Solucionar problemas de rede IMM no domínio UCS com API Explorer e NXOS

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Introduction

Este documento descreve a análise da conectividade de rede ou da vida útil do pacote para um domínio do Unified Computing System (UCS) no modo gerenciado de entrevistas e identifica a conexão interna para servidores com os comandos API Explorer e NXOS.

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Prerequisites

Requirements

A Cisco recomenda que você tenha conhecimento destes tópicos:

- Intersight
- Conectividade de rede física
- Interface de programação de aplicativos (API)

Componentes Utilizados

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

- Interconexão em malha Cisco UCS 6454, firmware 4.2(1e)
- Servidor blade UCSB-B200-M5, firmware 4.2(1a)
- Software como serviço (SaaS) de entrevistas

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

A conexão entre as interconexões de estrutura e a Virtual Network Interface (vNICs) é estabelecida por meio de circuitos virtuais, chamados de Virtual Interface (VIF). Esses VIFs são fixados para uplinks e permitem comunicação com a rede upstream

No Modo Gerenciado de Intersight, não há nenhum comando que mapeie as interfaces virtuais com cada servidor, como **show service-profile circuit**. Os comandos API Explorer/NXOS podem ser usados para determinar a relação dos circuitos internos criados no domínio do UCS.

API Explorer

O API explorer está disponível na interface gráfica do usuário (GUI) de qualquer uma das interconexões de estrutura (primária ou subordinada). Depois de fazer login no console, navegue até Inventário, selecione o servidor e clique em Iniciar API Explorer.



O API Explorer contém uma Referência de API, que lista as chamadas disponíveis. Também inclui uma interface de cliente de transferência de estado representativo (REST) para testar chamadas de API.

cisco API EXPLORER	UCS-T	S-MXC-P25-8454-IMM-1-1 (Server) Guides API Reference			G
API Reference v2019.2	۵	GET	REST Client	REST Client	
Q. Search		Response Model		GET /redfish/v1/AccountService	
AccountService	~				1
GET AccountService		@odsta.context: string (Read Only) The OData description of a payload.		Send	
PATCH AccountService		Grodata.etag: string (Read Only) The current ETag of the resource.			
PUT AccountService	- 1	Codata.id: string (Read Only) The unique identifier for a resource.		Hesponse lext Hesponse into	
AccountService/Accounts	~				
AccountService/ActiveDirectory/Certi	~	AccountLockoutCounterResetAfter: integer The period of time, in seconds, between the tast failed login attempt and the reset of the lockout the counter. This value must be less than or equal to the AccountLockoutDuration value. A reset sets to '0'.	eshold le counter to		
AccountService/ExternalAccountPro	~	Account.ockoutCounterResetEnabled: bociese. An indication of whether the threshold counter is reset after AccountLockoutCounterResetAfte	excires. If		
AccountService/LDAP/Certificates	~	"true", it is reset. If "false", only a successful login resets the threshold counter and if the user AccountLockoutThreshold limit, the account will be locked out indefinitely and only an adminis	aches the rator-issued		
AccountService/Roles	~	reset clears the threshold counter. If this property is absent, the default is 'true'.			
CertificateService	~	AccountLookoutDuration: Integer The period of time, in seconds, that an account is locked after the number of failed login attempts reaches the lockout threshold, within the period between the last failed login attempt and the reset of the lockout threshold, this under a logic action of the lockout threshold.	account counter. If		
CertificateService/Actions/Certificate	~	inte value lo 0, no locador win occor, il inte Accounticocadoricounterreseitichabed value lo laise, inte proper	y is ignored.		
CertificateService/Actions/Certificate	~	Account_bokaut intestinae: integer inte number or atomeo tateo legin attempts before a user account is locked for a specified duration. If 0, a never locked.	e account is		
CertificateService/CertificateLocations	~	Accounts: object			
Chassis	~	Codata.id: string (Read Only) The unique identifier for a resource.			

Identificar o VIF por meio de chamadas de API

Você pode usar um conjunto de chamadas de API para determinar qual VIF corresponde a cada vNIC virtual. Isso permite que você solucione problemas do NXOS com mais eficiência.

Para os fins deste documento, a navegação com chamadas de API é feita através destes itens: Chassi, servidor, adaptador de rede, vNIC/vHBA.

