

Deployment Guide

Infoblox Network Insight Integration with Cisco ACI

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Introduction

Cisco ACI (Application Centric Infrastructure) is Cisco's SDN (software-defined networking) solution for data centers. This deployment guide illustrates how to configure Infoblox's Network Insight to discover Cisco ACI components and end hosts.

Overview



In addition to discovering various network devices and hosts in Network Insight, you can now discover assets within Cisco ACI such as:

- Tenants and VRFs
- IP subnets
- Bridge Domains
- Fabric Nodes
- APIC controller
- EPG
- Application profile (NetMRI only)
- End hosts
- Requirements

The following items are required for Cisco ACI Integration in NIOS:

- Network Insight license.
- Infoblox Network Discovery Appliance.
- Infoblox NIOS 8.2.1 or later is required. NIOS 8.5.0 is the advised release

The following items are required for Cisco ACI Integration in NetMRI:

- NetMRI license.
- Infoblox NetMRI Appliance.
- Infoblox NetMRI 7.2.1 or later is required. NetMRI 7.4 is the advised release

Deployment Instructions

Note: This deployment guide covers only Cisco ACI discovery deployment instructions. Please review the Network Insight Deployment Guide or NIOS Administrator's Guide for Network Insight configuration instructions. Please review the NetMRI Administrator Guide for NetMRI configuration instructions. Configure Cisco APIC information for Network Insight.

Note: Refer to the NIOS 8.2 Administrators Guide for Network View configuration.

1. Navigate to Grid Grid Manager Discovery. Click on the Discovery member.

Infoblox 📚	Dashboards	Data Manage	ement	Smart Folders	Grid	Administration		Q Search	admin	•
	Grid Manager	Upgrade	Licenses	HSM Group	Devi	Support Ecosystem				
Infoblox DHCP DNS TFTP	HTTP (File Dist	FTP	DFP N	ITP bloxTools	Disc	ry Subscriber Collection			4 «	
Discovery 2 2 Quick Filter None	Off Fi Group By Choose of	iter On	Show Filter	+						
🗹 🕨 🔳 🤹 🖶	rvice Status IPv4	Address	Comment	Site			Go to	Go		
probe1.com Dis	scovery Service 172.	19.18.114								
V 🔶 probe2.com Dis	scovery Service 172.	19.18.113								

2. Click on the **Edit** button on the **Services** screen. Click on the **SDN/SD-WAN** button. Select the Cisco ACI entry and click on the **EDIT** button.

probe2.com (Member Dis	covery Properties Edite	or)			×
	Basic				0
General Credentials Seed	Member Role should be pre-	defined as Probe or Conso	idator-Probe to add SDN	configurations. ♣ ◄ 🕜 🛅	
SDN/SD-WAN	Add Cisco ACI Configurati *Fabric Name	ion aci_new	200 J	×	
	*Addresses Cisco APIC Addresses 172.19.0.220	+ s	 ■ ■ ■ 		
	*Protocol	HTTP			
	*Network View	default			
	*Username	admin			
	Comment				
Cancel				Save & Clo	ose 🗸

Note: Talk with your Cisco ACI administrator to get the IP address, username, and password. The Cisco ACI administrator can also provide a CA certificate from the APIC.

3. Enter the IP address of the Cisco APIC. Note: multiple entries are supported for redundancy

- 4. Select the Protocol which is either HTTP or HTTPS. If you decide to use HTTPS, you will need to add a CA certificate.
- 5. Select the Network View.
- 6. Enter the Username for the APIC login.
- 7. Enter the Password for the APIC login.
- 8. Click on the Save button and then the **Save & Close** button.

Configure Cisco APIC information for NetMRI.

Note: Refer to the NetMRI Administrators Guide for Network View configuration.

- 1. Log into the NetMRI GUI.
- 2. Click on the Settings wheel.
- 3. Go to Setup Discovery Settings APIC.
- 4. Click on the 'New' button. Fill in the fields for: APIC controller address, protocol, network view, username, and password.

Settings						~
Discovery Settings				?	» User Admin	+
Ranges Static IPs Device New Edit Delete Import	e Hints Seed Routers APIC Show Credentials Discover Nov			J 2 Search	Setup	-
APIC Controller Address:	10.40.19.10	Username:	admin		 Settings Summary Setup Wizard Scan Interfaces 	
Protocol:	HTTP	Password:	•••••		 Network Views Collection and Groups 	
INELWORK VIEW:	ienant/vkr	v	Cancel	Add & Discover	Discovery Settings Credentials Device Support Bundles	s

5. Click on 'Add & Discover' or 'Add' button.

Settings			
Discovery Settings			? ×
Ranges Static IPs Device Hints	Seed Routers APIC		User Admin +
New Edit Delete Import Show Cred	entials Discover Now		Search –
	Natural 16 m	Protocol	E Settings Summary
IP Address A	Network View	Protocol	Setup Wizard
10.40.19.10	lenant/VRF	http	Network Views
			Collection and Groups
			Discovery Settings
			E Credentials
			E Device Support Bundles
			MIB Management
			Port List
			E Device Collection Status
			NIOS IPAM Sync
			Issue Analysis +
			Notifications +
			General Settings +
A Page 1 of 1 Di	splaying 1 - 1 of 1		Database Settings +
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Viewing Discovered Data for Network Insight.

Below is a table showing the mappings of ACI specific components into IPAM objects.

