Configurar o recurso IP SLA com L3out para rastrear a rota estática

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Introduction

Este documento descreve como configurar o IPSLA (Internet Protocol Service Level Agreement, Contrato de Nível de Serviço de Protocolo de Internet) na Cisco Application Centric Infrastructure (ACI) para rastrear a rota estática aprenda de uma L3out e anuncie a outra L3out somente se a sub-rede estiver acessível a partir da primeira L3out.

Prerequisites

Requirements

A Cisco recomenda que você tenha conhecimento destes tópicos:

- Software ACI versão 4.1 e posterior
- L3out em direção ao dispositivo externo ou servidor
- Chassi EX e -FX
- Rastrear a rota para usar o Internet Control Message Protocol (ICMP) e as sondas TCP (neste exemplo, a sonda ICMP é usada)

Observação: o SLA IP da imagem da ACI é compatível com todos os switches de segunda geração Cisco Nexus, que incluem chassis -EX e -FX. Leia <u>Diretrizes e limitações para o</u> <u>SLA IP.</u>

Componentes Utilizados

As informações neste documento são baseadas nestas versões de software e hardware:

• ACI versão 5.2(2f)

• N9K-C93180YC-FX

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. Se a rede estiver ativa, certifique-se de que você entenda o impacto potencial de qualquer comando.

Informações de Apoio

Alguns servidores têm várias interfaces (como um loopback) que podem ser alcançadas pela ACI por meio do endereço IP físico do servidor. Nesse caso, você pode ter um requisito para adicionar uma rota estática e anunciar externamente, mas somente se o IP físico do servidor estiver acessível. Portanto, o recurso de rastreamento de IP SLA é uma configuração inevitável que só pode ser obtida através da configuração L3out em direção a esses servidores. Neste momento, os recursos de rastreamento IP SLA não são suportados para a <u>rota estática em um domínio de bridge</u>. Neste documento, procuraremos exemplos de servidor e configurações de rota de trânsito que usam SLA IP.

Configurar

- L3out em direção ao servidor e em direção aos dispositivos N3K.
- Configure o rastreamento IP SLA para o endereço IP físico do servidor.
- Configure a rota estática em L3out em direção ao servidor que usa a faixa IP SLA e anuncia de outra L3out em direção ao N3K.

Diagrama de Rede



Topologia de laboratório da ACI

Configurações

Etapas do resumo:

Políticas de estrutura da ACI:

- Criar contrato (por exemplo, um filtro padrão comum que permite que todo o tráfego seja usado, mas você pode usar um filtro específico criado localmente no mesmo espaço para permitir tráfego específico. nesse caso, certifique-se de permitir o protocolo usado para o rastreamento IP SLA).
- Crie uma nova L3out para o servidor 10.100.0.100/24 (SVI 550 do lado da ACI com endereço IP 10.100.0.254)
- Criar políticas de rastreamento de SLA IP (política de monitoramento de SLA IP, política de membros de rastreamento, política de lista de rastreamento)
- Adicione a rota estática em L3out em direção ao servidor com lista de rastreamento de SLA IP.
- Crie uma nova L3out para o dispositivo N3K que usa o BGP. (EBGP) ACI AS 65535 e N3K AS 65536
- Exportar rota estática de L3out para N3K.
- Verifique a configuração e a acessibilidade.

1. Create Contract (para este exemplo, use um filtro padrão comum que permita todo o tráfego; entretanto, você pode usar um filtro específico criado localmente no mesmo espaço para permitir tráfego específico, mas, nesse caso, certifique-se de permitir o protocolo usado para o rastreamento IP SLA).

TN_D (000	Contract - Co	ntract_L	3out_BGP										c	0
~ 🌐 TN_D								Summany	Topology	Dolicy	Deer Entities	Contract Exception	Equilte	Hist	nnu
> 🧮 Application Profiles								owning	(oporog)	rosey	r our change	Contract Exception	1 Buno		109
> Networking													Ó	4	**-
Contracts		Properties													
V E Standard			Name:	Contract_L3out_B0	3P										^
Contract_L3out_80P			Alas:												
Taboos		Gi	lobal Alias:												
> 🧮 Imported			Scope:	VRF											
> 🔤 Filters		(QoS Class:	Unspecified	141										
> 🔤 Policies		Tar	get DSCP.	Unspecified											
> 🚍 Services				Target OSCP Marking v	vorks anty it the QoS C	1942 /6 247									
📾 Security (Beta)		b	escription:												
		Ar	notations:	Click to add a	new annotation										
			Subjects.											11.1	E.
				- Name		Allas	Filters	1			Description				1
				Allow_Any			common/default								
			-												1

