# IP-SLA-functie met L3out configureren naar statische route

# Inhoud

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# Inleiding

Dit document beschrijft hoe u de Internet Protocol Service Level Agreement (IPSLA) in Cisco Application Centric Infrastructure (ACI) kunt configureren om statische route van één L3out te volgen en alleen naar een ander L3out kunt adverteren als het subprogramma bereikbaar is vanaf de eerste L3out.

# Voorwaarden

## Vereisten

Cisco raadt kennis van de volgende onderwerpen aan:

- ACI-softwarerelease 4.1 en hoger
- L3out naar extern apparaat of server
- EX- en FX-chassis
- Track the route to use Internet Control Message Protocol (ICMP) en TCP-probes (in dit voorbeeld wordt de ICMP-toets gebruikt)

**Opmerking**: ACI-afbeelding IP-SLA wordt ondersteund in alle Cisco Nexus-switches van de tweede generatie, inclusief -EX en -FX-chassis. Lees <u>Richtlijnen en beperkingen voor IP-SLA</u>.

## Gebruikte componenten

De informatie in dit document is gebaseerd op de volgende software- en hardware-versies:

• ACI versie 5.2(2f)

## • N9K-C93180YC-FX

De informatie in dit document is gebaseerd op de apparaten in een specifieke laboratoriumomgeving. Alle apparaten die in dit document worden beschreven, hadden een opgeschoonde (standaard)configuratie. Als uw netwerk levend is, zorg er dan voor dat u de mogelijke impact van om het even welke opdracht begrijpt.

## Achtergrondinformatie

Sommige servers hebben meerdere interfaces (zoals een loopback) die bereikbaar zijn vanuit ACI via het fysieke IP adres van de server. In zo'n geval kunt u een vereiste hebben om een statische route toe te voegen en extern te adverteren maar alleen als de fysieke IP van de server bereikbaar is. Vandaar dat de IP SLA-spoorfunctie een onvermijdelijke configuratie is die alleen kan worden bereikt door L3out-configuratie naar deze servers. Op dit moment worden IP SLA-spooreigenschappen niet ondersteund voor de <u>statische route op een Bridge Domain</u>. In dit document zullen we servervoorbeelden en configuratie van doorvoerroutes zoeken die IP SLA gebruiken.

# Configureren

- L3out naar server en naar N3K apparaten.
- Configuratie van IP SLA spoor voor het fysieke IP adres van de server.
- Configureer de statische route onder L3out naar een server die IP SLA-sporen gebruikt en adverteer met een andere L3out naar N3K.

## Netwerkdiagram



### ACI-labtologie

## Configuraties

Samenvattende stappen:

## ACI-weefselbeleid:

- Contract maken (bijvoorbeeld een gemeenschappelijk standaardfilter waarmee alle verkeer kan worden gebruikt, maar u kunt een specifiek filter dat in dezelfde huurder is gemaakt gebruiken om specifiek verkeer toe te staan. Zorg er in dat geval voor dat u het protocol toestaat dat wij worden gebruikt voor IP-SLA-sporen).
- Nieuwe L3out maken naar server 10.100.0.100/24 (ACI zijde SVI 550 met IP-adres 10.100.0.254)
- IP SLA-spoorbeleid maken (IP SLA-monitoringbeleid, beleid voor leden volgen, beleid voor spoorlijst)
- Voeg statische route onder L3out toe naar server met IP SLA tracklist.
- Maak een nieuw L3out naar het N3K-apparaat dat BGP (EBGP) ACI AS 65535 en N3K AS 65536 gebruikt
- Exporteren van L3out naar N3K.
- Controleer de configuratie en bereikbaarheid.

1. Contract maken (gebruik bijvoorbeeld een gemeenschappelijk standaardfilter dat al het verkeer mogelijk maakt, maar u kunt een specifiek filter dat in dezelfde huurder is gemaakt gebruiken om specifiek verkeer toe te staan, maar zorg er in dat geval voor dat u protocol toestaat dat wij voor IP SLA-spoor worden gebruikt).