Chamada de API ID do chassi GET

ID do adaptador GET

OBTER detalhes da rede (lista de vnics/vhbas)

GET Funções do dispositivo de rede (configuração vNIC)

Sintaxe /redfish/v1/Chassis /redfish/v1/Chassi/{ChassisId}/Adaptadores de rede /redfish/v1/Chassis/{ChassisId}/NetworkAda pters/{NetworkAdapterId} /redfish/v1/Chassi/{ChassisId}/Adaptadores de rede/{NetworkAdapterId}/NetworkDeviceFu nctions

Recuperar ID do chassi

cisco API EXPLORER UCS-TS	S-MXC-P25-6454-IMM-1-1 (Server) Guides AP	Reference	G
API Reference v2019.2	GET REST Client	REST Client	
Q Search	Response Model	GET /redfish/v1/Chassis	
AccountService 🤍 🗍			
AccountService/Accounts ~	Godata.context: string (Read Only) The OData description of a payload.	200 Success	
AccountService/ActiveDirectory/Certi v	Bodata.etag: string (Read Only) The current ETag of the resource.	Response Text Response Info	
AccountService/ExternalAccountPro v	Godata.type: string (Read Only) The trigger of a resource. Godata.type: string (Read Only) The type of a resource.	, ,	
AccountService/LDAP/Certificates ~	Description: string The description of this resource. Used for commonality in the schema	<pre>3 "@odata.context": "/redfish/vl/\$metadata#ChassisCollection.ChassisCo 3 "@odata.id": "/redfish/vl/Chassis",</pre>	ollecti
AccountService/Roles v	definitions.	4 "@odata.type": "#ChassisCollection.ChassisCollection", 5 "Description": "Collection of Chassis",	
CertificateService ~	Members: coject (Head Only) The members of this collection.	<pre>b "members": (7 {</pre>	
CertificateService/Actions/Certificate CertificateService/Actions	Members@odata.count: integer (Read Only) The number of items in a collection.	9), 10 (
CertificateService.GenerateCS	Members@odata.nextLink: string (Read Only) The URI to the resource containing the	11 "@odata.id": "/redfish/v1/Chassis/1" 12 } 13].	
CertificateService/Actions /CertificateService.ReplaceCertificateService.	next set of parnal members. Name: string The name of the resource or array member.	14 "Menbersgodata.count": 2, 15 "Name": "Chassis Collection"	
CertificateService/CertificateLocations ^	Oem: object	20 2	

/redfish/v1/Chassis/FLM2402001F Recuperar o ID do adaptador de rede



Copie a ID da rede para a próxima chamada da API.

/redfish/v1/Chassis/FLM2402001F/NetworkAdapters/UCSB-MLOM-40G-04_FCH23527C67 Recuperar ID da vNIC

cisco API EXPLORER UCS-T	S-MXC-P25-6454-IMM-1-1 (Server)	Guides API Reference	G
API Reference v2019.2	CET REST Client	REST Client	
Q Search	Parameters Response Model	GET /redfishv1/Chassis/(Chassis/)NetworkAdapters/(NetworkAdapterId)	
C. Describe C. Chardel (Chassistic) Chassistic (Chassistic) C. Chardel (Chassistic) Chassistic) C. Chassistic (Chassistic) C. Chassistic (Chassistic) C. Chassistic (Chassistic) C. Chardel (Chardel (Charde	Parameters Response Model ChassisId (string) path The value of the ld property of the Chassis resource Network/Adapterfd (string) path The value of the ld property of the Network/Adapter resource	GET medialviTiChassisQChassisQCMexerxXdaptersQVESHP.MetworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MetworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MetworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdaptersQUESHP.MEtworkAdapt	
NetworkAapters NetworkDeviceFunctions (NetworkDeviceFunctions (NetworkDeviceFunctions) /Ethermet/VLANs		38 "@odata.14": "/redfish/v1/Chassis/FLRG482801F/NetworkAdapters/UCSB-MLOM-486-84_FCH23527C67/NetworkPorts/Port-2" 39 } 40], 41 "NetworkPortsModata.count": 2	

Copie a ID do adaptador de rede.

```
/redfish/v1/Chassis/FLM2402001F/NetworkAdapters/UCSB-MLOM-40G-
04_FCH23527C67/NetworkDeviceFunctions/Vnic-A
/redfish/v1/Chassis/FLM2402001F/NetworkAdapters/UCSB-MLOM-40G-
04_FCH23527C67/NetworkDeviceFunctions/Vnic-B
```

Recuperar o ID do VIF da vNIC correspondente



Nesse caso, a vNIC-A é mapeada para VIF 800. A partir daqui, os comandos NXOS contêm essa interface virtual.

Identificação de VIF com NXOS e filtros Grep

Se o API Explorer não estiver disponível ou você não tiver acesso à GUI, os comandos CLI podem ser usados para recuperar informações do VIF.