Criar contrato

2. Crie uma nova L3out para o servidor 10.100.0.100/24 (SVI 550 do lado da ACI com endereço IP 10.100.0.254).

TN_D	\bigcirc	L3 Outside - L3out Static server
> Щ_ит Щ_		
> E Application Profiles		
V I Networking		
> 🚞 Bridge Domains		0.0.0
> 🚞 VRFs		
> 🚞 L2Outs		Properties News Loss Challenge
Contraction Contraction Contraction		Name: L3out_Static_server
> 🛧 L3out_N3K_BGP		Description
✓ ▲ L3out_Static_server		
> 🚞 Logical Node Profiles		
> 🚞 External EPGs		Annotations: Click to add a new annotation
> Route map for import and export route control		Global Alias:
> 🔤 SR-MPLS VRF L3Outs		Provider Label:
> 🚞 Dot1Q Tunnels	•	Consumer Label: select an option
✓		Target DSCP: Unspecified
Standard		PIM:
> 💬 Contract_L3out_BGP		PIMv6:
> 🚞 Taboos		Route Control Enforcement: Import
> 🚞 Imported		VRF: VRF_S
Filters		Resolved VRF: TN_D/VRF_S
> 🧮 Policies		L3 Domain: TN_D_L3Dom
		Route Profile for Interleak: select a value
Security (Beta)		Route Profile for Redistribution:
		▲ Source
		Route Control for Dampening:
		Address Family Type
		- Hanses and the
Criar L 2 out		

Criar L3out



Anexando nó ao L3out

TN_D	060	Logical Interface Profile	- L3out_Static_server_inter	faceProfile							00
~ Щ TN_D									Doline	Enulte	History
> 🔤 Application Profiles									Policy	Paults	riistory
Wetworking							General Routed S	Sub-Interfaces	Routed Interfaces	SVI Float	ting SVI
> 🥅 Bridge Domains		0000									
> 🥅 VRFs											0 ±
> 🔚 L2Outs											+
L3Outs		 Path 	Side A IP	Side B IP	Secondary IP Address	IP Address	MAC Address	MTU (bytes)	Encap	Encap Scop	pe
> 📤 L3out_N3K_BGP		Dod-10koda-101/ath1/2				10 100 0 254/24	00-22-00-59-10-55	inbusit	utan_E07	Local	
L3out_Static_server		Pour lineoue to treatly a				10.100.0.204/24	00.22.00.10.19.11	Englis	Wall-007	LOCAL	
Logical Node Profiles											
L3out_Static_server_nodeProfile											
> 🧮 Configured Nodes											
Logical Interface Profiles	_										
L3out_Static_server_interfaceProfile	•										
V 🚞 External EPGs											
EXT_static_EPG											

Conectando a interface ao L3out

™_D ① ④ ③	External EPG - EX	T static EPG					6	
~ Щ TN_0							4	
> E Application Profiles						Policy Operational	Health Faults Hist	.ory
w 🖿 Networking					General	Contracts Inherited Contracts	Subject Labels EPG Lab	sels
> 🚞 Bridge Domains	0.000							44
> 🧮 VRFs	\otimes \otimes \otimes \otimes						0 ±	~-
> 🚍 L2Outs	Properties	EXT static EDG						
V 🛅 L3Outs	Alias							î
> 📤 L3out_N3K_BGP	Annotations	Click to add a new annotation	1					
V 🙆 L3out_Static_server	Global Alias							
Logical Node Profiles	Description							
El L3out_Static_server_nodeProfile								
> Configured Nodes								
Logical Interface Profiles	Contract Exception Tex	32771						
L3out_Static_server_interfaceProfile	Contract Display 100	VOE P						
V 🚞 External EPGs	Resolved VRF	uni/tn-TN D/ctx-VRF S						
EXT_static_EPG	QoS Class	Unspecified						
Route map for import and export route control	Target DSCP:	Unspecified						
> 🚞 SR-MPLS VRF L3Outs	Configuration Status	applied						
> 🚞 Dot1Q Tunnels	Configuration Issues							
> 🚍 Contracts	Preferred Group Member:	Exclude Include						
> 🚍 Policies	Inter Col PDD Inclusion							
> 🚍 Services	Intra Ext-EPG Bolation.	Enterced Unerforced						1
🚍 Security (Beta)	Subnets:						÷ +	
O Quick Start		 IP Address 	Scope	Name	Aggregate	Route Control Profile	Route Summarization Policy	
		0.0.0.0/0	External Subnets for the Extern.					~
						Show Us	ige Reset Submi	