ACI	Network Insight
Fabric Node (leaves and spine)	Device record under Devices tab
APIC Controller	Device record under Devices tab
Tenant	Tenant attribute for Networks and IP addresses under IPAM tab
Bridge Domain	Bridge Domain attribute for Networks and IP addresses under IPAM tab
EPG	EPG attribute for IP addresses under IPAM tab

After waiting about 15 minutes for the discovery to complete, you can now view your discovered devices.

1. Navigate to **Data Management Devices**. Change to the network view that was used to enter the Cisco ACI details. For example, network view default was chosen.

Infoblox 📚	Dashi	boards	Data Management	Smart Folders	Grid	Administration							Q Search	admin	•
	IPAM	VLANs	Super Host	Devices DHC	DNS	File Distribution									
🐂 default 🛛 Ne	work View 🚦													∎ ≫	0 «
Quick Filter None	×	Off Filter	On Show Filter												
→ @ ±	0										Go to		Go		
🖻 📃 IP	Address Na	me	Device Type	Model	Vendor	Device Version	Chassis S/N	Location	Description	Discover Now	Managed	Site			
17	2.19.18.1 uni	known	Router												
□ = 20	.0.88.65 spi	ne201	SDN Element	N9K-C9332C	Cisco ACI	n9000-14.0(1h)	FDO22422JP8								
□ = 17	2.19.0.220 ap	ic1	SDN Controller	APIC-SERVER	Cisco ACI	4.1(1i)	WZP232210FY								
20	.0.88.64 lea	f101	SDN Element	N9K-C93180Y	Cisco ACI	n9000-14.0(3d)	FDO23191VJW								
20	.0.88.66 lea	f102	SDN Element	N9K-C93180Y	Cisco ACI	n9000-14.0(3d)	FDO23191VHX								

- 2. In the previous screen shot, you can now see the SDN Controller and 3 SDN elements; leaf01, leaf02, and spine201.
- 3. You can drill down on the SDN Controller and SDN elements to gather information on interfaces, networks, IP addresses, assets, and components. Below are screen shots of each for one of the leaf nodes:

Infoblox 📚		Dashboards D	ata Management	Smart Folders	Grid	Administration						م	Search	admin 👻
		IPAM VLANs	Super Host	Devices DHCP	DNS	File Distribution								
Devices Home leaf101 (C	Cisco ACI Networks	20.0.88.64) IP Addresses A:	Device 💉 📮 ssets Compone	nts										₽ ≪ ≪
Quick Filter	None	V Off Filter C	On Show Filter											
→ œ ;	1 8										Go to	•••	Go	
	Name	IP Address	VRF Name	VRF Description	VRF RD	MAC Address	VLAN ID	VLAN Name	Port Type	Port Speed	Admin Status	Operation Status	Trunk	
	eth1/51.3								propVirtual		Up		Off	
	lo0	20.0.88.64							propVirtual		Up		Off	
	eth1/35					00:3A:9C:8A:5A:03				25 Gbps	Up	Down	On	
	tunnel11								tunnel		Up	Up	Off	
	eth1/21					00:3A:9C:8A:59:F5				25 Gbps	Up	Down	On	
	eth1/18					00:3A:9C:8A:59:F2				25 Gbps	Up	Down	On	
	eth1/17					00:3A:9C:8A:59:F1				25 Gbps	Up	Down	On	
	po1					00:3A:9C:8A:5A:40	100 1000	qa_barem qa_barem	propVirtual		Up	Down	Off	
	tunnel8								tunnel		Up	Up	Off	
	eth1/52.4								propVirtual		Up		Off	
	eth1/11					00:3A:9C:8A:59:EB				25 Gbps	Up	Down	On	
	eth1/38					00:3A:9C:8A:5A:06				25 Gbps	Up	Down	On	
	eth1/6					00:3A:9C:8A:59:E6	1000	qa_barem	1000base-T	1 Gbps	Up	Up	Off	
	vlan24	Multiple	qa_baremetal		0:0	00:22:BD:F8:19:FF			propVirtual		Up	Up	Off	
	eth1/25					00:3A:9C:8A:59:F9				25 Gbps	Up	Down	On	
◀ ▶	N C													

Inf	oblox 📚		Dashboards Dat	a Management	Smart Folders	Grid	Administration	Q Search	admin	n 🔻
		ı	PAM VLANs	Super Host	Devices DH	CP DNS	File Distribution			
- ,	evices Hom	ie.							a	0
»	eaf101	~ (Cisco ACI 20	0.0.88.64)	Device 🧪 📮					«	«
	Interfaces	Networks	P Addresses Ass	ets Compone	nts					
	Quick Filter	r None	▼ Off Filter On	Show Filter	r					
	a a	⊠ î + ±	0					Go to Go		
		Network	VRF Name	VRF Description	VRF RD	Comment	Managed			
		15.15.15.0/24	qa_baremetal		0:0		No			
		88.88.88.0/24	qa_baremetal		0:0		No			
		17.17.17.0/24	qa_baremetal		0:0		No			
		8.8.8.0/24	qa_baremetal		0:0		No			
		7.7.7.0/24	qa_baremetal		0:0		No			
		11.11.11.0/24	qa_baremetal		0:0		No			
		34.34.34.0/24	qa_baremetal		0:0		No			
		20.0.0.32/32								
		12.12.12.0/24	qa_baremetal		0:0		No			
		77.77.77.0/24	qa_baremetal		0:0		No			
		14.14.14.0/24	qa_baremetal		0:0		No			
		18.18.18.0/24	qa_baremetal		0:0		No			
		20.0.0/27					No			
		19.19.19.0/24	qa_baremetal		0:0		No			
		10.10.10.0/24	qa_baremetal		0:0		No			
	N • •	B B								

