

Cloud Computing 厉梦如 2020-09-26 Published

Normal topology

# **Problem Description**

Replacing network card, board network card on motherboard and motherboard are the routine operati on of server hardware maintenance.

# **Process Analysis**

Generally, the MAC address of the new (on board) network card will change, and some servers will c hange the motherboard, which will also cause the MAC address change of the onboard network card. Since CAS system will treat the network card with new MAC address as a new device, it will add new device name in the original network card configuration file (70 persistent- net.rules ) .So network failure may occur after replacing network card and motherboard. I will introduce the method of recove ring network after the hardware operation and maintenance of server network card.

# 1. Environmental inspection

Do environmental inspection and preparation. Make sure the network environment is health before re placing the network card / motherboard (on-board network card). If the network card can work normall y, it is recommended to use Ping to check the network connectivity. Record the corresponding relatio nship between each network cable, optical fiber and network card interface.

Check whether the host system and hardware time are correct and recorded, and whether the NTP s erver service is normal.

## 2. CVM stateful failover

If it is a CVM stateful failover system environment, you can switch between the master and the standb y, and replace them one by one.

If it is a CVM server only for management, it can be shut down directly to replace the network card. If it is used for cvk, the method is the same as that for cvk host.

# 3. License change and activation

If you want to replace the CVM node network card, the original license cannot be used in the new CV M directly due to the change of hardware information. Please contact the H3C office engineer or call H 3C hotline to obtain the "H3C CAS cloud computing management platform license exception applicati on and letter of commitment" to go through the H3C license change / unbind process, and obtain a ne w activation code file according to the process.

Note: the application process will involve the collection host id information, if it is a CVM stateful failov er system environment, two host.id information needs to be collected.

# 4.Back up the network card configuration file

Backup the network card configuration file (70-persistent-net.rules) on the host computer.

root@cvk01:~# cd /etc/udev/rules.d/

root@cvk01:/etc/udev/rules.d# cp 70-persistent-net.rules 70-persistent-net.rules.bak

root@cvk01:/etc/udev/rules.d# II

drwxr-xr-x 2 root root 4096 May 9 15:17 ./

drwxr-xr-x 3 root root 4096 Apr 30 17:34 ../

-rw-r--r-- 1 root root 541 Apr 30 17:37 70-custom-net.rules

-rw-r--r-- 1 root root 536 Apr 30 17:33 70-persistent-cd.rules

-rw-r--r-- 1 root root 683 May 9 01:46 70-persistent-net.rules

-rw-r--r- 1 root root 683 May 9 15:35 70-persistent-net.rules.bak

-rw-r--r- 1 root root 496 Oct 24 2018 71-persistent-fcoe.rules

-rw-r--r-- 1 root root 1157 Apr 6 2012 README

# 5. Replace network card

If there is a virtual machine running on this host, first migrate the virtual machine to other hosts, and t hen put the host into maintenance mode.

Turn off the host and replace the network card / motherboard (on-board network card). After hardware replacement, the physical link is restored according to the corresponding relationship betwe en network cable, optical fiber and network card interface recorded during environmental inspection.

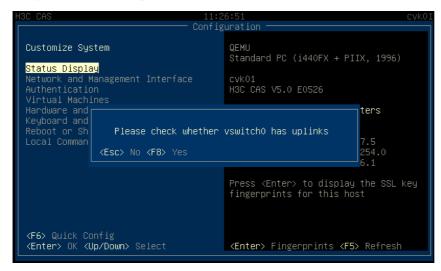
## Tips:

After the physical host carries out hardware maintenance, it is necessary to ensure that the server ha rdware clock is synchronized with that before the maintenance, otherwise the CAS system business f unction will be abnormal.

Please contact the server hardware service provider for server hardware clock synchronization method.

## 6. Restore network card number

After replacing (on board) network card, motherboard or network card, the network card configuration file (70 persistent- net.rules ) will be updated, so the network will be blocked. You need to manually modify the network card configuration file to restore the network.



After the network card is replaced, CAS xconsole prompts to check the uplink link of vswitch0

After the network card is replaced, the operating system will automatically update the network card c onfiguration file (70 persistent- net.rules ) , the eth number of the new network card will be assigned continuously with the original eth number. To recover the network , the eth number entry in the network card configuration file needs to be updated to the new MAC address.

