使用Nexus 1000V跟踪UCS中的MAC地址

目录

简介

本文档介绍如何在以下网络级别跟踪虚拟机(VM)和VMkernel(VMK)接口的MAC地址：

- Cisco Nexus 5000 系列交换机
- 思科统一计算系统(UCS)6248交换矩阵互联(FI)
- VMware ESXi主机
- Cisco Nexus 1000V交换机

了解VM或VMK接口在故障排除和设计方面用于通信的上行链路非常重要。

先决条件

要求

Cisco 建议您了解以下主题：

- 思科NX-OS中的vPC功能
- 思科统一计算系统
- VMware ESXi
- Cisco Nexus 1000V交换机

使用的组件

本文档中的信息基于以下软件和硬件版本：

- 思科Nexus 5020交换机版本5.0(3)N2(2a)
- 思科统一计算系统版本2.1(1d)
- 思科统一计算系统B200 M3刀片服务器，带思科虚拟接口卡(VIC)1240(Palo)CNAvSphere 5.1（ESXi和vCenter）
- 思科Nexus 1000V交换机版本4.2(1)SV2(1.1a)

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原

始（默认）配置。如果您使用的是真实网络，请确保您已经了解所有命令的潜在影响。

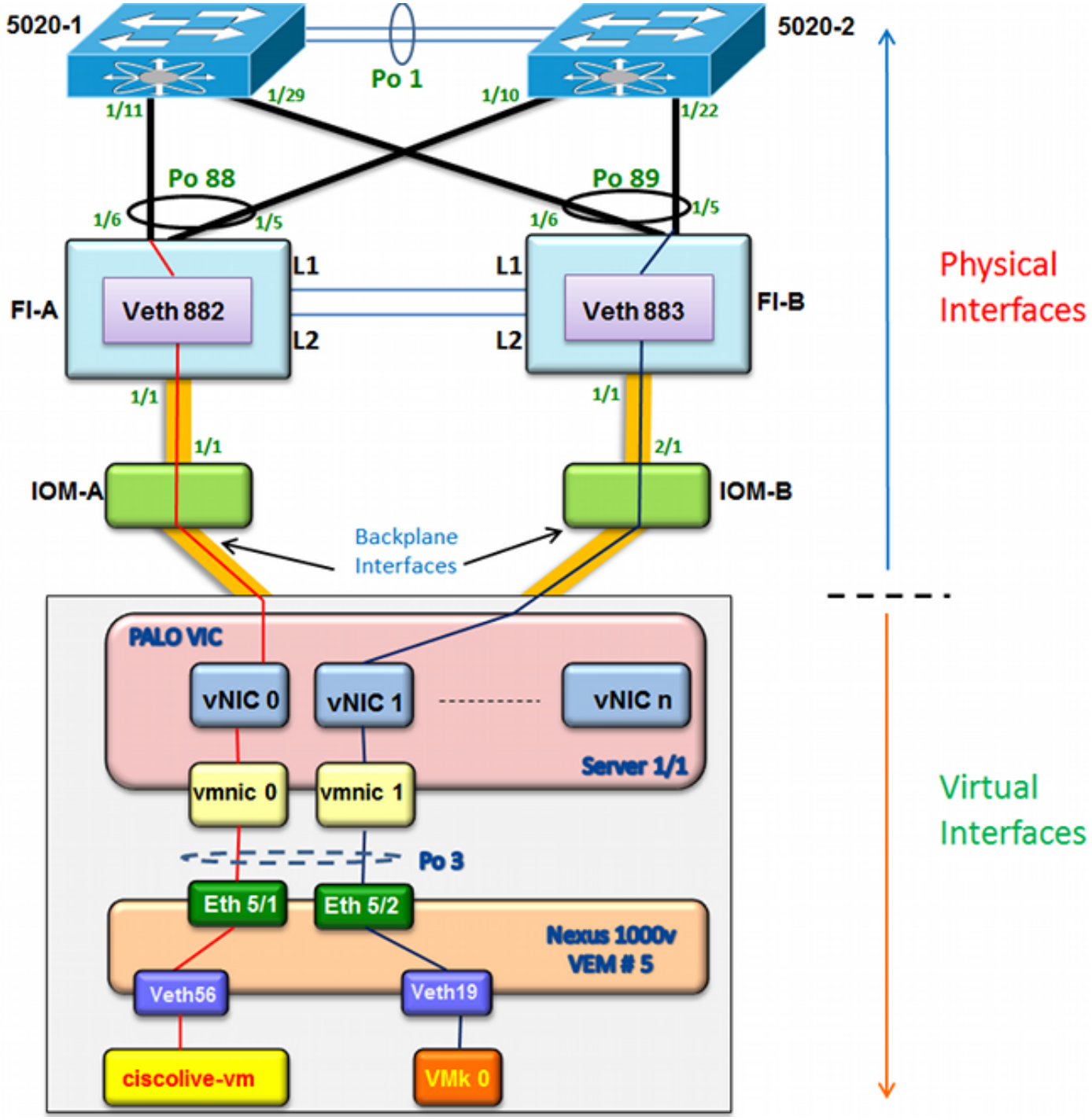
配置

网络拓扑

在本示例设置中，VM和VMK接口位于同一主机（IP地址172.16.18.236）和同一VLAN 18(子网172.16.18.0/24)上。

在Nexus 1000V中，主机表示为虚拟以太网模块(VEM)# 5。

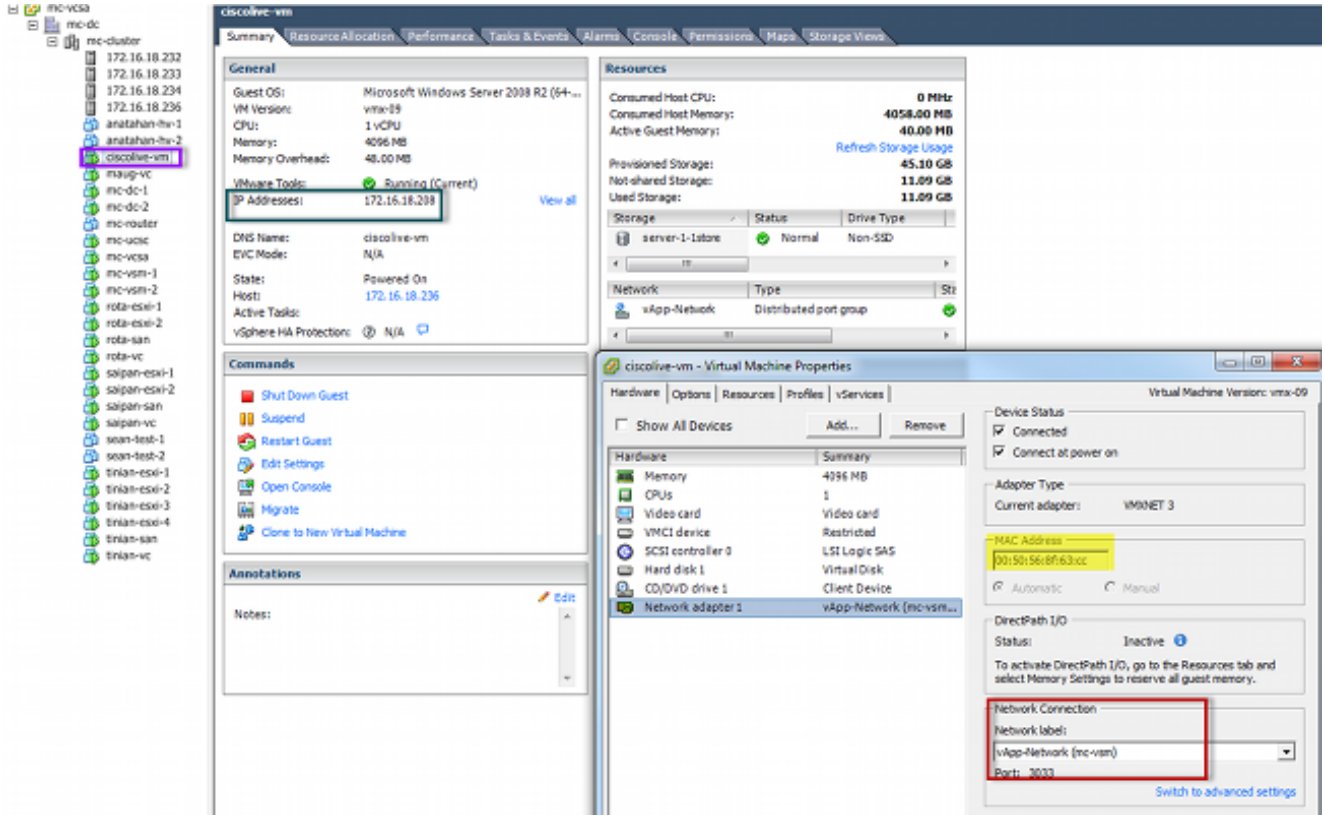
在UCS中，主机安装在机箱1的刀片1上。



跟踪不同网段的MAC地址

此过程描述如何跟踪不同网络级别的MAC地址。

1. 在vCenter中，查找要跟踪的VM的MAC地址。在本示例中，VM(ciscolive-vm)的MAC地址为0050:568f:63cc:



2. 在ESXi外壳上输入**esxcfg-vmknic -l**命令，以便从主机查找VMK接口的MAC地址。在本例中，VMK(vmk0)是管理接口，其MAC地址为0050:56:67:8e:b9:

```
mc-vsm# show mac address-table | in 8eb9
18         0050.5667.8eb9    static  0         Veth19                    5
18         0050.5667.8eb9    dynamic 0         Po4                       6
mc-vsm# show mac address-table | in 63cc
18         0050.568f.63cc    dynamic 93        Po1                       3
18         0050.568f.63cc    dynamic 93        Po2                       4
18         0050.568f.63cc    static  0         Veth56                    5
18         0050.568f.63cc    dynamic 93        Po4                       6
mc-vsm#
```