Configurar EPG externo



Anexando contrato à L3out

3. Criar políticas de rastreamento de SLA IP (política de monitoramento de SLA IP, política de membros de rastreamento, política de lista de rastreamento).

Política de monitor de SLA IP:

TN_D	©€⊙	IP SLA Monitoring Policy - ICI	MP_Monitor		
✓ ₩ TN_D	^				
> E Application Profiles					
> 🚞 Networking		8 👽 🛆 🕕			
> 🚞 Contracts		Properties			
V 🖬 Policies		Name:	ICMP_Monitor		
Protocol		Description:			
> 🚍 BFD					
> 🚞 BFD Multihop		SLA Type:	ICMP TCP	L2Ping	HTTP
> 📩 ND RA Prefix		SLA Frequency (sec):	5		
> 🚍 BGP		Detect Multiplier	3		
> 🚞 Custom QoS		Request Data Size (hytes):	28		
> 🚞 Data Plane Policing		Type of Service:	20		
		Operation Timoout (milliocoonde):	0		
> 🧮 EIGRP	•	Operation Timeout (milliseconds).	900		
> 🧮 End Point Retention		Threshold (milliseconds).	900		
> 🧮 First Hop Security		Traffic Class Value:	0	\bigcirc	
> 🛅 HSRP					
> 🧮 IGMP Interface					
V 🖬 IP SLA					
V 🖬 IP SLA Monitoring Policies					
E ICMP_Monitor					
> 🧮 Track Lists					
> 🔚 Track Members					

Configurar política de monitoramento de SLA IP

Membros do rastreamento IP SLA:

TN_D	00	Track Member - S	Server_Physi	ical_IP							0.0
ע_אז 🖽 ∨	~							Delicu	Clate	Eaulte	Uiston
> E Application Profiles	_							Policy	Stats	rauto	history
> 🔤 Networking	_									0	± %
> Contracts	_	Properties									
🗠 🚍 Policies	_		Name:	Server_Physical_IP							
V 🚞 Protocol	_		Description:								
> 🚍 BFD	_										
> 🚍 BFD Multihop	_	Track ID Of Object	To Be Tracked:	2000							
> 📰 ND RA Prefix	_	Destination IP	To Be Tracked:	10.100.0.100							
> 🚍 BGP	_	Scope of	Track Member:	L3Out - L3out_Static_se	w 🗢 🚱						
> 🚍 Custom QoS	_		IPSLA Policy:	ICMP_Monitor	V 🚱	Statu	s of destination track IP				
> 🚞 Data Plane Policing	_		Deployments:	Node ID	Operation Number	Operation Status	Latest Operation Error Message				
> 🚍 DHCP				Pod-1/Node-101	2000	Reachable	OK				
> 🚍 EIGRP	1										
End Point Retention	_										
> 🚍 First Hop Security	_										
> 🚍 HSRP											
> 📰 IGMP Interface											
> 🚍 IGMP Snoop											
V 🚔 IP SLA											
V P SLA Monitoring Policies											
F ICMP_Monitor											
> 🚞 Track Lists											
Track Members											
Server_Physical_IP											

Adição de IP para monitorar a política

Política da lista de controle:

