

HyperFlex和網路控制策略

目錄

[簡介](#)

[HyperFlex和網路控制策略](#)

簡介

本文將說明UCS中的網路控制策略是什麼，以及在各種場景下它與HyperFlex群集的操作有何關係。

HyperFlex和網路控制策略

什麼是網路控制策略？網路控制策略(NCP)定義了以下功能和操作：

Cisco Discovery Protocol(CDP):啟用或禁用

MAC暫存器模式:只有本徵VLAN或所有主機VLAN

上行鏈路故障時的動作：連結關閉或警告

MAC Security - Forge:允許或拒絕

LLDP — 傳輸/接收:已禁用或已啟用

HX安裝程式將在LAN/策略/根/子組織/ <HX群集名稱> /網路控制策略/

HyperFlex-infra

General	Events
Actions	
Delete	
Show Policy Usage	
Use Global	
Properties	
Name	: HyperFlex-infra
Description	: Network Control policy for infrastructure vNICs Hype
Owner	: Local
CDP	: <input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
MAC Register Mode	: <input checked="" type="radio"/> Only Native Vlan <input type="radio"/> All Host Vlans
Action on Uplink Fail	: <input checked="" type="radio"/> Link Down <input type="radio"/> Warning
MAC Security	
Forge	: <input checked="" type="radio"/> Allow <input type="radio"/> Deny
LLDP	
Transmit	: <input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
Receive	: <input checked="" type="radio"/> Disabled <input type="radio"/> Enabled

HyperFlex-vm

General	Events
Actions	
Delete	
Show Policy Usage	
Use Global	
Properties	
Name	: HyperFlex-vm
Description	: Network Control policy for VM vNICs on HyperFlex s
Owner	: Local
CDP	: <input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
MAC Register Mode	: <input checked="" type="radio"/> Only Native Vlan <input type="radio"/> All Host Vlans
Action on Uplink Fail	: <input checked="" type="radio"/> Link Down <input type="radio"/> Warning
MAC Security	
Forge	: <input checked="" type="radio"/> Allow <input type="radio"/> Deny
LLDP	
Transmit	: <input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
Receive	: <input checked="" type="radio"/> Disabled <input type="radio"/> Enabled

由HyperFlex安裝程式建立的vNIC模板使用上面定義的網路控制策略。vNIC模板位於LAN/策略/根/子組織/ <HX集群名稱> / vNIC模板/

LAN / Policies / root / Sub-Organizations / hx-1-sjs / vNIC Templates / vNIC Template hv-m...

General VLANs VLAN Groups Faults Events

Actions

- Modify VLANs
- Modify VLAN Groups
- Delete
- Show Policy Usage
- Use Global

Properties

Name : **hv-mgmt-a**

Description :

Owner : **Local**

Fabric ID : Fabric A Fabric B Enable Failover

Redundancy

Redundancy Type : No Redundancy Primary Template Secondary Template

Target

Adapter VM

Template Type : Initial Template Updating Template

CDN Source : vNIC Name User Defined

MTU :

Warning

Make sure that the MTU has the same value in the QoS System Class corresponding to the Egress priority of the selected QoS Policy.

Policies

MAC Pool :

QoS Policy :

Network Control Policy :

Pin Group :

Stats Threshold Policy :

Connection Policies

Dynamic vNIC usNIC VMQ

Dynamic vNIC Connection Policy :

以下vNIC模板使用NCP **HyperFlex-infra**:

- hv-mgmt-a
- hv-mgmt-b
- hv-vmotion-a
- hv-vmotion-b
- storage-data-a
- storage-data-b

以下vNIC模板使用NCP **HyperFlex-vm**:

- vm-network-a
- vm-network-b

讓我們深入瞭解NCP策略名稱HyperFlex-infra和Action on Uplink Fail。預設情況下，Action on Uplink Fail設定為Link Down。這表示在對應的上行鏈路（邏輯或物理）關閉時，將指示vNIC進入關閉狀態。如果我們轉到**裝置/機架安裝/伺服器/伺服器#**下的伺服器的VIF頁籤，我們可以看到我們的vNIC正在利用的上行鏈路：