https://172.19.18.119/ui/xINW_mFTDS-dNkAp1I6t_g/xINc9/t_gfb#

Infoblo	X 📚		Dashboards	Data Managem	ent Smart Fo	lders Grid	Administration							Q Search	admin	•
			IPAM VLANs	s Super Hos	Devices	DHCP DNS	File Distribution									
Device	s Horne				_										≫ BÞ	8 «
leat	101 (C	JISCO ACI I	20.0.88.64)	Device J	monente											
Quic	k Filter	Nee	or File	er On Shor	w Filter										-	
Guio		None			in the											
→	1	3										Go to		Go		
	=	IP Address	VRF Name	VRF Desc	ription VRF RD	Interface	Name MAC Add	ress VLAN	ID VLAN Na	ne Admin Status	Operation Status	Managed	Site			
		15.15.15.1	qa_baremetal_		0:0	vian21	00:22:BD:F	8:1		Up	Up	No				
	=	17 17 17 17	ga_baremetal		0.0	vian21	00:22:BD:F	8-1		Un	Un	No				
		8.8.8.1	ga_baremetal		0:0	vlan21	00:22:BD:F	8:1		Un	Up	No				
	=	7.7.7.1	ga baremetal		0:0	vlan21	00:22:BD:F	8:1		Up	Up	No				
	=	11.11.11.11	qa_baremetal		0:0	vlan24	00:22:BD:F	8:1		Up	Up	No				
		34.34.34.34	qa_baremetal_		0:0	vlan21	00:22:BD:F	8:1		Up	Up	No				
		20.0.0.32				lo1023				Up		No				
	=	12.12.12.12	qa_baremetal_		0:0	vlan21	00:22:BD:F	8:1		Up	Up	No				
	=	77.77.77.77	qa_baremetal_		0:0	vlan21	00:22:BD:F	8:1		Up	Up	No				
	=	14.14.14.1	qa_baremetal_		0:0	vlan21	00:22:BD:F	8:1		Up	Up	No				
	=	18.18.18.18	qa_baremetal_		0:0	vlan21	00:22:BD:F	8:1		Up	Up	No				
	=	20.0.0.30				vlan8	00:22:BD:F	8:1		Up	Up	No				
	=	19.19.19.19	qa_baremetal_		0:0	vlan21	00:22:BD:F	8:1		Up	Up	No				
	=	10.10.10.10	qa_baremetal_		0:0	vlan21	00:22:BD:F	8:1		Up	Up	No				
K		N C														
Infoblo	ox 📚		Dashboards	Data Managen	nent Smart F	olders Grid	Administration							Q Search	admi	in 👻
			IPAM VLAN	s Super Ho	st Devices	DHCP DNS	File Distributio									
Device	s Home														æ	9
» leaf	101 (0	Cisco ACI	20.0.88.64)	Device 🥜	R										«	: «
Inter	faces	Networks	IP Addresses	Assets Co	omponents											
Quid	k Filter	None	✓ Off Filb	ler On Sho	ow Filter											
1	e											Go to		••• Go		
		Name	Inte	erface Name	VRF Name	VRF Description	VRF RD	IP Address	Туре	Asset MAC Add	ress VLAN ID	VLAN Nam	e Admin Status	Operation St	atu	
		spine201	eth	1/49				20.0.88.65	SDN Element	A8:B4:56:B0:04:A	5		Up	Up		
		apic1	eth	1/1				172.19.0.220	SDN Controller	C4:F7:D5:F6:99:9	4		Up	Up		

Info	blox 📚	Dashboards Da	ta Management Smart	Folders Grid Admi	Inistration	Q Search	admin	•
		IPAM VLANs	Super Host Devices	DHCP DNS Fil	le Distribution			
> Dev	vices Home af101 (Cisco ACI 2 Iterfaces Networks	D.O.88.64) P Addresses As	Device 💉 📮 isets Components				4	© «
c	Quick Filter None	V Off Filter O	In Show Filter					
2	1 .10					Go to Go		
	Name	Description	Class	Serial Number	Model			
E	48x10/25G	48x10/25G	supervisor	FDO23191VJW	N9K-C93180YC-FX			
E	REAR	FANTRAY	fan	n/a	NXA-FAN-30CFM-F			
E	PSU	PSU	power	DCC2252716A	NXA-PAC-500W-PE			
E	PSU	PSU	power	DCC225271S9	NXA-PAC-500W-PE			
E	6x40/100G Switch	6x40/100G Sw	linecard	FDO23191VJW	N9K-C93180YC-FX			
E	REAR	FANTRAY	fan	n/a	NXA-FAN-30CFM-F			
E	Nexus C93180YC-FX ch	Nexus C93180	chassis	FDO23191VJW	N9K-C93180YC-FX			
E	REAR	FANTRAY	fan	n/a	NXA-FAN-30CFM-F			
E	REAR	FANTRAY	fan	n/a	NXA-FAN-30CFM-F			

4. Navigate to **Data Management IPAM** to view the discovered networks. Take note of the networks with bridge domains and tenants.