TN_D	000	Track List - Tracking_Server_Physical_IP				00
~ 開 ™_D	<u>^</u>		Dellass	Carto	Fairles	
> C Application Profiles			Policy	Stats	Faults	History
> 🔤 Networking					0	± **-
Contracts		Properties				
🖂 🚞 Policies		Name: Tracking_Server_Physical_IP				
Main Protocol		Description: optional				
> 🖿 BFD						
> 🧮 BFD Multihop		Type of Track List: Threshold percentage				
> 🧮 ND RA Prefix		Percentage Up (percentage): 1				
> 📰 BGP		Percentare Deven (nerrentare) (n				
> 🧮 Custom QoS		Percentage lower should be less than Percentage Up				
> 🧮 Data Plane Policing		Track list to track member				11 +
> 🖿 DHCP		Track Member				
> 🧮 EXGRP		TN_D/Server_Physical_JP				
End Point Retention						
> 🖿 First Hop Security						
> 🧮 HSRP						
> 🧮 IGMP Interface						
> 🧮 KIMP Snoop						
V 🚞 IP SLA						
P SLA Monitoring Policies						
E ICMP_Monitor						
V 🚍 Track Lists						
Tracking_Server_Physical_IP						
V Track Members						
Server_Physical_IP						

Configurar lista de controle

4. Configure a rota estática em L3out em direção ao servidor com a política de lista de rastreamento SLA IP recém-criada.

cisco APIC							adr	nin 🔇 🖸 🎙	00) 🖸
System Tenants Fabric	Virtual Networking	Admin Operatio	ns Apps Inte	egrations						
ALL TENANTS Add Tenant Tenant S	Search: name or descr	common	TN_D donwang2	SERVERS edge						
TN_D	നര		ociation							~ ~
✓ III TN_D			00000001							00
> E Application Profiles		_						Policy Faul	is H	listory
V III Networking		000							0 ±	**-
> 📰 Bridge Domains		Propertie	S							
> 🧮 VRFs			Node ID	c topology/pod-1/node-101						^
> 🖿 L2Outs			Router ID	101.101.101.101						
V 🖬 L30uts		Use Rout	er ID as Loopback Address	I: Market in the intervention of the interv	are defined in the table below.					
> 🚯 L3out_N3K_BGP			Loopback Addresses	E .					11	+
V 🚯 L3out_Static_server				▲ IP						
Logical Node Profiles						No items have been found.				
Liout_state_server_nod	xer-tonie					select actions to create a new item.				
Congleted Nodes	orth-101									
> E Logical Interface Profi	los		oreite Loophack Addresses							
> External EPGs			er ante conquiació munite apra							+
Route map for import and ex	port route control			* IP						- 1
SR-MPLS VRF L3Outs						No items have been found. Select Actions to create a new item.				
> 🧮 Dot1Q Tunnels										
> 🚍 Contracts	Leaf	101								
> 🧰 Policies	15.2	(2f)	Static Routes						17	+
> E Services		Eth1/3 L3out_Static_server		 IP Address 	Description	Track Policy	Next Hop IP			
Security (Beta)	L3Out	Encap vlan 507		200.0.0.1/32		TN_D/Tracking_Serve	er_Physical_IP 10.100.0.10	0		
O Quick Start	20041	VRF: TN_D:VRF_S			Static route added wi	th IP SLA Track which tracking physical IP	of server.	T		
	Physical IP: 10	100.0.100/24						1	•	~
	Loopback 507	: 200.0.0.1/32						_		
							Show Usage	Reset		

Configurar rota estática em L3out

5. Crie uma nova L3out para o dispositivo N3K que usa o Border Gateway Protocol (BGP). (EBGP) ACI AS 65535 e N3K AS 65536.

TN_D	00	L3 Outside - L3out_N3K_BGP
∽ Щ ти_0		
> Application Profiles		
🗸 🚞 Networking		
> 🧮 Bridge Domains		
> 🚍 VRFs		
> 🚍 L2Outs		Properties
V 🖬 L3Outs		Name: L3out_N3K_BGP
V 🔿 L3out_N3K_BGP		Puese Descriptions
Logical Node Profiles		Description. Optional
✓		
> 🚞 Configured Nodes		Annotations: 🕀 Click to add a new annotation
Logical Interface Profiles		Global Alias:
L3out_N3K_BGP_interfaceProfile		Provider Label:
BGP Peer 100.0.0.2- Node-102/1/3		Consumer Label: select an option
🗸 🚞 External EPGs		Target DSCP: Unspecified
EXT_N3K_BGP_EPG		PIM:
> The second		PIMv6:
> 合 L3out_Static_server		Route Control Enforcement: Import
> 🔤 SR-MPLS VRF L3Outs		VRE S
> 🚍 Dot1Q Tunnels		Resolved VRF: TN D/VRF S
> 💳 Contracts	•	L3 Domain: TN D L3Dom
> 🧮 Policies		Route Profile for Interleak: select a value
> 💳 Services		Route Profile for Redistribution:
💳 Security (Beta)		▲ Source
> 🕞 Quick Start		
		Enable BGP/EIGRP/OSPF BGP OSPF EIGRP
		Route Control for Dampening:
		 Address Family Type