TN_D	0 00	ntract - Contract,	L3out_BGP										0	
TN_D En Application Profiles							Summary	Topology	Policy	Peer Entities	Contract Exception	Faults	Histo	ry
> En Networking	(	0000										Ó	± 3	K-
✓ Standard → ₩ Contract_L3out_80P		Nam Ala	e: Contract_L3out a:	_8GP										^
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> Em Fitters > Em Falcies > Em Services		QoS Clas Target DSC	<ul> <li>Unspecified</li> <li>Unspecified</li> <li>Target CSCP Market</li> </ul>	ng works cirty if the QoS (	Data is set									L
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#### Contract maken

2. Maak een nieuw L3out naar server 10.100.0.100/24 (ACI zijde SVI 550 met IP-adres 10.100.0.254).

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∨ Щ ти_D	
> 🧮 Application Profiles	
🗸 🧮 Networking	
> 🧮 Bridge Domains	
> 🖿 VRFs	
> 🚞 L2Outs	Properties
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> 🛧 L3out_N3K_BGP	Description action of
✓	beschpton. Optional
> 🧮 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
V 🚍 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 🗸 🛃
> 🔄 Services	Route Profile for Interleak: select a value
Security (Beta)	Route Profile for Redistribution:
	▲ Source
	Route Control for Dampening:
	▲ Address Family Type
	, .,,
L3out maken	



#### Knop aan L3out hechten

TN_D	$\bigcirc \bigcirc \bigcirc \bigcirc$	Logical Interface Profile -	L3out_Static_server_inter	rfaceProfile							00
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> 🚞 Application Profiles									Policy	Faults	History
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> 📰 Bridge Domains		0.0.0									
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L3Outs		<ul> <li>Path</li> </ul>	Side A IP	Side B IP	Secondary IP	IP Address	MAC Address	MTU (bytes)	Encap	Encap Sc	ope
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V 🙆 L3out_Static_server		Pod-1/Node-101/ea11/3				10.100.0.254/24	00.22.80.76.19.77	EDENL	Vian*507	LOCAL	
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> E Configured Nodes											
Logical Interface Profiles	_										
L3out_Static_server_interfaceProfile	l ·										
V 🔤 External EPGs											

#### Interface voor L3out aansluiten

TN_D ©@©	External EPG - EX	T_static_EPG						0.0
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> 🖿 Application Profiles						Policy Operational	Health Faults	History
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> 🔤 Bridge Domains	0000							
> 🖿 VRFs							(	) <u>*</u> X*
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> 📤 L3out_N3K_BGP	Annotations	Click to add a new annotation						
L3out_Static_server	Global Alias							
Logical Node Profiles	Description:							
V E L3out_Static_server_nodeProfile								
> 🚞 Configured Nodes								
Logical Interface Profiles	Contract Exception Text	32771						
L3out_Static_server_interfaceProfile	Contract Dioppeni rag.	100 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:							
> E Contracts	Preferred Group Member:	Exclude Include						
> 🚍 Policies	Jates Ext. EDO Jacintine	Entrand						
> 🚞 Services	India Ext*E>G Isolatori.	Endeed Chemoroid						
Security (Beta)	Subnets:							· +
O Quick Start		<ul> <li>IP Address</li> </ul>	Scope	Name	Aggregate	Route Control Profile	Route Summarization P	olicy
		0.0.0.0/0	External Subnets for the Extern					~
						Show Us	sge Reset	

#### Externe EPG configureren

TN_D ∽ ∰ TN_D > ≧ Application Profiles ~ ₩ Networking	090	External EPG - E	EXT_static_EPG				General	Polic Contracts	Operational nherited Contracts	Health Faults History Subject Labels EPG Labels
> 🖴 Bridge Domains > 🖴 VRFs > 🚔 L2Outs		♥ Healthy 🙁 😗 🤇 Name	Tenant	Tenant Alias	Contract Type	Provided / Consumed	QoS Class	State	Label	Ć ± **∗ Subject Label
✓ I L30uts > I L30uts,N3K_BGP ✓ I L30ut State sense		Contract Type: Contract	TN_D		Contract	Provided	Unspecified	formed		
<ul> <li>✓ End Logical Node Profiles</li> <li>✓ I Louis Logical Node Profiles</li> </ul>										
Configured Nodes     Configured Nodes     El Logical Interface Profiles     El Logical InterfaceProfile     El Lout_Static_server_interfaceProfile										
External EPGs     DXT_static_EPG										

Contract voor gebruik van L3out aansluiten

3. Opzetten van IP SLA-spoorbeleid (IP SLA-monitoringbeleid, beleid van de leden van het spoor, beleid van de Lijst van spoorwegen).