IPAM Network View	VLANs Super Host Off Filter On Sho	Devices	DHCP	DNS	File Distribution								
Network View 📮	off Filter On Sho												
None 🔽 📔	off Filter On Sho												5
☞		w Hilter	Toggle flat vi	iew									1
										0	a to	60	
Network +	Comment	PAM Utilization	Discover	Now	Discovery Engine	Discovered	Discovered VI A	Bridge Domain	Tenant	VRF Name	VBE Descri V	RE BD BGP A	s
+		0.0%	Dictorer		Network Insight	5.000 TO TO TO TO	5100010100 125 111	ga br domain	na haremetal	ga barem	0.0		
+ 0.0.0.0/24		0.3%			Network Insight			ga br domain 2	ga baremetal	ga barem	0:0		
+ 10 10 10 0/24		0.3%			Network Insight			ga br domain	ga baremetal	ga barem.	0.0		
+ 10.10.10.0/24		0.3%			Network Insight			ga br domain 2	ga_baramatal	ga_barem	0.0		
		0.3%			Notwork Insight			ga br domain	ga_baramatal	qa_barom	0.0		
12.12.12.0/24		0.3%			Network Insight			qa_or_domain	qa_baremetal	qa_baren	0.0		
# 14.14.14.0/24		0.3%			Network insight			qa_or_domain	qa_baremetal	qa_barem	0.0		
e 15.15.15.0/24		0.3%			Network Insight			qa_br_domain	qa_baremetal	qa_barem	0:0		
+ 16.16.16.0/24		0.3%			Network Insight			qa_br_domain	qa_baremetal	qa_barem	0:0		
+ 17.17.17.0/24		0.3%			Network Insight			qa_br_domain	qa_baremetal	qa_barem	0:0		
+ 18.18.18.0/24		0.3%			Network Insight			qa_br_domain	qa_baremetal	qa_barem	0:0		
+ 19.19.19.0/24		0.3%			Network Insight			qa_br_domain	qa_baremetal	qa_barem	0:0		
e 20.0.0.0/27		3.3%			Network Insight								
4 34.34.34.0/24		0.3%			Network Insight			qa_br_domain	qa_baremetal	qa_barem	0:0		
# 77.77.77.0/24		0.3%			Network Insight			qa_br_domain	qa_baremetal	qa_barem	0:0		
e 88.88.88.0/24		0.3%			Network Insight			qa_br_domain	qa_baremetal	qa_barem	0:0		
	 9.9.9.024 9.9.9.024 10.10.10.024 11.11.11.024 12.12.12.024 12.12.12.024 15.15.15.024 15.15.15.024 16.16.16.024 17.17.17.024 18.18.18.024 19.19.19.024 19.19.19.024 20.0.027 34.43.4.024 37.77.77.024 38.88.88.024 	9.9.9.024 () 10.10.10.024 () 11.11.11.024 () 12.12.12.024 () 15.15.15.024 () 16.16.16.024 () 17.17.17.024 () 19.19.19.024 () 20.0.0277 () 34.434.024 () 58.88.80.024 ()	9.9.9.024 0.3% 10.10.10.024 0.3% 11.11.11.024 0.3% 12.12.12.024 0.3% 15.15.15.024 0.3% 15.15.15.024 0.3% 16.16.16.024 0.3% 18.18.18.024 0.3% 19.19.19.024 0.3% 20.00.027 3.3% 34.34.34.024 0.3% 77.77.70.024 0.3% 68.88.88.024 0.3%	9.9.9.024 0.3% 9.9.9.024 0.3% 10.10.10.024 0.3% 11.11.11.024 0.3% 12.12.12.024 0.3% 12.12.12.024 0.3% 15.15.15.024 0.3% 16.16.16.024 0.3% 18.18.18.024 0.3% 19.19.19.024 0.3% 20.00.027 3.3% 34.34.34.024 0.3% 0.3% 0.3%	9.9.9.024 0.3% 10.10.10.024 0.3% 11.11.11.024 0.3% 12.12.12.024 0.3% 14.14.14.024 0.3% 15.15.15.024 0.3% 16.18.18.024 0.3% 18.18.18.024 0.3% 19.19.19.024 0.3% 34.34.34.024 0.3% 35.88.88.024 0.3%	9.9.9.0/24 0.3% Network Insight 10.10.10.0/24 0.3% Network Insight 11.11.11.0/24 0.3% Network Insight 12.12.12.0/24 0.3% Network Insight 13.15.15.15.0/24 0.3% Network Insight 15.15.15.0/24 0.3% Network Insight 15.15.15.0/24 0.3% Network Insight 15.15.15.0/24 0.3% Network Insight 18.18.18.0/24 0.3% Network Insight 19.19.19.0/24 0.3% Network Insight 34.34.34.0/24 0.3% Network Insight 34.34.34.0/24 0.3% Network Insight 34.34.34.0/24 0.3% Network Insight 36.88.88.0/24 0.3% Network Insight	9.9.9.024 0.3% Notwork Insight 10.10.10.024 0.3% Notwork Insight 11.11.11.024 0.3% Notwork Insight 12.12.12.024 0.3% Notwork Insight 13.15.15.024 0.3% Notwork Insight 15.15.15.024 0.3% Notwork Insight 20.00.027 3.3% N	9.9.9.024 0.3% Network insight 10.10.10.024 0.3% Network insight 11.11.11.024 0.3% Network insight 12.12.12.024 0.3% Network insight 14.14.14.024 0.3% Network insight 15.15.15.024 0.3% Network insight 16.16.16.024 0.3% Network insight 17.17.17.024 0.3% Network insight 18.18.18.024 0.3% Network insight 19.19.19.024 0.3% Network insight 20.00.027 3.3% Network insight 34.34.34.024 0.3% Network insight 35% Network insight 0.3%	9.9.9.024 0.3% Network Insight qa_br_domain_2 10.10.10.024 0.3% Network Insight qa_br_domain_2 11.11.11.024 0.3% Network Insight qa_br_domain_2 12.12.12.024 0.3% Network Insight qa_br_domain_2 15.15.15.024 0.3% Network Insight qa_br_domain 16.15.15.024 0.3% Network Insight qa_br_domain 16.16.16.024 0.3% Network Insight qa_br_domain 17.17.17.024 0.3% Network Insight qa_br_domain 18.18.18.024 0.3% Network Insight qa_br_domain 19.19.19.024 0.3% Network Insight qa_br_domain 20.00.027 3.3% Network Insight qa_br_domain 34.34.34.024 0.3% Network Insight qa_br_domain 7777.77.024	9.9.9.024 0.3% Network insight qa_br_domain_2 qa_baremetal 10.10.10.0024 0.3% Network insight qa_br_domain_2 qa_baremetal 11.11.11.024 0.3% Network insight qa_br_domain_2 qa_baremetal 12.12.12.024 0.3% Network insight qa_br_domain qa_baremetal 14.14.14.024 0.3% Network insight qa_br_domain qa_baremetal 15.15.15.024 0.3% Network insight qa_br_domain qa_baremetal 16.15.15.024 0.3% Network insight qa_br_domain qa_baremetal 16.15.15.024 0.3% Network insight qa_br_domain qa_baremetal 18.16.16.024 0.3% Network insight qa_br_domain qa_baremetal 18.18.18.024 0.3% Network insight qa_br_domain qa_baremetal 19.19.19.024 0.3% Network insight qa_br_domain qa_baremetal 20.00.027 3.3% Network insight qa_brenetal qa_baremetal 20.	9.9.9.024 0.3% Network insight qa_br_domain_2 qa_baremetal qa_baremetal	9.9.9.024 0.3% Network insight qa_br_domain_2 qa_baremetal qa_barem 0.3 10.10.10.024 0.3% Network insight qa_br_domain_2 qa_baremetal qa_baremetal	Network insight qa_br_domain_2 qa_baremetal qa_barem 0.0 10.10.10.0024 0.3% Network insight qa_br_domain qa_baremetal qa_barem 0.0 11.11.11.024 0.3% Network insight qa_br_domain qa_baremetal qa_barem 0.0 12.12.12.024 0.3% Network insight qa_br_domain qa_baremetal qa_barem 0.0 14.14.14.024 0.3% Network insight qa_br_domain qa_baremetal qa_barem 0.0 15.15.15.024 0.3% Network insight qa_br_domain qa_baremetal qa_barem 0.0 16.16.15.024 0.3% Network insight qa_br_domain qa_baremetal qa_barem 0.0 16.16.15.024 0.3% Network insight qa_br_domain qa_baremetal qa_barem 0.0 17.17.17.024 0.3% Network insight qa_br_domain qa_baremetal qa_barem 0.0 19.19.19.024 0.3% Network insight qa_br_domain