3. 确认VM(ciscolive-vm)和VMK接口(vmk0)的MAC地址是在ESXi主机(VEM)和Nexus 1000V上获取的。

   在VEM级别，输入**vemcmd show l2 18**命令以确认两个MAC地址都已获知：

```
~ # vemcmd show 12 18
Bridge domain     7 brtmax 4096, brtcnt 82, timeout 300
VLAN 18, swbd 18, ""
Flags:  P - PVLAN  S - Secure  D - Drop
        Type          MAC Address    LTL    timeout    Flags     PVLAN
      Static    00:50:56:8f:61:8b     75          0
      Static    00:50:56:8f:a4:a5     67          0
     Dynamic    00:50:56:5f:e9:a8     52          1
      Static    00:50:56:8f:51:97     78          0
     Dynamic    00:0c:29:15:fa:c6    305         27
     Dynamic    00:50:56:5f:88:58     60          1
      Static    00:50:56:8f:63:cc     68          0
     Dynamic    00:50:56:5f:7c:bd     59          1
     Dynamic    00:50:56:a2:14:f2     57          1
      Static    00:50:56:8f:11:3a     50          0
      Static    00:50:56:8f:f5:53     65          0
     Dynamic    00:50:56:a2:46:25     54          1
     Dynamic    00:50:56:8f:62:56    305          2
      Static    00:50:56:8f:21:35     54          0
     Dynamic    00:50:56:8f:86:19    305        192
      Static    00:50:56:8f:d5:fd     58          0
     Dynamic    00:02:3d:40:dd:03    305          4
     Dynamic    00:50:56:b7:70:37    305          1
     Dynamic    00:50:56:8f:c5:07    305          1
     Dynamic    00:50:56:8f:81:09    305        230
     Dynamic    00:0c:29:8b:01:22    305         73
     Dynamic    00:50:56:8f:54:48    305          6
     Dynamic    00:50:56:63:8f:4d     59          1
     Dynamic    00:50:56:8f:17:20    305          0
     Dynamic    00:50:56:8f:90:5b    305         60
      Static    00:50:56:8f:a1:3a     66          0
      Static    00:50:56:8f:45:0b     64          0
     Dynamic    00:50:56:a2:32:6f     63          2
     Dynamic    00:50:56:5f:19:5c     63          1
      Static    00:50:56:8f:90:a4     51          0
      Static    00:50:56:67:8e:b9     49          0
     Dynamic    00:25:b5:10:10:4f    305        306
```

在Nexus 1000V级别，输入**show mac address-table命令**，以确认VEM # 5上的VLAN 18上是否同时获取了两个MAC地址：

```
mc-vsm# show mac address-table | in 8eb9
18         0050.5667.8eb9    static  0          Veth19                         5
18         0050.5667.8eb9    dynamic 0          Po4                            6
mc-vsm# show mac address-table | in 63cc
18         0050.568f.63cc    dynamic 93         Po1                            3
18         0050.568f.63cc    dynamic 93         Po2                            4
18         0050.568f.63cc    static  0          Veth56                         5
18         0050.568f.63cc    dynamic 93         Po4                            6
mc-vsm#
```

为VEM # 5输入**show port-channel summary命令**，以查看端口通道和成员端口：

```
mc-vsm#
mc-vsm# show port-channel summary
Flags:  D - Down         P - Up in port-channel (members)
        I - Individual   H - Hot-standby (LACP only)
        s - Suspended    r - Module-removed
        S - Switched     R - Routed
        U - Up (port-channel)
--------------------------------------------------------------------------------
Group Port-       Type     Protocol  Member Ports
      Channel
--------------------------------------------------------------------------------
1     Po1(SU)     Eth      NONE      Eth3/1(P)    Eth3/2(P)    Eth3/9(r)
                                     Eth3/10(r)
2     Po2(SU)     Eth      NONE      Eth4/1(P)    Eth4/2(P)    Eth4/9(P)
                                     Eth4/10(P)
3     Po3(SU)     Eth      NONE      Eth5/1(P)    Eth5/2(P)    Eth5/9(r)
                                     Eth5/10(r)
4     Po4(SU)     Eth      NONE      Eth6/1(P)    Eth6/2(P)    Eth6/11(P)
                                     Eth6/12(P)
```

4. 从Nexus 1000V收集更多详细信息。

   输入**show interface vethernet 56**命令，以查看Veth56与VM(ciscolive-vm)对应：

```
mc-vsm# show interface vethernet 56
Vethernet56 is up
  Port description is ciscolive-vm, Network Adapter 1
  Hardware: Virtual, address: 0050.568f.63cc (bia 0050.568f.63cc)
  Owner is VM "ciscolive-vm", adapter is Network Adapter 1
  Active on module 5
  VMware DVS port 3033
  Port-Profile is vApp-Network
  Port mode is access
  5 minute input rate 80 bits/second, 0 packets/second
  5 minute output rate 12552 bits/second, 8 packets/second
  Rx
    23795 Input Packets 7293075158593488853 Unicast Packets
    203449390 Multicast Packets 4294967761 Broadcast Packets
    2333878 Bytes
  Tx
    1350625 Output Packets 4768 Unicast Packets
    519692101807 Multicast Packets 4321524090 Broadcast Packets 1345857 Flood Packets
    254466737 Bytes
    0 Input Packet Drops 0 Output Packet Drops
```

