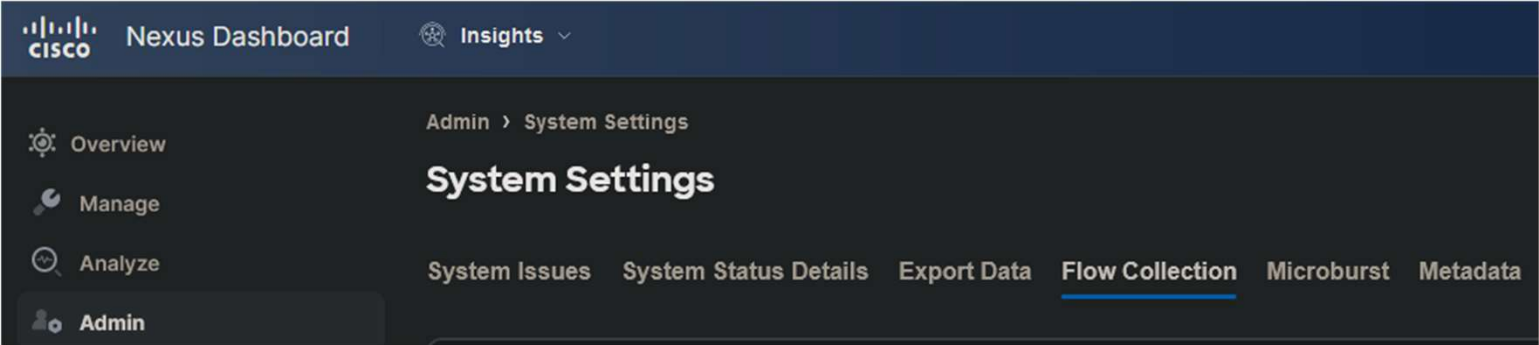
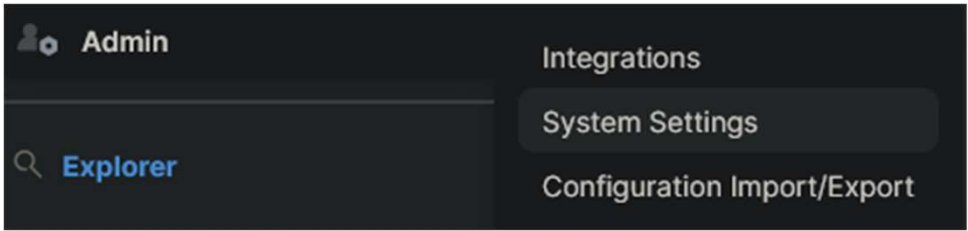
39. Click the **View Site Details** button to view your site



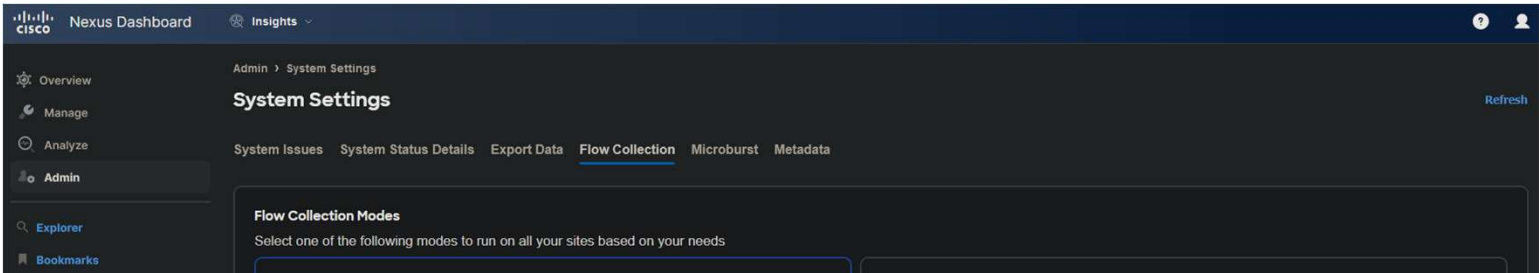
40. Ensure that **Connectivity to Nexus Dashboard**, and **Telemetry Collection Status** are **OK**



41. To enable **Traffic Analytics**, navigate to **Admin** → **System Settings** → **Flow Collection** → **Flow Collection Per Site** → Ellipsis icon next to your site → **Enable**



42. Ensure that your site shows **Enabled** in the **Collection Status** column



**Flow Collection Modes**  
Select one of the following modes to run on all your sites based on your needs

☒ **Traffic Analytics** IX-OS Only  
Automatically discover services and visualize flows based on well-known L4 ports, identifying congestion, latency, drops and more.

☐ **Flow Telemetry**  
Classic monitoring of flow collection supporting Netflow, Netflow+ and sFlow. Does not include automated service discovery and other features.