Viewing Discovered Data for NetMRI.

1. After upgrading NetMRI to 7.2.1 and above, a device group called ACI is used to hold all of the Cisco ACI components such as the APIC, leaves, and spine. Select the ACI device group from the Device Group panel.

QANET-SA53		FULLN	м			F	ndIT Q User: admin	Logout
Infobiox 💸 Dashboard Network Analys	is Network Explor	rer Config Management	Reports				み 谷	0
Inventory Summai	ies Topology Dis	scovery Switch Port Manag	ement				Select Device Group	» 0
ACI 2017-09-28						0	Search	
(* Hel 2011 00 20							- 🍓 All Devices (38)	
Devices -	All Devices						ACI (4)	
Infrastructure Devices	Search					Views 🔻 Filters 🔍 💭	Network w/o SNMP (6)	
Device Components	IP Address A No	twork View Device Name	Туре	Vendor	Model		Routing (19)	
Connected End Hosts	<u>10.40.19.10</u> Ter	nant/VRF apic1	SDN Controller (99%)	Cisco	APIC-SERVER-M1		UNKNOWN (3)	
All Devices	10.40.19.12 Ter	nant/VRF LEAF1	SDN Element (99%)	Cisco	N9K-C9396PX			
	10.40.19.13 Ter	nant/VRF LEAF2	SDN Element (99%)	Cisco	N9K-C9396PX			
	10.40.19.14 Ter	nant/VRF SPINE	SDN Element (99%)	Cisco	N9K-C9336PQ			
Virtual Devices +								
Interfaces +								
OSs +								
Models +	4 4 Page 1	of 1 $ \rightarrow \rightarrow $ Displaying 1 -	4 of 4			Updated at 2017-09-28 15:48:30		
© 2017 Infoblox, Inc. All rights reserved.							2017-09-28	3 15:48

2. Navigate Network Explorer Inventory Devices All Devices.

3. If you click on the IP address, you will get the device viewer for that IP address. You will then be able to view the EPG, Bridge Domains, VLANs and interfaces.