   输入**show interface vethernet 19**命令，以查看Veth19与主机的VMK接口(vmk0)对应：

```
mc-vsm# show interface vethernet 19
Vethernet19 is up
  Port description is VMware VMkernel, vmk0
  Hardware: Virtual, address: 0050.5667.8eb9 (bia 0050.5667.8eb9)
  Owner is VMware VMkernel, adapter is vmk0
  Active on module 5
  VMware DVS port 2110
  Port-Profile is 13
  Port mode is access
  5 minute input rate 12904 bits/second, 1 packets/second
  5 minute output rate 13384 bits/second, 8 packets/second
  Rx
    12200 Input Packets 7310589476873731518 Unicast Packets
    7310589476867241067 Multicast Packets 873444753044241742 Broadcast Packets
    16040625 Bytes
  Tx
    65549 Output Packets 3731 Unicast Packets
    141938759046 Multicast Packets 137454132371 Broadcast Packets 59221 Flood Packets
    12416427 Bytes
    82273436451366782555 Input Packet Drops 210453427045 Output Packet Drops
```

5. 检查从VM(ciscolive-vm)和VMK接口(vmk0)到主机的上游接口的流量的固定。

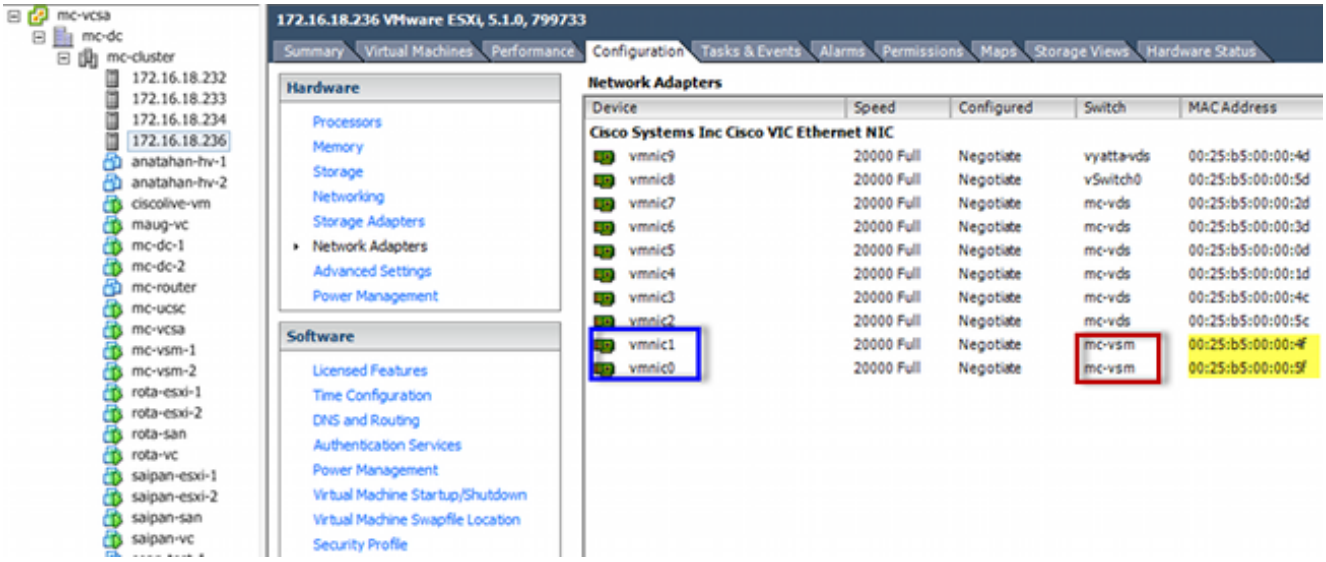
```
mc-vsm# module vem 5 execute vemcmd show port vsm
  LTL    VSM Port  Admin Link  State  PC-LTL  SGID  Vem Port  Type
    6    Internal  DOWN  UP    FWD         0              vns
    8    Internal    UP  UP    FWD         0
    9    Internal  DOWN  DOWN  FWD         0
   10    Internal  DOWN  DOWN  FWD         0     0
   11    Internal  DOWN  DOWN  FWD         0
   12    Internal  DOWN  DOWN  FWD         0     0
   14    Internal  DOWN  DOWN  FWD         0
   15    Internal  DOWN  DOWN  FWD         0
   16    Internal  DOWN  DOWN  FWD         0              ar
   17      Eth5/1    UP  UP    FWD       305     0     vmnic0
   18      Eth5/2    UP  UP    FWD       305     1     vmnic1
   49      Veth19    UP  UP    FWD         0     1       vmk0
