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NILE INTEGRATION WITH INFOBLOX NIOS

15TH SEPTEMBER 2023

Nile and Infoblox NIOS Integration



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OVERVIEW

This document is designed to assist with integrating Infoblox NIOS to process incoming DHCP requests received from the Nile Service Block (NSB). The purpose of this guide is to help with seamless integration between the Nile Access service and the Infoblox DHCP service to help process IP requests from clients connected to the NSB.

PREREQUISITES

- 1. Infoblox DHCP server to be up and running and reachable from the NSB.
 - a. If the DHCP server is installed somewhere upstream from the NSB, make sure that the routing is configured appropriately on the upstream router/firewall such that the NSB can reach the server.
 - b. If the router/firewall is configured with OSPF, the NSB can automatically form the OSPF association and exchange the routes.



SAMPLE TOPOLOGY DIAGRAM

Note: IP addresses used above are for illustration purposes only

PACKET FLOW

Nile Access Service is a completely L3-based architecture. Typical DHCP transactions are Layer 2 packets. If the server resides in the same VLAN as the client, the DHCP Discover packet as a broadcast is laterally transmitted in the network until it reaches the server, and the server will respond back with an offer. But with Nile Access Services, as the lateral transmission of the network packets is not allowed, the system proxies DHCP packets to the server.

For example, suppose the client is connecting to a segment that is set up with the subnet: 192.168.68.0/24, and the router IP is set up as 192.168.68.1. When the client is connecting to the network as it sends the Broadcast DHCP discover packet, the NSB Gateway will translate the packet into a Unicast DHCP discover packet and will be sent to the Infoblox server.



INTEGRATION

There are two main groups of settings needed to make this work.

- 1. Settings on the Nile Portal
 - a. Setting up a DHCP Server for the Geo Scope
- 2. Settings on the Infoblox DHCP server
 - a. Adding a network
 - b. Adding a netmask
 - c. Adding the grid member to serve the IP requests.
 - d. Adding options
 - e. Adding the range of available IP addresses

SETTINGS ON THE NILE PORTAL

- Log in to the Nile Portal.
- Navigate to Settings >> DHCP and click on "+" to add a new DHCP Server

n	ile	_					م	SLA	▲ 2	8
-	Service Areas DHCP	Authentication								
	DHCP servers +	2.0	HCP							
•	Name Name	> 3. Add a	I NEW DHCP ser	Veľ ess	Geo scope	Subnets				
	SAN JOSE DHC			-						
	1. Settings					Rows per pa				

• Configure the following parameters:

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8		DHCP										
Е° В					Add DHCP							
▲		Name	IP adda	.ce	Name* a		Host 1* b					
							10.1.250.25					
6		SAN JOSE DHCP										
					Geo scope* San Jose HQ S	े						
					Subnets						d	Ð
					Subnet* 192.168.68.0/24	Router* 192.168.68.1	e) 🔳					
					CANCEL						SAVE	

- » Name: Provide a name for the DHCP server, this is purely for identification.
- » Host 1: IP address of the Infoblox Server.
- » **Host 2, 3:** If there are multiple grid members serving the DHCP requests for the same subnet pool, please configure the IP addresses of the other grid members.
- » Geo Scope: This is the site where this DHCP server will be available.
- » Subnets: This is the subnet scheme in CIDR format that will be attached to a segment.
- » **Router:** The IP that is set here should be part of the subnet configured above and will be assumed by the NSB gateway.

SETTINGS ON THE INFOBLOX NIOS SERVER

• Navigate to Data Management >> DHCP >> Networks and click on "+" to add a new network.

infoblox		Daabbaurde Dela Management Smart Folgers Grid Administration		n -
		PAM VLANs Suger Heat DHCP DNS File Distribution		
Finder	«	Networks Members Lesses Files Option Spaces Progentries Templates Tem	əlbar 📎	*
Smart Folders -	+	Netrolis Shared Netrolis	Add -	
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		E deser Connert P-4 D102 UBL. Dusser New Deserry Eqn Be	Permission Code DROP Perges Contro Lesso Lesso Denato Contro Person Contro Person Contro Person Person Contro Person Contro Pers	

- Go through the Setup wizard.
- Select "Add Network

Add IPv4 Network Wizard > Step 1 of	7		
Add Network Add Network using Template	Select Template		- Internet -
Canad		Schadula for Later	

•

- Add the netmask, in the example, it is /24.
- Define the network, in this example 192.168.68.0, click "Next".