LEAF1 10	.40.19.12 (Physical De	vice) Tenant/VRF			
Type: O/S Version: Up Time: Last Communi Discovery Blac	SDN Element (9 n9000-12.2(1n) 2d 08h 54m 33s cation: 2017-09-28 15:4 kout: N/A	9%) Vendor: Model: SNMP Status: 5:17 MAC Address: Change Blackout	Cisco N9K-C9396PX Enabled (Unknown Communit 00:22:BD:F8:19:FF : N/A	ARRANA ARAAA ARRAAARAAA	7
EPG			8	»	
EPG				Network Analysis	+
Search			Views 🔻 Filters 🛛 💐 🍠	Device/Network Explorer	+
Tenant	Application profile	ERG		ACI	-
Tenanca	Application prome	LEFG VIN EDG		EPG	
iofro		dofoult		E bridge bomains	
mira	VM Tapant Ann Brofile	VMERC			
NotMRL Tonget	dev-ee	VM-EFG			
NetMRI-Tenant	dev-ap	dev-epg-z			
NetMRI-Tenant	dev-ap	netmri-eng			
NL-Tenant	NLAR	ni-main-epg			
teet	NIOS-ANR				
test	NIOS-ANP	DDI-1			
				Interfaces Router Switch	+++++++++++++++++++++++++++++++++++++++
🛛 🔍 🗍 Page	1 of 1 🕨 🕅 Displayi	ng 1 - 9 of 9	Updated at 2017-09-28 15:52:40	Settings & Status	+

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4. If you click on the Network View, you will be able to see the VRFs.

Name: Description	Tenant/VRF		
Associated VRFs	5		
Search			Views - Filters Assign 💐 🌊
Device Name 🔺	VRF Name	VRF RD	
LEAF1	black-hole	0:0	
LEAF1	management	0:0	
LEAF1	NetMRI-Tenant:NetMRI-VRF	0:0	
LEAF1	common:Infoblox-PN	0:0	
LEAF1	overlay-1	0:0	
LEAF2	NetMRI-Tenant:NetMRI-VRF	0:0	
LEAF2	NetMRI-Tenant:netmri-vrf-2	0:0	
N A Page	1 of 2 🕨 🕅 Displaying f	1 - 10 of 17	Updated at 2017-09-28 15:50:23
Imported VRFs			
Search			Views - Filters 💐 🔁
Route Target 🔺	Device Name VRF Name	VRF RD	
N A Page	1 of 1 🕨 🕅 No data to c	display	Updated at 2017-09-28 15:50:23

5. When clicking on Summaries Network Views, you will be able to see details of the network view.

QANET-SA53	FULINM	FindIT Q User: admin Logout
Infoblox 💸 Dashboard Network Analys	is Network Explorer Config Management Reports	× ‡ 0
Inventory Summar	es Topology Discovery Switch Port Management	Select Device Group
A CL 2017 00 29		Search
AGI 2017-09-20		- 🎇 All Devices (38)
Routes +	VRFs - common:Infoblox-PN	ACI (4)
Subnets	Search Views • Filters 🐺 🔁	Network w/o SNMP (6)
VIANC	VRF Name KVRF Network View VRF Description VRF RD Device Name IP Address Network View	Routing (19)
Rauto Torrecto	common:Infobiox-PN Tenant/VRF 0:0 LEAF1 10.40.19.12 Tenant/VRF	Switching (16)
	common:Infoblox-PN Tenant/VRF 0:0 LEAF2 10.40.19.13 Tenant/VRF	
nskr/vkkr Groups +		
Ports +		
NIOS Grids +		
Network Views +		
VRFs -		
Search 💐 🎜		
VRF Name VRF Description		
View All VRFs		
(default)IOS		
black-hole		
common:Infoblox-PN		
management		
NetMRI-Tenant:NetMRI-VRF		
NetMRI-Tenant:netmri-vrf-2		
NI-Tenant:NI-VRF		
overlay-1		
test1 vrf test1		
4 4 Page 1 of 1 ▶ ▶ 1 - 9 of 9	1 4 4 Page 1 of 1 b 1 Displaying 1 - 2 of 2	4
	Updace at 2017/0/2012/0/10/10/10/10/10/10/10/10/10/10/10/10/1	
© 2017 Infoblox, Inc. All rights reserved.		2017-09-28 16:00