First, we need to find out the MAC address after the network port is changed. Suppose that the physical state of the link is up after the mainboard and network card are replaced, the following provides a physical judgment method (if you need to disconnect the network of the host network card, please operate without affecting the service)

a) Open the xconsole console of the server and enter the local command shell, execute IP a | grep do wn and record the results. As shown in the figure below:

```
root@cvkO1:/# ip a | grep DOWN
6: ovs–system: <BROADCAST,MULTICAST> mtu 1500 qdisc noop state DOWN group default qlen 1000
```

b) After the mainboard and physical network card are replaced, route the physical link of the original e th0 network port to down (you can pull the network cable or shut down the network port corresponding to the switch). Execute IP a | grep down and record the results.

```
root@cvk01:/# ip a | grep DOWN

4: eth4: <BROADCAST,MULTICAST> mtu 1500 qdisc pfifo_fast state DOWN group default qlen 1000

5: DVS-System: <BROADCAST,MULTICAST> mtu 1500 qdisc noop state DOWN group default qlen 1000 root@cvk01:/#
```

- c) Comparing the results of the above two steps, we can know that after the MAC address of the original eth0 network port is changed, it is regarded as a new network card by the system and numbered as eth4. Record the corresponding relationship of eth number to table 1
- d) Repeat steps a,b,c until you find and record the relationship between the old and new eth numbers of all the network cards replaced. Execute / opt / bin / OVS\_ dbg\_ List ports to view the MAC address of eth4-eth7 (as shown in the figure below). Record the MAC address corresponding to the new eth n umber into the column of "new MAC address" in Table 1 (pay attention to supplement the semicolon ":").

mont devilent of the control of	ndere alles lietuente			
root@cvk01:/# /opt/bi PCI NAME LW SUBSYS DRIVER FI	IO NU SRIO MTU A/L S	PEED MAC	IP	VEN:DEV DESC
00:03.0 eth6 0001 virtio-pci	1500 u/u	-1 Ocda411db26e		1af4:1000 virtio
00:04.0 eth5 0001 virtio-pci	1500 u/u	-1 Ocda411d9cfa		1af4:1000 virtio
00:05.0 eth4 0001 virtio-pci	1500 u/u	-1 Ocda411d2c23		1af4:1000 virtio
00:06.0 eth7 0001 virtio-pci	1500 u/u	-1 Ocda411dada8		1af4:1000 virtio
=======================================	=======================================			=======================================
	======= MAC IPv4 (veb )		MTU	
int vswitch0 eth0	6a195f9eca4a 10.125.27.5	65534/2 -1	1500	
stor	(veb )			
int stor	c6f91f69e241 1.1.1.1	65534/1	1500	
eth2 eth3		-1 -1		

Table 1

	Original eth numb er	New eth numbe r	New MAC address
NIC1	eth0	eth4	0c:da:41:1d:2c:23
NIC2	eth1	eth5	0c:da:41:1d:9c:fa
NIC3	eth2	eth6	0c:da:41:1d:b2:6e
NIC4	eth3	eth7	0c:da:41:1d:ad:a8

Modified 70 persistent- net.rules File, the value of ATTR {address} in the original eth number entry is modified to the new MAC address.

In this operation guide, it is necessary to update the replaced network card NIC1 to eth0, the replaced network card NIC2 to eth1, the replaced network card NIC3 to eth2, and the replaced network card NIC4 to eth3.

After backup new 70-persistent-net.rules file, use vim command to modify the 70 persistent- net.rules document:

root@cvk01:~# cd /etc/udev/rules.d/

root@cvk01:/etc/udev/rules.d# cp 70-persistent-net.rules 70-persistent-net.rules.bak.nwe root@cvk01:/etc/udev/rules.d# vim 70-persistent-net.rules

```
# PCI device 0x1af4:/sys/devices/pci0000:00/0000:00:03.0/virtio0 (virtio-pci)
SUBSYSTEM=="net", ACTION=="add", DRIVERS=="?*", ATTR{address} =="0c:da:41:1d:2c:23", ATTR:dev_id]=="0
x0", ATTR:type:=="1", KERNEL=="eth*", NAME="eth0"

# PCI device 0x1af4:/sys/devices/pci0000:00/0000:00:04.0/virtio1 (virtio-pci)
SUBSYSTEM=="net", ACTION=="add", DRIVERS=="?*", ATTR{address} =="0c:da:41:1d:9c:fa", ATTR:dev_id]=="0
x0", ATTR:type:=="1", KERNEL=="eth*", NAME="eth1"

# PCI device 0x1af4:/sys/devices/pci0000:00/0000:00:05.0/virtio2 (virtio-pci)
SUBSYSTEM=="net", ACTION=="add", DRIVERS=="?*", ATTR:address} =="0c:da:41:1d:b2:6e", ATTR:dev_id]=="0
x0", ATTR:type:=="1", KERNEL=="eth*", NAME="eth2"

# PCI device 0x1af4:/sys/devices/pci0000:00/0000:00:06.0/virtio3 (virtio-pci)
SUBSYSTEM=="net", ACTION=="add", DRIVERS=="?*", ATTR:address} == "0c:da:41:1d:ad:a6", ATTR:dev_id]=="0
x0", ATTR:type:=="1", KERNEL=="eth*", NAME="eth3"

# PCI device 0x1af4:/sys/devices/pci0000:00/0000:00:05.0/virtio2 (virtio-pci)
#SUBSYSTEM=="net", ACTION=="add", DRIVERS=="?*", ATTR:address} == "0c:da:41:1d:2c:23", ATTR:dev_id]=="0
x0", ATTR:type!=="1", KERNEL=="eth*", NAME="eth4"

# PCI device 0x1af4:/sys/devices/pci0000:00/0000:00:04.0/virtio1 (virtio-pci)
#SUBSYSTEM=="net", ACTION=="add", DRIVERS=="?*", ATTR:address} == "0c:da:41:1d:9c:fa", ATTR:dev_id]=="0
x0", ATTR:type!=="1", KERNEL=="eth*", NAME="eth6"

# PCI device 0x1af4:/sys/devices/pci0000:00/0000:00:04.0/virtio1 (virtio-pci)
#SUBSYSTEM=="net", ACTION=="add", DRIVERS=="?*", ATTR:address} == "0c:da:41:1d:b2:6e", ATTR:dev_id]=="0
x0", ATTR:type!=="1", KERNEL=="eth*", NAME="eth6"

# PCI device 0x1af4:/sys/devices/pci0000:00/0000:00:03.0/virtio0 (virtio-pci)
#SUBSYSTEM=="net", ACTION=="add", DRIVERS=="?*", ATTR:address} == "0c:da:41:1d:da:a8", ATTR:dev_id]=="0
x0", ATTR:type!=="1", KERNEL=="eth*", NAME="eth6"

# PCI device 0x1af4:/sys/devices/pci0000:00/0000:00:06.0/virtio3 (virtio-pci)
#SUBSYSTEM=="net", ACTION=="add", DRIVERS=="?*", ATTR:address} == "0c:da:41:1d:ad:a8", ATTR:dev_id]=="0
x0
```

Update MAC address corresponding to eth number:

According to the relationship between the old eth number and the new MAC address recorded in Tabl e 1, update the content.

Locate the line name = eth0, and update the corresponding MAC address, such as: ATTR{address}= ="0c:da:41:1d:2c:23

Locate the line name = eth1, and update the corresponding MAC address, such as attr {address} = = 0C: Da: 41:1d: 9C: Fa "

Locate the line name = eth2, and update the corresponding MAC address, such as attr {address} = = 0C: Da: 41:1d: b2:6e "

Locate the line name = eth3, and update the corresponding MAC address, such as attr {address} = = 0.00 Da: 41:1d: AD: AB: "

At the beginning of each line, annotate the entry corresponding to eth4-eth7 with #.

After updating the content, confirm that the configuration is correct, then press ESC, enter: WQ to save and exit the VIM editor.

## 7. Configuration verification and operation completion

After the modification, execute the reboot command to restart the host. Log in to the background of the host and check the relationship between eth number and MAC address with IP a command.

Use Ping to verify that the network connectivity after the replacement of the maintenance network car d is correct.

If the corresponding relationship between eth number and MAC address is correct, but Ping verification fails, please check the corresponding relationship of network cable, optical fiber and network card in terface, and check whether the corresponding relationship between network card port and MAC address is correct.

If there is no problem, exit the host from maintenance mode in CVM interface.