**Traffic Analytics status for the last hour** [View All Traffic Analytics Rate Statistics](#)

**Within Limit:** 5,100 Conversations/min  
Received System Conversation Rate: 2 Conversations/min

**No Drops** Traffic Analytics Record Drops

**Flow Collection Per Site**

Site	Collection Status	Node Status
[Redacted]	[Redacted]	[Redacted]
My_Classic_LAN	Enabled	5 0 0 0

2 items found Rows per page 10 < 1 >

**Flow Collection Per Site**

Site	Collection Status	Node Status
[Redacted]	[Redacted]	[Redacted]
My_Classic_LAN	Enabled	5 0 0 0

2 items found Rows per page 10 < 1 >

43. Navigate back to **Manage** → **Sites**, and click on your site

**Nexus Dashboard** **Insights**

Manage > Sites

**Sites** [Refresh](#)

[Online Sites](#)

Filter by attributes [Add Site](#)

Name	Anomaly Level	Advisory Level	Type	Connectivity to Nexus Dashboard	Software Version	Creation Time on Nexus Dashboard
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
My_Classic_LAN	Major	Critical	NDFC	OK	10.4(2)	Mar 22, 2024, 07:54:59 AM

2 items found Rows per page 10 < 1 >

44. In the **General** field, ensure that **Traffic Analytics** shows as **Healthy**; by this time **Conformance** should also show as **Healthy**

**Nexus Dashboard** **Insights**

Manage > Sites > My\_Classic\_LAN

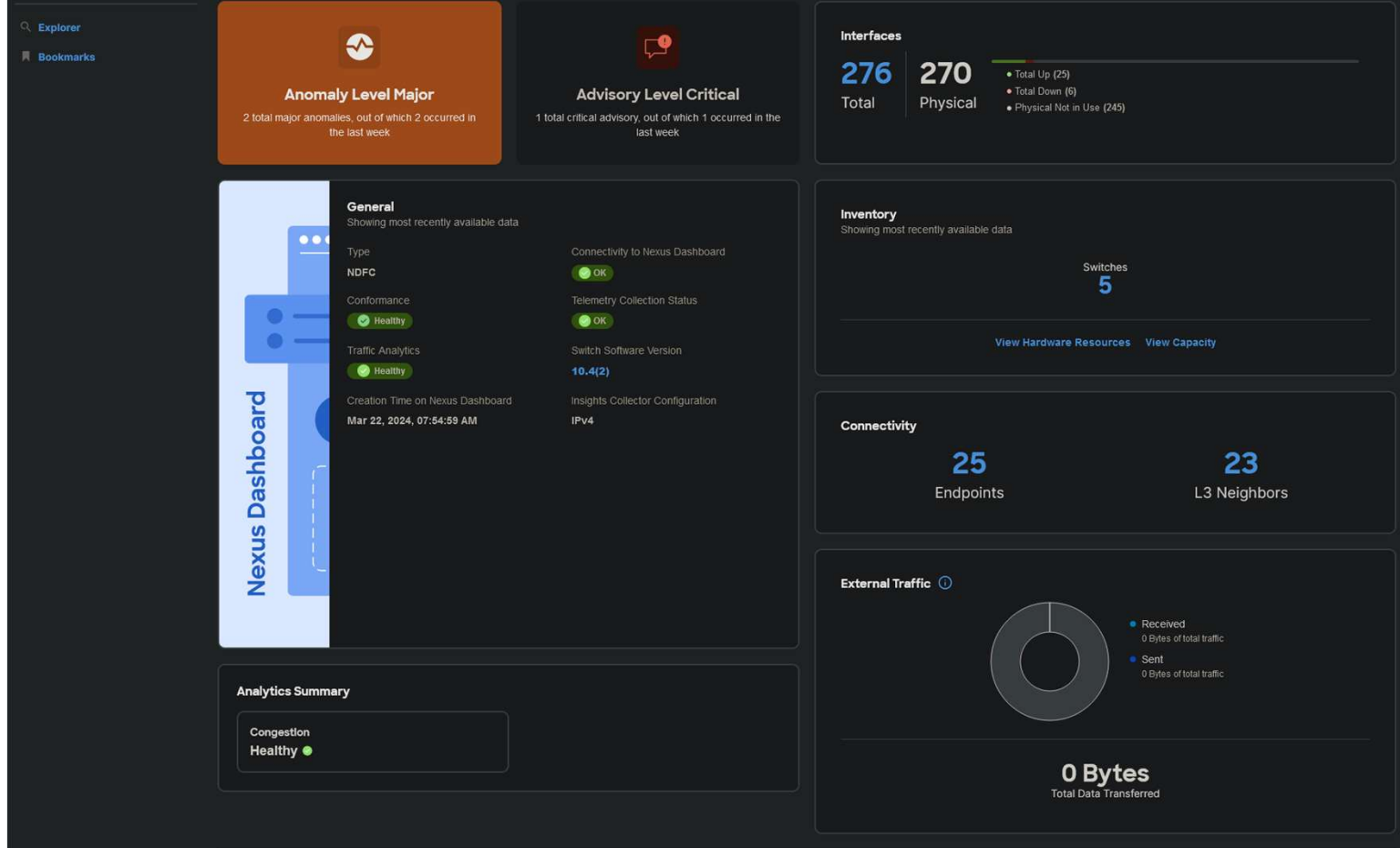
**My\_Classic\_LAN** [Refresh](#) [Analyze Now](#) [Actions](#)

[Current](#)

[Overview](#) [Inventory](#) [Connectivity](#) [Anomalies](#) [Advisories](#) [Integrations](#)

**Interfaces**

276 270 Total Up (25)



Congratulations! You have now created an NDFC-managed Classic LAN site and added it to NDI!

\*Special thanks to Chris Merkel, SE, Cisco Systems, Inc. for providing the solution here 😊

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