IP SLA-monitorbeleid:

TN_D	$\bigcirc$	IP SLA Monitoring Policy - ICI	MP_Monite	or		
✓ III TN_D	^					
> 🧮 Application Profiles						
> 🛅 Networking		8 7 4 0				
> 🚞 Contracts		Properties				
V 🖬 Policies		Name:	ICMP_Monito	r		
Protocol		Description:				
> 🚍 BFD						
> 🚞 BFD Multihop		SLA Type:	ICMP	ТСР	L2Ping	HTTP
> 🧮 ND RA Prefix		SLA Frequency (sec):	5			
> 🚍 BGP		Detect Multiplier:	3		~	
> 🧮 Custom QoS		Request Data Size (bytes)	28		$\sim$	
> 🚞 Data Plane Policing		Type of Service:	0			
		Operation Timeout (milliseconds):	000			
> 🧮 EIGRP	•	Threshold (milliseconds):	900			
> 🚞 End Point Retention		Threshold (miniseconds).	900			
> 🧮 First Hop Security		Tramc Class value:	0		$\bigcirc$	
> 🧮 HSRP						
> 🧮 IGMP Interface						
> E IGMP Snoop						
V 🖬 IP SLA						
V 🖬 IP SLA Monitoring Policies						
E ICMP_Monitor						
> 🧮 Track Lists						
> 🧮 Track Members						

### IP-SLA-monitorbeleid configureren

IP-SLA-treinleden:

TN_D	000	Track Member -	Server_Physi	ical_IP								0.0
> ∰ TN_D	<u>~</u>								Dellas	01-1-	Foundation	
> 🚞 Application Profiles									Policy	Stats	Faults	History
> 🚞 Networking											0	÷ **-
> 🚞 Contracts		Properties										
🖂 🚍 Policies			Name:	Server_Physical_IP								
V 🚍 Protocol			Description:									
> 🚞 BFD												
> 🚞 BFD Multihop		Track ID Of Object	t To Be Tracked:	2000								
> 🚞 ND RA Prefix		Destination B	P To Be Tracked:	10.100.0.100								
> 🚞 BGP		Scope o	Track Member:	L3Out - L3out_Static_ser	w ~  🚱							
> 🚞 Custom QoS			IPSLA Policy:	ICMP_Monitor	V 🚱		Stat	us of destination track IP				
> 🚞 Data Plane Policing			Deployments:	Node ID	Operation Number	I	Operation Status	Latest Operation Error Message				
> 🚞 DHCP				Pod-1/Node-101	2000		Reachable	OK				
> 🚞 EIGRP												
> 📷 End Point Retention												
First Hop Security												
> 🚞 HSRP												
> 📰 IGMP Interface												
> 🧮 IGMP Snoop												
V 🖿 IP SLA												
V IP SLA Monitoring Policies												
E ICMP_Monitor												
> 🚞 Track Lists												
Track Members												
Server_Physical_IP												

IP toevoegen om beleid te controleren

Lijstbeleid:

TN_D () ()	Track List - Tracking_Server_Physical_IP			0.0
✓ ■ TN_D			F	
> 🚞 Application Profiles	Policy	Stats	Faults	History
> 🖿 Networking			0	± %-
Contracts	Properties			
V Policies	Name: Tracking_Server_Physical_IP			
Protocol	Description: optional			
> 🚍 BFD				
> 🧱 BFD Multihop	Type of Track List: Triveshold percentage			
> 🥅 ND RA Prefix	Percentage Up (percentage): 1			
> 🚍 BGP	Precentage to block be greater than the wrange Count			
> 🚍 Custom QoS	Percentage Uown (percentage). 0  Percentage Down should be less than Percentage Up			
> 🥅 Data Plane Policing	Track list to track member			11 +
> 🚞 DHCP	reador: "Track Member			
> 🚍 EIGRP	• TN_D/Server_Physical_P			
> 🚞 End Point Retention				
First Hop Security				
> 🚞 HSRP				
> 🥅 IGMP Interface				
> 🧮 IGMP Snoop				
V 🚍 IP SLA				
V IP SLA Monitoring Policies				
ICMP_Monitor				
🗠 🚞 Track Lists				
Tracking_Server_Physical_IP				
V 🚍 Track Members				
Server_Physical_IP				

Trainingslijst configureren

4. Het configureren van statische route onder L3out naar server met nieuw gemaakt IP SLA tracklist beleid.

cisco APIC						admin 🔍	0 🖏	0 0
System Tenants Fabric	Virtual Networking	Admin Operations Apps	Integrations					
ALL TENANTS   Add Tenant   Tenant !	Search: name or descr	common   TN_D   dor	wang2   SERVERS   edge					
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~ Щ тм_D								00
> E Application Profiles						Policy	Faults	History
Networking		8000					0	± %-
> 🚞 Bridge Domains		Properties						
> 🖿 VRFs			Node ID: topology/pod-1/node-101					^
> 🚍 L2Outs			Router ID: 101.101.101.101					
✓ I L30uts		Use Router ID as Loopbac	Address: This setting will be ignored if loopback adds	isses are defined in the table below.				
> 13out_N3K_BGP		Loopback /	ddresses:					1 + 1
L3out_Static_server			▲ IP					
Logical Node Profiles	toDeottio				No items have been found.			
	ALL COMP.				Denies Proteing to Grand and the Protein			
E topology/pod-1/m	ode-101							
> El Logical Interface Profi	Nes	<ul> <li>Intersite Loopback A</li> </ul>	ddresses:					
> 🧮 External EPGs			• IP					- T
> 🧱 Route map for import and ex	sport route control				The target have been formed			- 1
> 🔚 SR-MPLS VRF L3Outs					Select Actions to create a new item.			
> 🚞 Dot1Q Tunnels								
> 🔤 Contracts	Leaf 1 N9K-C931	01 80YC-FX						
> E Policies	15.2	2f) Sta	ic Routes:					n + n
> Services		L3out_Static_server	<ul> <li>IP Address</li> </ul>	Description	Track Policy	Next Hop IP		
Security (Beta)	L3Out	Encap vian 507 10.100.0.254/24	200.0.0.1/32		TN_D/Tracking_Server_Physical_IP	10.100.0.100		
> C+ quex start		VRF: TN_D:VRF_S		Static route added with IP	SLA Track which tracking physical IP of server.			
	Physical IP: 10.1	00.0.100/24						*
	Loopback 507:	200.0.0.1/32				Channel Jacobson (1997)		
						Show Usage		

Statische route instellen onder L3out

5. Maak een nieuw L3out naar het N3K-apparaat dat gebruik maakt van Border Gateway Protocol (BGP) (EBGP) ACI AS 65535 en N3K AS 65536.

TN_D		_3 Outside - L3out_N3K_BGP
∨ <b>⊞</b> TN_D		
> Application Profiles		
V 🚍 Networking		
> 🚞 Bridge Domains		
> 🚞 VRFs		
> 🚞 L2Outs		Properties
🗸 🚞 L3Outs		Name: L3out_N3K_BGP
✓		Allds.
V 🖿 Logical Node Profiles		opuorial
V 🗧 L3out_BGP_nodeProfile		
> 🧮 Configured Nodes		Annotations: 🕀 Click to add a new annotation
🗸 🚞 Logical Interface Profiles		Global Alias:
V 🗧 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		
> The second		PIMv6:
> 🚯 L3out_Static_server		Route Control Enforcement: Import
> 🚞 SR-MPLS VRF L3Outs		VRE VRE S
> 🚞 Dot1Q Tunnels		Resolved VRE: TN_D0/RE_S
> 🚍 Contracts	•	L3 Domain: TN_D_L3Dom
> 🧰 Policies		Route Profile for Interleak: select a value
> 🚍 Services		Route Profile for Redistribution:
🚍 Security (Beta)		* Source
> C+ Quick Start		
		Enable BGP/EIGRP/OSPF BGP OSPF EIGRP
		Route Control for Dampening:
		<ul> <li>Address Family Type</li> </ul>