Equipment / Rack-Mounts / Servers / Server 4

Inventory Virtual Machines Hybrid Display Installed Firmware SEL Logs CIMC Sessions **VIF Paths** Power Control Monitor Health Diagnostics Faults Events FSM Statistics T >

Name	Adapter Port	FEX Host Port	FEX Network Port	FI Server Port	vNIC	FI Uplink	Link State	State Qual
▼ Path A/1 1/2 A/1/8								
Virtual Circuit 1556					hv-mgmt-a	A/PC- 1	Up	
Virtual Circuit 1557					storage-data-a	A/PC- 1	Up	
Virtual Circuit 1558					vm-network-a	A/PC- 1	Up	
Virtual Circuit 1559					hv-vmotion-a	A/PC- 1	Up	
▼ Path B/1 1/1 B/1/8								
Virtual Circuit 1560					hv-mgmt-b	B/PC- 2	Up	
Virtual Circuit 1561					storage-data-b	B/PC- 2	Up	
Virtual Circuit 1562					vm-network-b	B/PC- 2	Up	
Virtual Circuit 1563					hv-vmotion-b	B/PC- 2	Up	

連線到交換矩陣互聯A的vNIC被固定到埠通道1。連線到交換矩陣互聯B的vNIC 被固定到埠通道2。如果Port-Channel 1關閉，將指示連線到交換矩陣互聯A的vNIC關閉。如果我們登入到vCenter，我們會看到相應的VMNIC發生故障。

Equipment / Rack-Mounts / Servers / Server 4

Inventory Virtual Machines Hybrid Display Installed Firmware SEL Logs CIMC Sessions **VIF Paths** Power Control Monitor Health Diagnostics Faults Events FSM Statistics T >

Name	Adapter Port	FEX Host Port	FEX Network Port	FI Server Port	vNIC	FI Uplink	Link State	State Qual
▼ Path A/1 1/2 A/1/8								
Virtual Circuit 15...					hv-mgmt-a	unpinned	Down	ENM source pinning fai...
Virtual Circuit 15...					storage-data-a	unpinned	Down	ENM source pinning fai...
Virtual Circuit 15...					vm-network-a	unpinned	Down	ENM source pinning fai...
Virtual Circuit 15...					hv-vmotion-a	unpinned	Down	ENM source pinning fai...
▼ Path B/1 1/1 B/1/8								
Virtual Circuit 15...					hv-mgmt-b	B/PC- 2	Up	
Virtual Circuit 15...					storage-data-b	B/PC- 2	Up	
Virtual Circuit 15...					vm-network-b	B/PC- 2	Up	
Virtual Circuit 15...					hv-vmotion-b	B/PC- 2	Up	

hx-1-esxi-04.sjs.local | ACTIONS ▾

Summary Monitor **Configure** Permissions VMs Datastores Networks

Storage Adapters Storage Devices Host Cache Configur... Protocol Endpoints I/O Filters

Networking Virtual switches VMkernel adapters **Physical adapters** TCP/IP configuration

Virtual Machines VM Startup/Shutdo... Agent VM Settings Default VM Compati...

Physical adapters

Add Networking... Refresh Edit...

Device	Actual Speed	Configured Speed	Switch	MAC Address	Observed IP Ranges	Wake on LAN Sup...	SR-IOV Status	S
vmnic0	Down	Auto negotiate	vswitch-hx-inba...	00:25:b5:99:a1:02	172.16.671-172.16.67...	No	Not supported	-
vmnic1	Down	Auto negotiate	--	00:25:b5:99:a3:02	No networks	No	Not supported	-
vmnic2	Down	Auto negotiate	--	00:25:b5:99:a5:02	0.0.01-255.255.255...	No	Not supported	-
vmnic3	Down	Auto negotiate	--	00:25:b5:99:a7:02	No networks	No	Not supported	-
vmnic4	10000 Mb	10000 Mb	vswitch-hx-inba...	00:25:b5:99:b2:02	No networks	No	Not supported	-
vmnic5	10000 Mb	10000 Mb	--	00:25:b5:99:b4:02	No networks	No	Not supported	-
vmnic6	10000 Mb	10000 Mb	--	00:25:b5:99:b6:02	No networks	No	Not supported	-
vmnic7	10000 Mb	10000 Mb	--	00:25:b5:99:b8:02	No networks	No	Not supported	-