Configurar o protocolo BGP

TN_D (P.G.O.	Lonical Node Profile - L'Sout B	CP_podePode		
✓目 N.0	Logical Node Frome - Looo(_D	ar_inderioile		
> E Application Profiles				
V 🖿 Networking				
> 🚞 Bridge Domains	Properties			
> 🖿 VRFs	Nam	e: L3out_BGP_nodeProfile		
> 🖿 120m	Descriptio	nc optional		
V 🔛 Lätturs				
V 📣 L3out_NBK_BBP	All	6		
Logical Node Profiles	Target DSC	P. Unepecified		
V 📅 L3out_BOP_nodeProfile	Node	6		
Configured Nodes		- Note D	Souther (1)	Loopback Address
Logical Interface Profiles		topology/pad-1/hode-102	102.102.102.102	102.102.102.102
I.Sout_NIK_BSP_interfaceProfile				
P BCP Rear 100.0.0.2- Node-102/1/3				
El Deenal (PCs El De				
EXT_NOK_BOP_EPG				
E Route map for import and export route control				
> 📤 L3out_Static_server	EGP Peer Connectivit	x		
> 🔤 SR-MPLS VIF LOOUS		Peer IP Address	Peer Controls	Interface
> 🔛 Dot10 Turnets		100.0.0.2		Pod-1/Node-102/eth1/3
> Contracts				
> 🚍 Policius				
> Services				
E Security (Beta)				
> O quocstat				
	Create BGP Protocol Profi			
	Greate Gro Matthop Protocol Pron	- U		

Perfil de peer do BGP



Configurar política de peer BGP



Configurar o perfil da interface lógica em L3out

diale APIC		admin 🕲 🔿 🕲 🕲
System Tenants Fabric Virtual Networking Admin Operations	Apps Integrations	
ALL TENANTS Add Tenant Tenant Search: Teme or citecr common T	NLD i denwang2 i SERVERS i edge	
TNLD DG	External EPG - EXT_N3K_BGP_EPG	0.0
~ 🗒 m_0		Deliny Operational Health Earth History
> E Application Profiles		they optimized them they
Metworking		General Contracts Inherited Contracts Subject Labels EPG Labels
> 🔛 Bridge Comains	0000	0 ± %.
> III VIPs	Drowfies	
> III 120/8	Name: DXT_NDX_BOP_EP0	~
	Aias:	
 Liste NRC RDP 	Annotations: 🚳 Click to add a new annotation	
 Lagica Node Homes Lagica Node Homes 	Groow Alast	
 El Contrarent Martine 	Description: optional	
V 🛄 Lookal Interface Device		
V B Lind NIE RCP internation	pcTag 16305	
BCP Peer 100 0 0 2 - Mark-100/1/3	Contract Exception Tag:	
V Denne IPCs	Configured VRF Name: VRF_S	
DT NIC 80P IPG	Reserved VRF: unyter TNL Dictor VRF_5	
> Route map for import and export route control	Guis Lass, Unspected	
> 🙆 L3out_Static_server	Target DICP. Unspectied	
> 🔤 SR-MPLS VIF L30vis	Contexistion Issues	
) 🧱 Dot1Q Tunnels	Indexed (non-Member College Meder	
> 🔤 Contracts		
> 🖬 Pokces	Inter De-DPG Boleton: Under Under Under Under Under	
) 🛅 Services	Submits.	÷ +
Security (Beta)	- IP Addess Scripe Name	Aggregate Route Control Profile Route Summarization Policy
> Q+ Quick Start	0.0.0.0/0 External Subrets for the External EPG	
	200.0.0.1/32 Export Route Control Sybnet	