   50      Veth23    UP  UP    FWD         0     1  tinian-san.eth0
   51      Veth38    UP  UP    F/B*        0     0  tinian-esxi-1.eth3
   52      Veth37    UP  UP    F/B*        0     0  tinian-esxi-1.eth2
   53      Veth22    UP  UP    F/B*        0     1  tinian-esxi-1.eth1
   54      Veth21    UP  UP    F/B*        0     0  tinian-esxi-1.eth0
   55      Veth36    UP  UP    F/B*        0     1  tinian-esxi-2.eth3
   56      Veth35    UP  UP    F/B*        0     0  tinian-esxi-2.eth2
   57      Veth25    UP  UP    F/B*        0     1  tinian-esxi-2.eth1
   58      Veth24    UP  UP    F/B*        0     0  tinian-esxi-2.eth0
   59      Veth43    UP  UP    F/B*        0     1  tinian-esxi-3.eth3
   60      Veth44    UP  UP    F/B*        0     0  tinian-esxi-3.eth2
   61      Veth45    UP  UP    F/B*        0     1  tinian-esxi-3.eth1
   62      Veth46    UP  UP    F/B*        0     0  tinian-esxi-3.eth0
   63      Veth47    UP  UP    F/B*        0     1  tinian-esxi-4.eth3
   64      Veth48    UP  UP    F/B*        0     0  tinian-esxi-4.eth2
   65      Veth49    UP  UP    F/B*        0     1  tinian-esxi-4.eth1
   66      Veth50    UP  UP    F/B*        0     0  tinian-esxi-4.eth0
   67      Veth26    UP  UP    FWD         0     1  tinian-vc.eth0
   68      Veth56    UP  UP    FWD         0     0  ciscolive-vm.eth0
   69      Veth31    UP  UP    FWD         0     1  maug-vc.eth0
   75      Veth59    UP  UP    FWD         0     0  mc-ucsc.eth0
   78      Veth72    UP  UP    FWD         0     1  mc-dc-2.eth0
  305        Po3    UP  UP    FWD         0

* F/B: Port is BLOCKED on some of the vlans.
       One or more vlans are either not created or
       not in the list of allowed vlans for this port.
 Please run "vemcmd show port vlans" to see the details.
mc-vsm#
```