由於交換矩陣互聯B上仍有Port-Channel 2，因此HyperFlex集群將保持啟動並運行。因此，如果交換矩陣互聯B上的埠通道2也丟失會發生什麼。

Equipment / Rack-Mounts / Servers / Server 4

< General Inventory Virtual Machines Hybrid Display Installed Firmware SEL Logs CIMC Sessions VIF Paths Power Control Monitor Health Diagnostics Faults Events FSM S >

+ - Advanced Filter Export Print

Name	Adapter Port	FEX Host Port	FEX Network Port	FI Server Port	vNIC	FI Uplink	Link State	State Qual
▼ Path A/1	1/2			A/1/8				
Virtual Circuit 15...					hv-mgmt-a	unpinned	Down	ENM source pinning fai...
Virtual Circuit 15...					storage-data-a	unpinned	Down	ENM source pinning fai...
Virtual Circuit 15...					vm-network-a	unpinned	Down	ENM source pinning fai...
Virtual Circuit 15...					hv-vmotion-a	unpinned	Down	ENM source pinning fai...
▼ Path B/1	1/1			B/1/8				
Virtual Circuit 15...					hv-mgmt-b	unpinned	Down	ENM source pinning fai...
Virtual Circuit 15...					storage-data-b	unpinned	Down	ENM source pinning fai...
Virtual Circuit 15...					vm-network-b	unpinned	Down	ENM source pinning fai...
Virtual Circuit 15...					hv-vmotion-b	unpinned	Down	ENM source pinning fai...

正如您預期的那樣，所有vNIC都處於關閉鏈路狀態，對應的VMNIC也處於關閉狀態。

```
The ESXi Shell can be disabled by an administrative user. See the
vSphere Security documentation for more information.
[root@hx-1-esxi-04:~] esxcli network nic list
Name      PCI Device  Driver  Admin Status  Link Status  Speed  Duplex  MAC Address  MTU  Description
-----
vmnic0    0000:05:00.0  nenic  Up            Down         0      Half    00:25:b5:99:a1:02  1500  Cisco Systems Inc Cisco VIC Ethernet NIC
vmnic1    0000:06:00.0  nenic  Up            Down         0      Half    00:25:b5:99:a3:02  1500  Cisco Systems Inc Cisco VIC Ethernet NIC
vmnic2    0000:07:00.0  nenic  Up            Down         0      Half    00:25:b5:99:a5:02  1500  Cisco Systems Inc Cisco VIC Ethernet NIC
vmnic3    0000:08:00.0  nenic  Up            Down         0      Half    00:25:b5:99:a7:02  1500  Cisco Systems Inc Cisco VIC Ethernet NIC
vmnic4    0000:09:00.0  nenic  Up            Down         0      Half    00:25:b5:99:b2:02  1500  Cisco Systems Inc Cisco VIC Ethernet NIC
vmnic5    0000:0a:00.0  nenic  Up            Down         0      Half    00:25:b5:99:b4:02  1500  Cisco Systems Inc Cisco VIC Ethernet NIC
vmnic6    0000:0b:00.0  nenic  Up            Down         0      Half    00:25:b5:99:b6:02  1500  Cisco Systems Inc Cisco VIC Ethernet NIC
vmnic7    0000:0c:00.0  nenic  Up            Down         0      Half    00:25:b5:99:b8:02  1500  Cisco Systems Inc Cisco VIC Ethernet NIC
[root@hx-1-esxi-04:~] █
```

由於所有VMNIC都處於關閉狀態，因此與ESXi管理的連線將丟失，而HyperFlex群集將離線，因為儲存控制器VM之間無法再通信。

虛擬埠通道vPC的使用將為HyperFlex提供最佳冗餘。目前，我們不支援使用警告而不是關閉鏈路。流量可能會被黑洞，並影響HyperFlex的網路冗餘。