Sub-rede de exportação EPG externa em trânsito na L3out

TN_D	000	External EPG - EXT_N3	K_BGP_EPG						
✓ III TN_0									Policy Operational
V Report and internet								General	Contracts Inherited Contracts
> 🚞 Bridge Domains		THEATTY O O A O							
> == v#Fs > == L20xs		Name	 Tenant 	Tenant Alias	Contract Type	Provided / Consumed	QoS Class	State	Label
√ 🖿 130/m		G Contract Type: Contract							
V 📥 Läoir, NBK, BBP		Contract_L3out_BGP	TN_D		Contract	Consumed	Unspecified	formed	
Logical Node Profiles									
V 😰 L3out_BOP_nodeProfile									
Configured Nodes Configured Nodes									
 I LSout, NDK_BOP_interfaceProfile 									
BDP Peer 100.0.0.2- Node-102/1/3									
V Distance FD/ts									
DVT N/W 000 E00									

Anexando contrato ao EPG externo

6. Exportar rota estática de L3out para N3K.

```
switchname N3K
feature bgp
feature interface-vlan
interface Vlan550
 no shutdown
 vrf member BGP_L3out
 ip address 100.0.2/30
interface loopback200
 vrf member BGP_L3out
 ip address 30.30.30.1/32
interface Ethernet1/1
 switchport mode trunk
router bgp 65536
 address-family ipv4 unicast
 neighbor 100.0.0.1
 vrf BGP_L3out
   router-id 3.3.3.3
   address-family ipv4 unicast
     network 30.30.30.1/32
   neighbor 100.0.0.1
     remote-as 65535
     update-source Vlan550
     address-family ipv4 unicast
```

Verificar

Use esta seção para confirmar se a sua configuração funciona corretamente.

Nexus3K.



Anúncio de rota de trânsito explicado pela topologia

N3K# routing vrf BGP_L3out

N3K%BGP_L3out# show ip route IP Route Table for VRF "BGP_L3out" '*' denotes best ucast next-hop '**' denotes best mcast next-hop '[x/y]' denotes [preference/metric] '%' in via output denotes VRF 30.30.30.1/32, ubest/mbest: 2/0, attached *via 30.30.30.1, Lo200, [0/0], 02:35:27, local *via 30.30.30.1, Lo200, [0/0], 02:35:27, direct 100.0.0/30, ubest/mbest: 1/0, attached *via 100.0.0.2, Vlan550, [0/0], 05:52:18, direct 100.0.0.2/32, ubest/mbest: 1/0, attached *via 100.0.0.2, Vlan550, [0/0], 05:52:18, local 200.0.0.1/32, ubest/mbest: 1/0 *via 100.0.0.1, [20/0], 02:32:36, bgp-65536, external, tag 65535

O Loopback do Servidor pode ser alcançado com a origem como endereço de loopback N3K.

N3K

interface loopback200
vrf member BGP_L3out
ip address 30.30.30.1/32

N3K# ping 200.0.0.1 vrf BGP_L3out source 30.30.30.1

PING 200.0.0.1 (200.0.0.1): 56 data bytes 64 bytes from 200.0.0.1: icmp_seq=0 ttl=252 time=0.94 ms 64 bytes from 200.0.0.1: icmp_seq=1 ttl=252 time=0.729 ms 64 bytes from 200.0.0.1: icmp_seq=2 ttl=252 time=0.658 ms 64 bytes from 200.0.0.1: icmp_seq=3 ttl=252 time=0.706 ms 64 bytes from 200.0.0.1: icmp_seq=4 ttl=252 time=0.655 ms --- 200.0.0.1 ping statistics ---5 packets transmitted, 5 packets received, 0.00% packet loss round-trip min/avg/max = 0.655/0.737/0.94 ms

Tabela de rotas ACI Leaf 102 (que tem L3out em direção ao Nexus 3K).