## BGP-protocol configureren

TND ROOM				
സത്ര	Logical Node Profile - L3out_B0	iP_nodeProfile		
✓ ■ TN_0				
> E Application Profiles				
Networking				
> 🚞 Bridge Domains	Properties			
> 🚍 VRFs	Name	: L3out_BGP_nodeProfile		
> 🖴 120xs	Description			
V 🗎 130xs				
V 📣 LSout_NSK_BOP	Ala			
🗸 🚍 Logical Node Profiles	Target DSCI	Unspecified		
V 🕈 L3out_B0P_noduProfile	Noder			
Configured Nodes		<ul> <li>Note D</li> </ul>	Souther (D	Loomback Address
Logical Interface Profiles		trooparingt-1-ingte-102	102 102 102 102	102 102 102 102
I.Sout_NIK_BOP_interfaceProfile		mportrygipter renow res	100.100.100.100	THE THE THE THE
BGP Rear 100.0.0.2 - Node-102/1/3				
V 🚍 Edama (PCs				
F EXT_NOK_BOP_EPG				
> 🚍 Route map for import and export route control				
> 🔂 L3out_Static_server	EGP Peer Connectivity			
> 🛅 SR-MPLS VRF LOOUS		Peer IP Address	Peer Controls	Interface
> 🚞 Dot1Q Turnels		100.0.0.2		Pod-1/Node-102/wth1/3
> 🚞 Contracts				
> 🚍 Rolicius				
> 🚞 Services				
🚞 Security (Beta)				
> O- Quick Start				
	Create BGP Protocol Profile			
	Create BFD Multihop Protocol Profile			
	Create DFD Multihop Protocol Profile			

BGP-peer



#### BGP-peer-beleid configureren



Logisch interfaceprofiel onder L3out configureren

cisco APIC			
System Tenants Fabric Vinual Networking Admin	tmin Operations Apps Integrations		
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V The Networking		General Contracts Inherited Contracts	Subject Labels EPG Labels
> 🔛 Bridge Comains	0000		A 1 4
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> 🔤 L20vis	PTOPITIes Name: DCT. AGK. INCP. (PG)		~
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/ En Control Interfere Problem			
· I had NIE DOD internationalization	pcTag: 16386		
B/P Peer 100 0.0.2 - Note-100/1/0	Contract Deception Tag.		
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> Route map for import and export route control	Uus Jaaas. Uuspeeneed		
> 🕰 L3ovt_Static_server	Trade Directory (Unspectrual Contraction C		
> EE SR-MPLS VIE L3Dus	Comparison status, appino Configuration status		
> 🛅 Dot1Q Tunnels	Preferred Group Member (Centres, Friday)		
> 🔛 Contracts			
> 🔛 Pokces	His Dr. Pro Boston, Enouted University		
> 🔛 Services	Subvets		2 +
E Securty (Beta)	<ul> <li>IP Address</li> <li>Scroe</li> <li>Name</li> <li>Approxim</li> </ul>	Route Control Profile Route Sur	Amarization Policy
> Q+ Quick Start	0.03.00 Deternal Duries for the External DPG		
	200.0.0.1/32 Export Route Control Subnet		