Add IPv4 Netwo	ork Wizard > Step 2 of 7		
*Netmask	255.255.255.0		0 «
*Networks		+1+1=	
Comment	Network 192.168.68.0 Automatically Create Reverse-Mapping Zone Disable for DHCP		
Cancel	Previous Next	Schedule for Later Sav	re & Close 🔹

Add the grid member that will respond to the DHCP requests.

Members			+-!=
Name IPv4 Address	IPv6 Address	Comment	
infoblox.localdo 10.1.250.25)		

- Add options.
 - » Lease time: Time that the client can hold the lease for
 - » Routers: This should match the router IP setup on the Nile Portal
 - » Domain name: Optional
 - » DNS Servers: Configure the DNS servers that can resolve the hostnames for the clients, you can use Infoblox threat defense to process the DNS requests too.
 - » Click "Next" and "Save".

Add IPv4 Networ	rk Wizard > Step 4 of 7	
Lease Time	12 Hours V	
	Unlimited Lease Time	
	Inadvertently selecting the Unlimited Lease Time check box or using this option incorrectly could cause a serious network outage in the future when all available leases are allocated	
	Inherited from Grid Infoblox	
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	IP Address a	
	192,168,68,1	
	- HE HOUSE	
Domain Name	nilesecure.com b	
NS Servers		
	+ 📋 Inherit	
	IP Address C	
	88.8.8	
	88.4.4	
Cancel	Previous Next Schedule for Later S	ave & Close

• View the summary of the created network.

Infoblox 📚		Dashboarda	Data Management	Smart Folders Grid	Administration							Q Search	admin +
		IPAM V	/LANs Super Host D	HCP DNS File Dist	ibution								
Finder Colleges		Networks Networks Quick Filte	Members Lesses Shared Networks	Fitters Option Spaces	Pingerprints Templates	Transmit Marc				Go to	Go	Toolbar Add Open C Edt Extensible Attributes Extensible Attributes	» «
			Network	Connext Nie Employee Segment	P-4 DHCP Utilization	Discover Now	None 6	00				Conder ChCP Ranges Core Lesses Lesses Details Configure Postal Configure Postal Configure DONS C	

• Click on the created network and continue with the setup by adding the IP range that can serve the DHCP requests.

Networks	Members Leases	Filters Option	Spaces Fingerpr	ints Templates							
Networks	Shared Networks										
Networks Hor 192.168.	etworks Home 92.168.68.0/24 🚸 IPv4 Network 🖋 📮 Go to IPAM View										
Quick Filter	None 👻	orr Filter On	Show Filter								
→(+)	2 ≡ - ± - ⊕										
	IP Address 🔺	Туре	Name	IPv4 DHCP Utili	Discover Now	Comment	Site				
No data											

• Go through the setup wizard and add the range.

Add IPv4 Range Wizard > Step 1	l of 5	۵
Add Range		@ «
Add Range Using Template	Select Template	

Cancel	Previous Next	Schedule for Later	Save & Close -

Enter the star	t IP and end IP.	
Add IPv4 Range	Wizard > Step 2 of 5	٥
*Network	192.168.68.0/24 (255.255.255.0) Select Network Clear	e «
*Start	192.168.68.50	
*End	192.168.68.200	
Name	Employee range	
Comment	Nile Employee range	
Disable for DHCP		
Cancel	Previous Next Schedul	e for Later Save & Close -

• Add the grid member that can serve requests for this range.

Add IPv4 Rang	e Wizard > Step 3 of 5	٥
Served by	 None (Reserved Range) Grid Member infobiox.localdomain IPv4 DHCP Failover Association Select Association 	e «
Cancel	Previous Next Schedule for La	ter Save & Close •

• Check the options that were set up while configuring the network in the previous screens and save them.

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