Leaf102# show ip route vrf TN_D:VRF_S

```
IP Route Table for VRF "TN_D:VRF_S"
'*' denotes best ucast next-hop
'**' denotes best mcast next-hop
'[x/y]' denotes [preference/metric]
'%' in via output denotes VRF
10.100.0.0/24, ubest/mbest: 1/0
    *via 10.0.96.64%overlay-1, [200/0], 02:56:36, bgp-65535, internal, tag 65535
30.30.30.1/32, ubest/mbest: 1/0
```

```
of N3K.
    *via 100.0.0.2%TN_D:VRF_S, [20/0], 02:44:34, bgp-65535, external, tag 65536
100.0.0/30, ubest/mbest: 1/0, attached, direct
    *via 100.0.0.1, vlan19, [0/0], 05:09:37, direct
100.0.0.1/32, ubest/mbest: 1/0, attached
    *via 100.0.0.1, vlan19, [0/0], 05:09:37, local, local
101.101.101.101/32, ubest/mbest: 1/0
    *via 10.0.96.64%overlay-1, [1/0], 02:56:36, bgp-65535, internal, tag 65535
102.102.102.102.102,102, lo5, [0/0], 16:49:13, local, local
    *via 102.102.102.102, lo5, [0/0], 16:49:13, direct
200.0.0.1/32, ubest/mbest: 1/0
    *via 10.0.96.64%overlay-1, [1/0], 02:42:15, bgp-65535, internal, tag 65535
```

Verificação da configuração do SLA IP Leaf 101 da CLI.

```
Leaf101# show ip sla configuration
IP SLAs Infrastructure Engine-III
Entry number: 2000
Owner: owner-icmp-echo-dme
Taq:
Operation timeout (milliseconds): 900
Type of operation to perform: icmp-echo
Target address/Source address: 10.100.0.100/0.0.0.0
Traffic-Class parameter: 0x0
Type Of Service parameter: 0x0
Request size (ARR data portion): 28
Verify data: No
Vrf Name: TN_D:VRF_S
Schedule:
  Operation frequency (seconds): 5 (not considered if randomly scheduled)
  Next Scheduled Start Time: Start Time already passed
  Group Scheduled : FALSE
  Randomly Scheduled : FALSE
  Life (seconds): Forever
  Entry Ageout (seconds): 3600
  Recurring (Starting Everyday): FALSE
  Status of entry (SNMP RowStatus): Active
Threshold (milliseconds): 900
Distribution Statistics:
  Number of statistic hours kept: 2
  Number of statistic distribution buckets kept: 1
   Statistic distribution interval (milliseconds): 20
History Statistics:
  Number of history Lives kept: 0
  Number of history Buckets kept: 15
  History Filter Type: None
Leaf101# show track brief
```

TrackId	Туре	Instance	Parameter	State	Last Change
4	IP SLA	2000	reachability	up	2021-09-16T18:08:42.364+00:00
3	List		percentage	up	2021-09-16T18:08:42.365+00:00

Leaf101# show track

```
Route prefix 200.0.1/32

Track 2

IP SLA 2000

reachability is up

6 changes, last change 2021-09-16T00:01:50.338+00:00

Tracked by:

Track List 1
```

Verificação com o comando Managed Object Query (Moquery):

apic1# moquery -c fvIPSLAMonitoringPol -f 'fv.IPSLAMonitoringPol.name=="ICMP_Monitor"'
Total Objects shown: 1

# fv.IPSLAMonitoringPol						
name		ICMP_Monitor				
annotation	:					
childAction						
descr	:					
dn	:	uni/tn-TN_D/ipslaMonitoringPol-ICMP_Monitor				
extMngdBy	:					
httpMethod	:	get				
httpUri	:	/				
httpVersion	:	HTTP10				
ipv4Tos	:	0				
ipv6TrfClass	:	0				
lcOwn	:	local				
modTs	:	2021-09-15T21:18:48.195+00:00				
monPolDn	:	uni/tn-common/monepg-default				
nameAlias	:					
ownerKey	:					
ownerTag	:					
reqDataSize	:	28				
rn	:	ipslaMonitoringPol-ICMP_Monitor				
slaDetectMultiplier	:	3				
slaFrequency	:	5				
slaPort	:	0				
slaType	:	icmp				
status	:					
threshold	:	900				
timeout	:	900				
uid	:	15374				
userdom	:	:all:				

apic1# moquery -c fvTrackMember -f 'fv.TrackMember.name=="Server_Physical_IP"'
Total Objects shown: 1