6. When clicking on Summaries VRFs, you will be able to see the VRFs that are assigned to the devices.

QANET-SA53	_			F	JLLNM	_					FindIT	Q User:	admin	Logout
Infoblox 💸	Dashboard	Network Analysi	s Network Explore	Config Managem	ent Reports							4	ġ.	0
CONTROL YOUR SETWORK	Inve	ntory Summarie	as Topology Disc	overy Switch Port M	anagement						Select Device Gro	up		»ø
ACI 2017-00-28			_		-		_	_	_	e	Search			
	_	«									- 🍓 All Devices (3	8)		
Routes	_	+	VRFs - common:Info	blox-PN							ACI (4)	Management	: (1)	
Subnets		+	Search		1		1			Views 🔻 Filters 🛛 🐙 🧾	Network	w/o SNMP (6)	
VLANs		+	VRF Name 🔺	VRF Network View	VRF Description	VRF RD	Device Name	IP Address	Network View		Routing	19)		
Route Targets		+	common:Infoblox-PN	Tenant/VRF		0:0	LEAF1	<u>10.40.19.12</u>	Tenant/VRF			/N (3)		
HSRP/VRRP Group	os	+	common:Infoblox-PN	Tenant/VRF		0:0	LEAF2	<u>10.40.19.13</u>	Tenant/VRF					
Ports		+												
NIOS Grids		+												
Network Views		+												
VRFs		-												
Search		32												
VPE Name	v	PE Description												
View All VRFs		ia Decompton												
(default)IOS														
black-hole														
common:Infobiox-PN														
management														
NetMRI-Tenant:NetMI	RI-VRF													
NetMRI-Tenant:netmr	i-vrf-2													
NI-Tenant:NI-VRF														
overlay-1														
test1	v	rf test1												
14 4 Pane 1	of 1	1 - 9 of 9	A A Dana 1	E1 Dientruin	1 - 2 of 2					Lindated at 2017,00,28 15:57:54				
Page	M 1 1 1 1	1.909	In a Page I	a i i i i i Displayin	11-2012	_	_	_	_	opuateu at 2017-09-28 15:57:54				
© 2017 Infoblox, Inc. All	rights reserved.											201	17-09-28	16:00

7. Navigating to Network Explorer Discovery will show the discovery status, IP addresses, interfaces, VRF names, and network views.

QANET-SA53	FULLNM	FindIT Q User: admin Logout
Dashboard Network Analysi	is Network Explorer Config Management Reports	タ 谷 Ø
Inventory Summarie	es Topology Discovery - Switch Port Management	Select Device Group
Acti Search IP Address Network View Name IP Address Interface SPINE IP Address Interface VRF Name Network View 20.6.65 Sol.16.2 Address Interface 20.0.52.5 Sol.16.2 Address Interface 20.0.52.5 Sol.16.2 Address Interface 20.0.52.5 Sol.16.2 Address/NN IntervirVRF 20.0.53 Sol.16.2 Address/NN TervirVRF 20.0.54 Sol.16.2 Address/NN TervirVRF 20.0.57 Sol.16.2 Address/NN TervirVRF 20.0.53 Sol.16.2 Address/NN TervirVRF 20.0.54 Sol.16 Address/NN TervirVRF 20.0.55 Sol.162 Address/NN TervirVRF 20.0.55 Sol.162 Address/NN TervirVRF 20.0.55 Sol.162 Address/NN TervirVRF	Views • Filters Discover Next _ Discover _ Discover _ Discover Next _ Discover _ Discover _ Disco	Search - Sk D ovčes (38) Routing (19) Switching (16) Switching (16)
20.0.152.66 <u>lo2-lo2</u> #default#VNM TenanVVRF 20.0.152.67 <u>lo6-lo6</u> #default#VNM TenanVVRF ■ ▶ 10.40.19.12 TenantVVRF LEAF1	: : I I I I I I I I I I I I I I I I I I	Jans
□ ▶ <u>10.40.19.13</u> Tenant/VRF LEAF2	📀 🕘 🥝 🥥 🕘 🛕 🥝 🥥 🧐 SDN Element 2017-09-28 16:05:27 SNMP Collection: Successfully collected data / Table: V	Jans
10.40.19.10 Tenant/VRF apic1	📀 🕘 🥥 🥥 🔘 🛕 🥝 🥥 SDN Contr 2017-09-28 16:04:12 Device Groups: Successfully assigned to device groups	i
Image 1 of 1 Image Displaying 1 - 4 of Entire Network Totals Network Devices: 34 Lucensed Devices: 28	/4 IP Addresses: Classified 119 Reached 127 Identified 128	
© 2017 Infelieu Inc. All rights ground		2017 00 20 45 00
© 2017 Inrobiox, Inc. All rights reserved.		2017-09-28 16:08

Troubleshooting - NIOS

- 1. Try to ping the IP address of the APIC. If successful, then go to the next step.
- 2. Download a support bundle. Navigate to Grid Grid Manager Members.

foblox 📚	Dashboards	Data Management	Smart Folders	Grid Admini	stration						Q Search	admi
	Grid Manager	Upgrade Licenses	s HSM Group	Device Support	Ecosystem							
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			UID UID IOUS	Discovery	Subscriber Collection						🗹 Edit	
embers Services											🛅 Delete	
											E Permissions	
None None	✓ Off Filter	r On Show Filter	Off Replication St	atus view							Extensible Attributes	
											🔑 License	
Group Results	Group By Choose or	ie 👻	+								C Restart Services	
• 12 11 11 11								Go to		Go	Control	
Name	на	Status	IPv4 Address	IPv6 Address	Identify	DHCP	DNS	TETP	HTTP	FTP	Grid Properties	
	104	ouus	1 11 11 1000	1 10 7401000	lucitary	Bridi	5110				3 Backup	
📃 🛛 🔶 infot	lox.locald No	Running	172.19.18.119		Unsupported						Restore	
📃 🐟 prob	e1.com No	Running	172.19.18.114		Unsupported						🔯 Snapshot	
											GMC Promote Test	
= 🤶 prob	e2.com No	Running	172.19.18.113		Unsupported						Configure Captive Portal	
											🛃 Download	
											Certificates	
											Ltd Capacity Report	
											Syslog	
											Test SNMP	
											GSS-TSIG Keys	
											BFD Templates	
											Data Connector	
Fir	efox										() NTP	
											🚸 bloxTools	

3. Click on the Discovery member which is probe2.com in this example. Navigate to Toolbar Download and click on Support Bundle.