#### Externe EPG-exportsubformaten tijdens doorreis L3out

TN_D	000	External EPG - EXT_N3	K_BGP_EPG						
~ 🗒 т. р									Defense Operational
> 🚞 Application Profiles									Poley Operational
Wetworking								General	Contracts Inherited Contracts
> 🔤 Bridge Domains									
> 🚍 VRFs		O CO CO CO							
> 🚞 L20vis		Name	<ul> <li>Tenant</li> </ul>	Tenant Alias	Contract Type	Provided / Consumed	QoS Class	State	Label
> 🖿 13046		Contract Type: Contract							
V 📤 LSWL/NKLBOP		Contract_L3out_BGP	TN_D		Contract	Consumed	Unspecified	formed	
Logical Node Profiles									
13cut_80P_nodeProfile									
> 🔤 Configured Nodes									
Ecological Interface Profiles									
L3out_NIK_BOP_interfaceProfile									
BCP Peer 100.0.0.2- Node-103/1/3									
v 🚍 External FDOs									
EXT_NOK_BOP_EPG									

Contract voor koppelen aan externe EPG

6. Exporteren van statische route van L3out naar 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
```

## Verifiëren

Gebruik dit gedeelte om te bevestigen dat de configuratie correct werkt.

#### Nexus3K.



Advisering van doorgangsroutes verklaard door topologie

#### 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

Server Loopback is bereikbaar met bron als N3K loopback adres.

#### 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

ACI Leaf 102 routeswitch (dat L3out naar Nexus 3K heeft).

#### 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
```

#### Verlaat 101 IP SLA configuratie verificatie van 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
```

Verificatie met Managed Object Query (Moquery) opdracht:

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

<pre># fv.IPSLAMonitoringH</pre>	201	L
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.TrackMember : Server\_Physical\_IP name annotation : childAction : descr : : uni/tn-TN\_D/trackmember-Server\_Physical\_IP dn dstIpAddr : 10.100.0.100 extMngdBy : : 2000 id 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

# Problemen oplossen

Er is momenteel geen specifieke troubleshooting-informatie beschikbaar voor deze configuratie.

In geval van verbinding of fysiek IP adres onbereikbaar is, toont ACI IP SLA bestemming IP 'timeout' nadat geconfigureerde drempelwaarden zijn bereikt.



TN_D	00	Track Member - Server_Physi	cal_IP			
TN_D     TN_D     TO     Application Profiles						Poli
> 🧮 Networking		8 9 4 0				
> 🖬 Contracts		Properties				
V 🖿 Policies		Name:	Server_Physical_IP			
V 🚞 Protocol		Description:	optional			
> 🚍 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	8W 🗸 🔁		
> 🚞 Custom QoS		IPSLA Policy:	ICMP_Monitor	V 69		
> 🚞 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						
> C IGMP Interface						
> TIGMP Snoop						
IP SLA Monitoring Policies						
> Track Lists						
Track Members						
Server_Physical_IP						

IP SLA monitor linkstatus na link naar beneden

Verlaat 101 CLI-verificatie (u kunt de tijd zien voor "Laatste teruggave code" van handeling).

```
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
```

#### Zodra de server bereikbaar is, toont deze de status OK.

TN_D	OFI	Track Member - Server_Phys	ical_IP					
~ Щ ти_р	^						Defen	Chaba
> C Application Profiles							Policy	Stats
> 🚞 Networking								
> 🚞 Contracts		Properties						
Policies		Name:	Server_Physical_IP					
V 🚍 Protocol		Description:						
> 🚞 8FD								
> 🚞 BFD Multihop		Track ID Of Object To Be Tracked:	2000					
> 🚞 ND RA Prefix		Destination IP To Be Tracked:	10.100.0.100					
> 🚞 8GP		Scope of Track Member:	L3Out - L3out_Static_serv	V 🕑				
> 🚞 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	Reachable	OK		
> 🚞 EIGRP								
> 🚞 End Point Retention								
> 🚞 First Hop Security								
> 🚞 HSRP								
> 🧮 IGMP Interface								
> 🚞 IGMP Snoop								
V 🚞 IP SLA								
> 🚞 IP SLA Monitoring Policies								
> 🧮 Track Lists								
V 🚞 Track Members								
Server_Physical_IP								

IP SLA monitor status na verbinding omhoog gebracht

#### 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

# Gerelateerde informatie

- <u>Cisco APIC Layer 3 Network Configuration Guide, release 5.2(x)</u>
- Technische ondersteuning en documentatie Cisco Systems