此输出显示VM(ciscolive-vm)和VMK接口(vmk0)到其相应VM网络接口控制器(VMNIC)的用户组ID(SGID)映射。 映射显示了哪些VMNIC用于通信：

- VM(ciscolive-vm)的SGID 0与vmnic0的SGID 0匹配。
- VMK接口(vmk0)的SGID 1与vmnic1的SGID 1匹配。

6. 从vCenter或ESXi命令行界面(CLI)获取VMNIC的MAC地址。

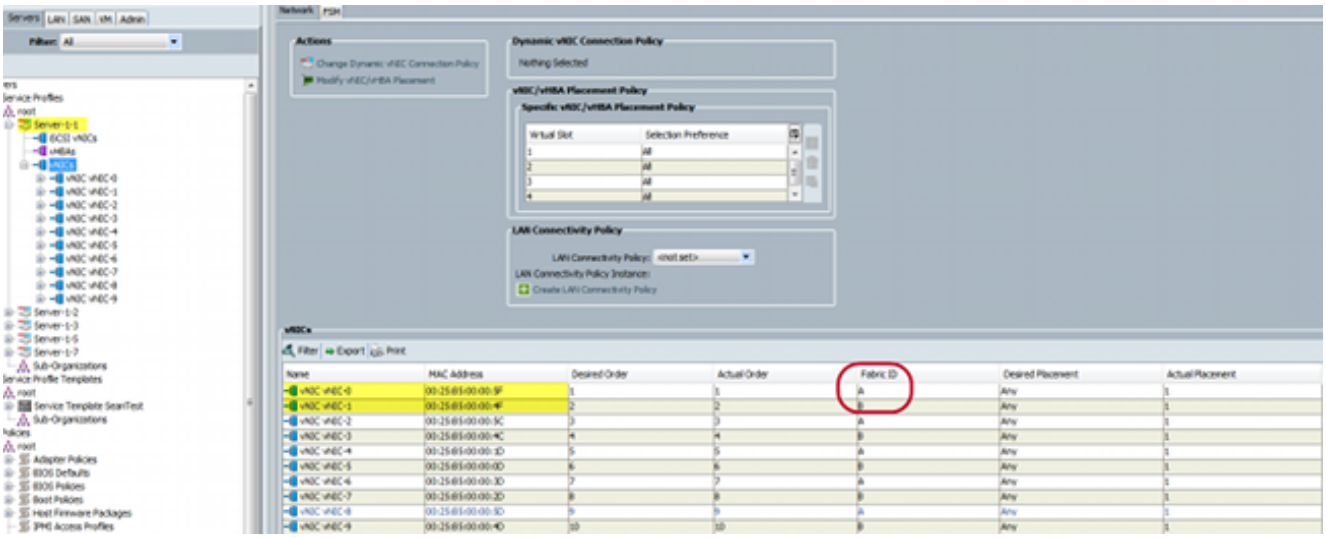
在vCenter中，导航至**Configuration**标记：



在ESXi CLI上，输入**esxcfg-nics -1命**令：

```
~ # esxcfg-nics -l
Name    PCI           Driver      Link Speed      Duplex MAC Address       MTU    Description
vmnic0  0000:06:00.00 enic        Up   20000Mbps  Full   00:25:b5:00:00:5f 1500   Cisco Systems Inc Cisco VIC Ethernet NIC
vmnic1  0000:07:00.00 enic        Up   20000Mbps  Full   00:25:b5:00:00:4f 1500   Cisco Systems Inc Cisco VIC Ethernet NIC
vmnic2  0000:08:00.00 enic        Up   20000Mbps  Full   00:25:b5:00:00:5c 9000   Cisco Systems Inc Cisco VIC Ethernet NIC
vmnic3  0000:09:00.00 enic        Up   20000Mbps  Full   00:25:b5:00:00:4c 9000   Cisco Systems Inc Cisco VIC Ethernet NIC
vmnic4  0000:0a:00.00 enic        Up   20000Mbps  Full   00:25:b5:00:00:1d 9000   Cisco Systems Inc Cisco VIC Ethernet NIC
vmnic5  0000:0b:00.00 enic        Up   20000Mbps  Full   00:25:b5:00:00:0d 9000   Cisco Systems Inc Cisco VIC Ethernet NIC
vmnic6  0000:0c:00.00 enic        Up   20000Mbps  Full   00:25:b5:00:00:3d 9000   Cisco Systems Inc Cisco VIC Ethernet NIC
vmnic7  0000:0d:00.00 enic        Up   20000Mbps  Full   00:25:b5:00:00:2d 9000   Cisco Systems Inc Cisco VIC Ethernet NIC
vmnic8  0000:0e:00.00 enic        Up   20000Mbps  Full   00:25:b5:00:00:5d 9000   Cisco Systems Inc Cisco VIC Ethernet NIC
vmnic9  0000:0f:00.00 enic        Up   20000Mbps  Full   00:25:b5:00:00:4d 9000   Cisco Systems Inc Cisco VIC Ethernet NIC
```

7. 在UCS Manager(UCSM)中，找到与VMNIC对应的UCS的虚拟网络接口控制器(vNIC):



vNIC-0的主FI是FI-A，vNIC-1的主FI是FI-B。您现在可以推断来自VM(ciscolive-vm)的流量通过FI-A，而来自VMK接口(vmk0)的流量通过FI-B。

8. 确认VM(ciscolive-vm)的MAC地址是在FI-A上获取的：

```
Mike-Cliff-Pod-16-A(nxos)# show mac address-table | in 63cc
* 18        0050.568f.63cc    dynamic    0          F     F  Veth882
Mike-Cliff-Pod-16-A(nxos)#
Mike-Cliff-Pod-16-A(nxos)# show int vethernet 882
Vethernet882 is up
    Bound Interface is port-channel1288
  Hardware: Virtual, address: 547f.eea2.5ac0 (bia 547f.eea2.5ac0)
  Description: server 1/1, VNIC vNIC-0
  Encapsulation ARPA
  Port mode is trunk
  EtherType is 0x8100
  Rx
    38196726 unicast packets  130708 multicast packets  99167 broadcast packets
    38426601 input packets  44470647026 bytes
    0 input packet drops
  Tx
    18711011 unicast packets  552876 multicast packets  10560283 broadcast packets
    29824170 output packets  9379742901 bytes
    0 flood packets
    0 output packet drops
```