- 4. A compressed file will be created and can be downloaded to your Downloads directory. The file name is supportBundle.tar.gz. Uncompress this file.
- 5. After uncompressing, change directory to the newly create subdirectory called SupportBundle. Search for the compressed file called nm_discovery_support_bundle.tgz. Uncompress this file.
- The subdirectory Augusta is now created in the subdirectory supportBundle. Change directory to Augusta/snmp_logs. Open the latest dataEngine.log.<year>-<month>-<day> file. The information related to Cisco ACI you can be found by searching string 'AciObject' or IP address of Cisco APIC/LEAF. For example:

2017-08-01 16:11:47 [info] 13627 (worker14) 10.40.19.10/AciObject-3707429403927922829: AciObject: collection completed

2017-08-01 16:11:47 [info] 13627 (worker14) 10.40.19.10/AciObject-3707429403927922829: Done (663ms)

2017-08-01 16:20:24 [info] 22904 (worker01) 10.40.19.12/AciObject-4004721853816867796: ACI request POST /api/aaaLogin.json failed: Request to ACI failed: 401 Unauthorized (401: Username or password is incorrect - FAILED local authentication) 2017-08-01 16:20:24 [error] 22904 (worker01) 10.40.19.12/AciObject-4004721853816867796: Cannot login to ACI controller 10.40.19.10: **Request to ACI failed: 401 Unauthorized (401: Username or password is incorrect -** FAILED local authentication)

2017-08-01 16:22:25 [info] 23101 (worker13) 1.1.1.1/AciObject-6001678353361986687: ACI request POST /api/aaaLogin.json failed: **Request to ACI failed: 500 Can't connect to 1.1.1.1:80** (Connection timed out)

2017-08-01 16:22:25 [error] 23101 (worker13) 1.1.1.1/AciObject-6001678353361986687: AciObject: Failed collection: Cannot login to ACI controller 1.1.1.1: Request to ACI failed: 500 Can't connect to 1.1.1.1:80 (Connection timed out)

Troubleshooting – NetMRI

- 1. Try to ping the IP address of the APIC from within NetMRI. If successful, then go to the next step.
- 2. Navigate to any of the ACI devices in Network Explorer Inventory All Devices. Make sure the ACI device group is highlighted.

Dashboard Network A	inalysis Network	k Explorer Cr	onfig Management	Reports			× \$ 0
Inventory St	immaries Topolog	y Discovery	Switch Port Man	sporrient			Select Device Group
S ACI 2017-10-05						0	Search
	All Devices						- 📸 Al Devices (472)
Devices	- Search					Vers - Films J J 2	App Servers (18)
Infrastructure Devices	ID Address 1	Nature de Marco	Durden Name	8	Mandan		App Servers wio SNMP (155)
Connected End Hosts	10 40 10 10	Network 1		SDN Castroline (SDR)	Circo		LabCore (15)
Connected IP Phones	10.40.10.10	Notwork 1	apici LEAS	SDN Elament (00%)	Cisco		NAME ONLY (77)
E All Devices	10 40 10 12	Notwork 1	LEAP2	SDN Element (99%)	Cisco	Nar Coolery	Network Management (4)
	10.40 19.14	Network 1	SPINE	SDN Element (99%)	Cisco	NRK-0238ED	Network w/o SNMP (19)
Virtual Onvices Interfaces	*						Reving (2) Security (6) Security (6) Security (6) Security (6) UserSecurity (7) Workstations w/o SNWP (2)
OSs	+						
Models	+ 4 4 Pa	ge 1 of 1 →	▶ Displaying 1	- 4 of 4		Updated at 2017-10-05 11:44:07	
÷							J

3. Pick the device in question by clicking on the IP address to bring up the Device Viewer.

4. Within the Device Viewer, navigate to Settings & Status General Settings Enable SNMP debug.

General Settings	»	
Finger Printing : Disabled	Network Analysis	
NetBIOS Scanning : Disabled Analysis : Enabled	Device/Network Explorer	
ARP Cache Refresh : Disabled Config Change : N/A	ACT	
Config Collection : N/A Switch Port Mgmt : Enabled		
	Interfaces	
dify Device Settings	Router	
	Switch	
Name: LEAF1	Settings & Status	
Management Network View: Network 1 💌	E General Settings	
Type: SDN Element	Management Status	
·	User Audit Log	
infigure SNMP collection status and debug parameters	E Device Audit Log	
SNMP Status: O Enabled O Disabled	El Logs	
SNMP Debug: O Enabled O Disabled	E Device Support	
'Locked' or 'Unlocked' is selected for Config Change, this will override the Device Group stting.		
Config Change: O Group Default C Locked Unlocked		
o correct the reboot time for devices up longer than 497 days, enter the date and time of the st device reboot (YYYY-mm-dd hh:mm:ss).		
Reboot Time:		
Update		

5. Click on the Update button.

 Navigate to Settings Database Settings S Categories and click on the OK button.

Send Support Bundle. Highlight all of the Data



7. You can then either review the dataEngine.log file or submit support bundle to Infoblox TAC for further review.



Infoblox is the leader in modern, cloud-first networking and security services. Through extensive integrations, its solutions empower organizations to realize the full advantages of cloud networking today, while maximizing their existing infrastructure investments. Infoblox has over 12,000 customers, including 70 percent of the Fortune 500.

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