Note: Você deve conhecer o Server Profile para usar esses comandos.

```
UCS-TS-MXC-P25-6454-IMM-A(nx-os) # show run interface | grep prev 1 IMM-Server-1
switchport trunk allowed vsan 1
switchport description SP IMM-Server-1, vHBA vhba-a, Blade:FLM2402001F
- -
interface Vethernet800
description SP IMM-Server-1, vNIC Vnic-A, Blade:FLM2402001F
interface Vethernet803
description SP IMM-Server-1, vNIC Vnic-b, Blade:FLM2402001F
_ _
interface Vethernet804
description SP IMM-Server-1, vHBA vhba-a, Blade:FLM2402001F
Sintaxe do comando
                                                          Uso
show run interface | grep anterior 1 < nome do perfil do
                                                          Lista as redes de marketing associadas a
                                                          cada vNIC/vHBA
servidor>
show run interface | grep prev 1 next 10 < nome do perfil
                                                          Lista a configuração detalhada da
do servidor>
                                                          Vethernet
```

Solução de problemas do NXOS

Depois que a vNIC tiver sido mapeada para a Ethernet correspondente, a análise pode ser feita no NXOS com os mesmos comandos usados para solucionar problemas de interfaces físicas.

A notação para vNICs é veth - Vethernet.

show interface brief mostra Veth800 em estado inativo com ENM Source Pin Failure como o motivo.

UCS-TS-MXC-P25-6454-IMM-A# connect nxos UCS-TS-MXC-P25-6454-IMM-A(nx-os)# show interface brief | grep -i Veth800 Veth800 1 virt trunk down ENM Source Pin Fail auto show interface mostra que a Vethernet 800 está em um estado de inicialização.

UCS-TS-MXC-P25-6454-IMM-A(nx-os)# show interface Vethernet 800 Vethernet800 is down (initializing) Port description is SP IMM-Server-1, vNIC Vnic-A, Blade:FLM2402001F Hardware is Virtual, address is 0000.abcd.dcba Port mode is trunk Speed is auto-speed Duplex mode is auto 300 seconds input rate 0 bits/sec, 0 packets/sec 300 seconds output rate 0 bits/sec, 0 packets/sec Rx 0 unicast packets 0 multicast packets 0 broadcast packets 0 input packets 0 bytes 0 input packet drops Tx 0 unicast packets 0 multicast packets 0 broadcast packets 0 output packets 0 bytes 0 flood packets 0 output packet drops UCS-TS-MXC-P25-6454-IMM-A(nx-os)# show running-config interface Vethernet 800 !Command: show running-config interface Vethernet800 !Running configuration last done at: Mon Sep 27 16:03:46 2021 !Time: Tue Sep 28 14:35:22 2021 version 9.3(5)I42(1e) Bios:version 05.42 interface Vethernet800 description SP IMM-Server-1, vNIC Vnic-A, Blade:FLM2402001F no 11dp transmit no 11dp receive no pinning server sticky pinning server pinning-failure link-down no cdp enable switchport mode trunk switchport trunk allowed vlan 1,470 hardware vethernet mac filtering per-vlan bind interface port-channel1280 channel 800 service-policy type qos input default-IMM-QOS no shutdown

Um VIF precisa ser fixado a uma interface de uplink; nesse cenário, o **show pinning border interface** não exibe a Ethernet fixada a nenhum uplink.

UCS-TS-MXC-P25-6454-IMM-A(nx-os)# show pinning border-interfaces ------+ +-------Border Interface Status SIFs ------+ ------Eth1/45 Active sup-eth1 Eth1/46 Active Eth1/1/33 Isso indica que os uplinks exigem configuração adicional. Esta saída corresponde ao comando show running configuration do Ethernet Uplink 1/46.

UCS-TS-MXC-P25-6454-IMM-B(nx-os)# show running-config interface ethernet 1/45 !Command: show running-config interface Ethernet1/45 !No configuration change since last restart !Time: Wed Sep 29 05:15:21 2021 version 9.3(5)I42(1e) Bios:version 05.42 interface Ethernet1/45 description Uplink pinning border switchport mode trunk switchport trunk allowed vlan 69,470 no shutdown **show mac address-table** details que Veth800 usa VLAN 1 que não está presente nos uplinks.

Em um domínio UCS, a VLAN em uso deve ser incluída na vNIC e nos uplinks também. A política de VLAN configura as VLANs nas interconexões de estrutura. A imagem mostra a configuração desse domínio UCS.