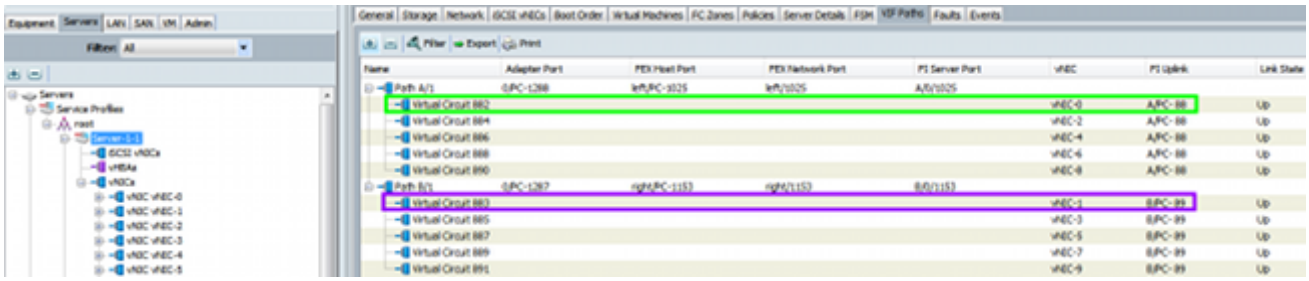
9. 确认VMK接口(vmk0)的MAC地址是在FI-B上获取的：

```
Mike-Cliff-Pod-16-B(nxos)# show mac address-table | in 8eb9
* 18        0050.5667.8eb9    dynamic    0          F     F  Veth883
Mike-Cliff-Pod-16-B(nxos)#
Mike-Cliff-Pod-16-B(nxos)# show int vethernet 883
Vethernet883 is up
    Bound Interface is port-channel1287
  Hardware: Virtual, address: 547f.eea3.c7e0 (bia 547f.eea3.c7e0)
  Description: server 1/1, VNIC vNIC-1
  Encapsulation ARPA
  Port mode is trunk
  EtherType is 0x8100
  Rx
    30553743 unicast packets  94871 multicast packets  1633080 broadcast packets
    32281694 input packets  32522468006 bytes
    0 input packet drops
  Tx
    16919347 unicast packets  588794 multicast packets  8994408 broadcast packets
    26502549 output packets  8364051391 bytes
    0 flood packets
    0 output packet drops
```

10. 使用show circuit detail命令检查这些Veth到其上行链**路的固定**情况：

```
Mike-Cliff-Pod-16-B /org/service-profile # show circuit detail
Service Profile: Server-1-1
Server: 1/1
    Fabric ID: A
        VIF: 882
        vNIC: vNIC-0
        Link State: Up
        Oper State: Active
        State Reason:
        Admin Pin: 0/0
        Oper Pin: 0/88
        Encap: Virtual
        Transport: Ether
    Fabric ID: B
        VIF: 883
        vNIC: vNIC-1
        Link State: Up
        Oper State: Active
        State Reason:
        Admin Pin: 0/0
        Oper Pin: 0/89
        Encap: Virtual
        Transport: Ether
```

注意：输出类似信息的其他命令**是show pinning server-interfaces、show pinning border-interfaces和show pinning interface vethernet x**。您还可以检查UCSM中的钉扎：



11. 收集有关端口通道的其他详细信息。在此配置中，每个FI使用三个端口通道。例如，FI-B有三个关联的端口通道：

- 端口通道89是FI-B和上游Nexus 5020之间的链路聚合控制协议(LACP)端口通道。
- 端口通道1153是自动创建的，在FI-B和输入/输出模块(IOM)-B之间。
- 端口通道1287是自动创建的，在IOM-B和Cisco VIC 1240（刀片）之间。

1. 输入**show port-channel summary**命令以查看FI-B的端口通道配置：

```
Mike-Cliff-Pod-16-B(nxos)# show port-channel summary
Flags:  D - Down        P - Up in port-channel (members)
        I - Individual  H - Hot-standby (LACP only)
        s - Suspended   r - Module-removed
        S - Switched    R - Routed
        U - Up (port-channel)
--------------------------------------------------------------------------------
Group Port-       Type     Protocol  Member Ports
      Channel
--------------------------------------------------------------------------------
89    Po89(SU)    Eth      LACP      Eth1/5(P)    Eth1/6(P)
1153  Po1153(SU)  Eth      NONE      Eth1/1(P)
1287  Po1287(SU)  Eth      NONE      Eth1/1/1(P)  Eth1/1/3(P)
Mike-Cliff-Pod-16-B(nxos)#
```

2. 输入show cdp neighbors命令以发现和查看有关FI-B的其他信息：

```
Mike-Cliff-Pod-16-B(nxos)# show cdp neighbors
Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater,
                  V - VoIP-Phone, D - Remotely-Managed-Device,
                  s - Supports-STP-Dispute

Device-ID              Local Intrfce Hldtme Capability  Platform      Port ID

SJ-SV-C4K-1            mgmt0         179    R S I     WS-C4506      Gig5/40
N5K-Rack16-2(FLC12110027)Eth1/5        163    S I s     N5K-C5020P-BA Eth1/22
N5K-Rack16-1(SSI1351055H)Eth1/6        157    S I s     N5K-C5020P-BF Eth1/29
mc-vsm(19813088413551897l9)Eth1/1/3    160    S I s     Nexus1000V    Eth5/2
```

3. 输入show port-channel summary命令以查看FI-A的端口通道配置：

```
Mike-Cliff-Pod-16-A(nxos)# show port-channel summary
Flags:  D - Down        P - Up in port-channel (members)
        I - Individual  H - Hot-standby (LACP only)
        s - Suspended   r - Module-removed
        S - Switched    R - Routed
        U - Up (port-channel)
--------------------------------------------------------------------------------
Group Port-       Type     Protocol  Member Ports
      Channel
--------------------------------------------------------------------------------
88    Po88(SU)    Eth      LACP      Eth1/5(P)    Eth1/6(P)
1025  Po1025(SU)  Eth      NONE      Eth1/1(P)
1288  Po1288(SU)  Eth      NONE      Eth1/1/1(P)  Eth1/1/3(P)
Mike-Cliff-Pod-16-A(nxos)#
```