# fv.TrackMe	fv.TrackMember					
name		Server_Physical_IP				
annotation						
childAction						
descr						
dn		uni/tn-TN_D/trackmember-Server_Physical_IP				
dstIpAddr		10.100.0.100				
extMngdBy						
id	:	2000				
lcOwn	:	local				
modTs	:	2021-09-15T21:16:22.992+00:00				
monPolDn	:	uni/tn-common/monepg-default				
nameAlias	:					
ownerKey						
ownerTag						

```
rn : trackmember-Server_Physical_IP
scopeDn : uni/tn-TN_D/out-L3out_Static_server
status :
uid : 15374
userdom : :all:
```

apic1# moquery -c fvTrackList -f 'fv.TrackList.name=="Tracking_Server_Physical_IP"'
Total Objects shown: 1

<pre># fv.TrackList</pre>		
name	:	Tracking_Server_Physical_IP
annotation	:	
childAction	:	
descr	:	
dn	:	uni/tn-TN_D/tracklist-Tracking_Server_Physical_IP
extMngdBy	:	
lcOwn	:	local
modTs	:	2021-09-15T07:41:15.958+00:00
monPolDn	:	uni/tn-common/monepg-default
nameAlias	:	
ownerKey	:	
ownerTag	:	
percentageDown	:	0
percentageUp	:	1
rn	:	tracklist-Tracking_Server_Physical_IP
status	:	
type	:	percentage
uid	:	15374
userdom	:	:all:
weightDown	:	0
weightUp	:	1

Troubleshoot

Atualmente, não existem informações disponíveis específicas sobre Troubleshooting para esta configuração.

No caso de a desconexão do link ou o endereço IP físico não poder ser alcançado, o SLA IP da ACI mostra o IP de destino como 'timeout' após o limite configurado chegar.



Interface L3out inativa

TN_D	00	Track Member - Server_Physi	cal_IP			
TN_D TO Application Profiles						Poli
> Networking						
> E Contracts	_	Properties				
V 🚞 Policies		Name:	Server_Physical_IP			
Protocol	_	Description:				
> 🚍 BFD						
> 🚞 BFD Multihop		Track ID Of Object To Be Tracked:	2000			
> 🚞 ND RA Prefix		Destination IP To Be Tracked:	10.100.0.100			
> 🚍 BGP		Scope of Track Member:	L3Out - L3out_Static_se	erv 🗸 🔁		
> 🚞 Custom QoS		IPSLA Policy:	ICMP_Monitor	V 🕑		
> 🚞 Data Plane Policing		Deployments:	Node ID	Operation Number	Operation Status	Latest Operation Error Message
> 🚍 DHCP			Pod-1/Node-101	2000 ms (2seconds)	Unreachable	Timeout
> 🚞 EIGRP						
> 🚞 End Point Retention						
> 🧮 First Hop Security						
> 🚍 HSRP						
> 🧮 IGMP Interface						
> 🚍 IGMP Snoop						
V 🖿 IP SLA						
> IP SLA Monitoring Policies						
> 🚞 Track Lists						
Track Members						
Server_Physical_IP						

Status do link do monitor SLA IP após o link inativo

Verificação CLI Leaf 101 (Você pode ver o tempo limite para "código de retorno da última operação").

Leaf101# show ip sla statistics

```
IPSLAs Latest Operation Statistics

IPSLA operation id: 2000

Latest RTT: NoConnection/Busy/Timeout

Latest operation start time: 23:54:30 UTC Wed Sep 15 2021

Latest operation return code: Timeout

Number of successes: 658

Number of failures: 61

Operation time to live: forever
```

Assim que o servidor estiver acessível, ele mostrará o status OK.



Status do monitor de SLA IP após o link ativado

Leaf101# show ip sla statistics IPSLAs Latest Operation Statistics

IPSLA operation id: 2000 Latest RTT: 1 milliseconds Latest operation start time: 00:03:15 UTC Thu Sep 16 2021 Latest operation return code: OK Number of successes: 18 Number of failures: 86 Operation time to live: forever

Informações Relacionadas

- Guia de configuração de rede da camada 3 do Cisco APIC, versão 5.2(x)
- <u>Suporte Técnico e Documentação Cisco Systems</u>