≡	cisco Intersight		CONFIGURE > Policies > vlans-IMM Q 🖬 313 ▲ 272 🛛 🗹						4 \$32 Q, ⊙ ⊙	Luis Uribe Rojas 🔬		
<u>ulo</u>												Edit Policy
Ŷ			Details	Usage							Configuration	
	Servers Chassis		Name vlans-IMM Description - Type VLAN	4 items found 10 - → per page K < 1 of 1 ≥ > Ø							VLAN ID 69 Name / Prefix	
	HunerFlay Clusters		Usage 4			Status 0	Platform Type			Last Update 🔅	Auto Allow On Uplinks	Yes
	Storane		Last uppare Juli 19, 2021 5:43 PM			© 0К	UCS Domain	Profile		Aug 24, 2021 6:2		
×	CONFIGURE		Tags Set				UCS Domain	Profile		Aug 24, 2021 6:2	VLAN ID 4/U	
~	Orchestration		naga sot				UCS Domain	Profile		Jul 27, 2021 8:1	Multicast	multicast-IMM is Yes
							UCS Domain	Profile		Jul 27, 2021 8:1	Auto Allow On Uplinks	
	Templates										Native VLAN ID	
	Policies											
¢	ADMIN											
	Targets											
	Software Repository											

A VLAN 1 não está presente na política, portanto ela deve ser adicionada.

Selecione **Editar política** para permitir a conectividade. Essa alteração exige a implantação do Perfil de domínio do UCS.

=												
<u>ello</u>												
Ŷ			{ ` }	tails ails								
	Policy Details		್ರೇನ್									
			This policy is applicable only for UCS Domains									
×												
			This policy is associated with Profile(s). Redeploy the associated profile(s) for these changes to take effect.	otake ^{3 i}								
œ												
	< Back	Cancel								Update		

=	cisco Intersight	CONFIGURE > Profiles		¢	🖬 313 🔺 272 🛛 🗹	ç \$ 32 ♀ ④	Luis Uribe Re	ojas &
<u>00</u> 0	MONITOR	HyperFlex Cluster Profiles UCS Chassis Profiles UCS Do	main Profiles UCS Server Profiles				Create UCS Domain P	rofile
ø	OPERATE /							_
						ms found 10 ✓ per page ⊠ <		٢
				UCS I Fabric Interconnect A	Jornain Fabric Interconnect B	Last Update		ş
	Fabric Interconnects		© OK			2 hours ago		
	HyperFlex Clusters					2 hours ago		
	Storage	••• 🖉 🖉 🗎 Selected 1 of 2 Show Selected Uns					Deploy	
×	CONFIGURE						Unassign	
	Orchestration						Edit	
	Profiles						Clone	
	Templates							
ø								
	Targets							
	Software Repository							

A atribuição de VLAN pode ser verificada por CLI:

UCS-TS-MXC-P25-6454-IMM-A(nx-os)# show running-config interface ethernet 1/45 !Command: show running-config interface Ethernet1/45 !Running configuration last done at: Wed Sep 29 07:50:43 2021 !Time: Wed Sep 29 07:59:31 2021 version 9.3(5)I42(1e) Bios:version 05.42 interface Ethernet1/45 description Uplink pinning border switchport mode trunk switchport trunk allowed vlan 1,69,470 udld disable no shutdown UCS-TS-MXC-P25-6454-IMM-A(nx-os)#

Agora que as VLANs necessárias foram adicionadas, o mesmo conjunto de comandos pode ser usado para verificar a conectividade no Vethernet800:

UCS-TS-MXC-P25-6454-IMM-A(nx-os)# show interface brief | grep -i Veth800 Veth800 1 virt trunk up none auto UCS-TS-MXC-P25-6454-IMM-A(nx-os)# show interface Vethernet 800 Vethernet800 is up Port description is SP IMM-Server-1, vNIC Vnic-A, Blade:FLM2402001F Hardware is Virtual, address is 0000.abcd.dcba Port mode is trunk Speed is auto-speed Duplex mode is auto 300 seconds input rate 0 bits/sec, 0 packets/sec 300 seconds output rate 0 bits/sec, 0 packets/sec Rx 0 unicast packets 1 multicast packets 6 broadcast packets 7 input packets 438 bytes 0 input packet drops Tx 0 unicast packets 25123 multicast packets 137089 broadcast packets 162212 output packets 11013203 bytes 0 flood packets 0 output packet drops UCS-TS-MXC-P25-6454-IMM-A(nx-os)# show runningconfig interface Vethernet 800 !Command: show running-config interface Vethernet800 !Running configuration last done at: Wed Sep 29 07:50:43 2021 !Time: Wed Sep 29 07:55:51 2021 version 9.3(5)I42(1e) Bios:version 05.42 interface Vethernet800 description SP IMM-Server-1, vNIC Vnic-A, Blade:FLM2402001F no 11dp transmit no 11dp receive no pinning server sticky pinning server pinning-failure link-down switchport mode trunk switchport trunk allowed vlan 1,69,470 hardware vethernet mac filtering per-vlan bind interface port-channel1280 channel 800 service-policy type gos input default-IMM-QOS no shutdown

Veth800 está listado nas interfaces pinned para as interfaces Ethernet de uplink:

Informações Relacionadas

- Perfis de domínio no Intersight
- Perfis de servidor no Intersight
- Políticas de domínio em entrevistas
- Suporte Técnico e Documentação Cisco Systems