4. 输入show cdp neighbors命令以发现和查看有关FI-A的其他信息：

```
Mike-Cliff-Pod-16-A(nxos)# show cdp neighbors
Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater,
                  V - VoIP-Phone, D - Remotely-Managed-Device,
                  s - Supports-STP-Dispute

Device-ID              Local Intrfce Hldtme Capability  Platform      Port ID

SJ-SV-C4K-1            mgmt0         142    R S I     WS-C4506      Gig5/39
N5K-Rack16-2(FLC12110027)Eth1/5        147    S I s     N5K-C5020P-BA Eth1/10
N5K-Rack16-1(SSI1351055H)Eth1/6        121    S I s     N5K-C5020P-BF Eth1/11
mc-vsm(1981308841355189719)Eth1/1/1      167    S I s     Nexus1000V    Eth5/1
```

12. 从端口通道确定成员接口的特定固定。

    输入**show port-channel**命令，以查看FI-B - VMK接口(vmk0)MAC地址被固定到端口通道89的Ethernet1/6:

```
Mike-Cliff-Pod-16-B(nxos)# show port-channel load-balance forwarding-path interface port-channel 1287 vlan 18 src-mac 0050.5667.8eb9 dst-ip 172.16.18.1
Missing params will be substituted by 0's.
Load-balance Algorithm on FEX: source-dest-ip
crc8_hash: 209  Outgoing port id: Ethernet1/1/3
Param(s) used to calculate load-balance:
        dst-ip:  172.16.18.1
        src-ip:  0.0.0.0
        dst-mac: 0000.0000.0000
        src-mac: 0050.5667.8eb9
Mike-Cliff-Pod-16-B(nxos)#
Mike-Cliff-Pod-16-B(nxos)#
Mike-Cliff-Pod-16-B(nxos)# show port-channel load-balance forwarding-path interface port-channel 89 vlan 18 src-mac 0050.5667.8eb9 dst-ip 172.16.18.1
Missing params will be substituted by 0's.
Load-balance Algorithm on switch: source-dest-ip
crc8_hash: 5    Outgoing port id: Ethernet1/6
Param(s) used to calculate load-balance:
        dst-ip:  172.16.18.1
        src-ip:  0.0.0.0
        dst-mac: 0000.0000.0000
        src-mac: 0050.5667.8eb9
Mike-Cliff-Pod-16-B(nxos)#
```

    输入**show port-channel**命令，以查看FI-A - VM(ciscolive-vm)MAC地址已固定到端口通道88的Ethernet1/5:

```
Mike-Cliff-Pod-16-A(nxos)#  show port-channel load-balance forwarding-path interface port-channel 1288 vlan 18 src-mac 0050.5685.63cc dst-ip 172.16.18.1
Missing params will be substituted by 0's.
Load-balance Algorithm on FEX: source-dest-ip
crc8_hash: 214  Outgoing port id: Ethernet1/1/3
Param(s) used to calculate load-balance:
        dst-ip:  172.16.18.1
        src-ip:  0.0.0.0
        dst-mac: 0000.0000.0000
        src-mac: 0050.5685.63cc
Mike-Cliff-Pod-16-A(nxos)#
Mike-Cliff-Pod-16-A(nxos)#
Mike-Cliff-Pod-16-A(nxos)#  show port-channel load-balance forwarding-path interface port-channel 88 vlan 18 src-mac 0050.5685.63cc dst-ip 172.16.18.1
Missing params will be substituted by 0's.
Load-balance Algorithm on switch: source-dest-ip
crc8_hash: 2    Outgoing port id: Ethernet1/5
Param(s) used to calculate load-balance:
        dst-ip:  172.16.18.1
        src-ip:  0.0.0.0
        dst-mac: 0000.0000.0000
        src-mac: 0050.5685.63cc
```

13. 检查上游Nexus 5020上是否获取了MAC地址。

    输入**show mac address-table命令**，以查看Nexus 5020-1上已获知VMK接口(vmk0)MAC地址：

```
N5K-Rack16-1#
N5K-Rack16-1# show mac address-table | in 8eb9
* 18        0050.5667.8eb9    dynamic    10          F     F   Po89
N5K-Rack16-1#
```

    输入**show mac address-table**命令，以查看Nexus 5020-2上已获取VM(ciscolive-vm)MAC地

址：

```
N5K-Rack16-2#
N5K-Rack16-2# show mac address-table | in 63cc
* 18        0050.568f.63cc    dynamic   0           F     F  Po88
N5K-Rack16-2#
```

当您排除网络故障时，此示例可帮助您快速隔离和确定MAC地址的获取方式和位置以及网络流量的预期路径。

验证

配置示例中包含验证过程。

故障排除

本配置示例旨在帮助进行网络故障排除。