

服务器策略路由配置文档

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1 服务多网卡捆绑策略路由说明

在服务器做 bond 捆绑的条件下，做策略路由配置。

电信、联通、移动的网络地址分别为：

电信：11.11.11.128/27,对应 vlan100

联通：22.22.22.128/27,对应 vlan101

移动：33.33.33.128/27,对应 vlan102，默认网关在这个方向

每台设备配置三个 ip 地址，网民请求哪个 ip 地址，从哪个 ip 地址回复。

1.1服务器网卡 bond 捆绑配置

服务器上面记得卸载一下 NetworkManager*，yum remove NetworkManager*
-y

1.1.1Bond 配置

创建：/etc/modprobe.d/bond.conf，输入如下内容：

```
alias bond0 bonding
```

```
options bond0 mode=0 miimon=100
```

这个配置重启才能生效，因此可以先手动使配置生效，执行如下命令：

```
modprobe bonding
```

1.1.2服务器支持多 vlan

通过对服务器做 vlan 配置如下：

```
echo "VLAN=yes" >> /etc/sysconfig/network
```

然后配置网卡：

```
[root@BOND-NET-3a2 network-scripts]# cat ifcfg-em1
```

```
DEVICE="em1"
```

```
ONBOOT="yes"
```

```
TYPE="Ethernet"
```

```
MASTER=bond0
```

```
SLAVE=yes
```

```
[root@BOND-NET-3a2 network-scripts]# cat ifcfg-em2
```

```
DEVICE=em2
```

```
TYPE=Ethernet
```

```
ONBOOT=yes
```

```
MASTER=bond0
```

```
SLAVE=yes
```

```
[root@BOND-NET-3a2 network-scripts]# cat ifcfg-em3
```

```
DEVICE=em3
TYPE=Ethernet
ONBOOT=yes
MASTER=bond0
SLAVE=yes
[root@BOND-NET-3a2 network-scripts]# cat ifcfg-em4
DEVICE=em4
TYPE=Ethernet
ONBOOT=yes
MASTER=bond0
SLAVE=yes

[root@BOND-NET-3a2 network-scripts]# cat ifcfg-bond0
DEVICE=bond0
ONBOOT=yes
[root@BOND-NET-3a2 network-scripts]# cat ifcfg-bond0.100
DEVICE=bond0.100
ONBOOT="yes"
TYPE="Ethernet"
IPADDR=11.11.11.137
NETMASK=255.255.255.224
[root@BOND-NET-3a2 network-scripts]# cat ifcfg-bond0.101
DEVICE=bond0.101
ONBOOT="yes"
TYPE="Ethernet"
IPADDR=22.22.22.137
NETMASK=255.255.255.224
[root@BOND-NET-3a2 network-scripts]# cat ifcfg-bond0.102
DEVICE=bond0.102
ONBOOT="yes"
TYPE="Ethernet"
IPADDR=33.33.33.137
NETMASK=255.255.255.224
GATEWAY=33.33.33.129
最终生效结果:
```

1.1.3 服务器策略路由配置

1.1.3.1 定义策略路由 **acl** 别名

修改/etc/iproute2/route_tables 增加如下配置:

```
100    CNC
101    TEL
102    CMN
```

1.1.3.2 定义策略路由【重启设备之后自动生效】

创建一个/etc/sysconfig/iproute2_table，增加如下配置：

```
route flush table TEL
route add default via 11.11.11.129 table TEL
rule add from 11.11.11.128/27 table TEL
```

```
route flush table CNC
route add default via 22.22.22.129 table CNC
rule add from 22.22.22.128/27 table CNC
```

```
route flush table CMN
route add default via 33.33.33.129 table CMN
rule add from 33.33.33.128/27 table CMN
```

修改网卡的启动文件/etc/init.d/network 调用此文件：

在# Add non interface-specific static-routes.后面的 if 块后面【或者# Add non interface-specific static arp entries.这句话前面】

```
# Add non interface-specific ip rule
if [ -f /etc/sysconfig/iproute2_table ]; then
    grep "^route" /etc/sysconfig/iproute2_table | while read ignore args ;do
        /sbin/ip route $args
    done

    grep "^rule" /etc/sysconfig/iproute2_table | while read ignore args ; do
        /sbin/ip rule $args
    done
fi
```

1.1.3.3 手动生效策略路由

输入如下命令：

```
ip route flush table TEL
ip route add default via 11.11.11.129 table TEL
ip rule add from 11.11.11.128/27 table TEL
```

```
ip route flush table CNC
ip route add default via 22.22.22.129 table CNC
```

```
ip rule add from 22.22.22.128/27 table CNC
```

```
ip route flush table CMN
```

```
ip route add default via 33.33.33.129 table CMN
```

```
ip rule add from 33.33.33.128/27 table CMN
```

1.1.3.4 查看策略

```
[root@BOND-NET-3a2 network-scripts]# ip rule
```

```
0:      from all lookup local
```

```
32763:  from 33.33.33.128/27 lookup CMN
```

```
32764:  from 22.22.22.128/27 lookup CNC
```

```
32765:  from 11.11.11.128/27 lookup TEL
```

```
32766:  from all lookup main
```

```
32767:  from all lookup default
```

```
[root@BOND-NET-3a2 network-scripts]# ip route show table TEL
```

```
default via 11.11.11.129 dev bond0.100
```

```
[root@BOND-NET-3a2 network-scripts]# ip route show table CNC
```

```
default via 22.22.22.129 dev bond0.101
```

```
[root@BOND-NET-3a2 network-scripts]# ip route show table CMN
```

```
default via 33.33.33.129 dev bond0.102
```

1.2juniper 交换机千兆端口捆绑配置

这里以 juniper 为例

1.2.1Vlan 定义

```
set vlans vlangmn description Yewu-cmn-ip
```

```
set vlans vlangmn vlan-id 102
```

```
set vlans vlangmn l3-interface irb.102
```

```
set vlans vlangnc description Yewu-cnc-ip
```

```
set vlans vlangnc vlan-id 101
```

```
set vlans vlangnc l3-interface irb.101
```

```
set vlans vlangipmi description IPMI-vlan
```

```
set vlans vlantel vlan-id 100
set vlans vlantel l3-interface irb.100

set interfaces irb unit 100 family inet address 11.11.11.129/27
set interfaces irb unit 101 description irbcnc
set interfaces irb unit 101 family inet address 22.22.22.129/27
set interfaces irb unit 102 description irbcmn
set interfaces irb unit 102 family inet address 33.33.33.129/27
```

1.2.2 服务器端口捆绑并应用 trunk

```
set interfaces ae7 unit 0 description BGP-JS-YZ2-3a2-bond0
set interfaces ae7 unit 0 family ethernet-switching interface-mode trunk
set interfaces ae7 unit 0 family ethernet-switching vlan members vlantel
set interfaces ae7 unit 0 family ethernet-switching vlan members vlancnc
set interfaces ae7 unit 0 family ethernet-switching vlan members vlancmn

set interfaces ge-0/0/28 description BGP-JS-YZ2-3a2
set interfaces ge-0/0/28 ether-options 802.3ad ae7
set interfaces ge-0/0/29 description BGP-JS-YZ2-3a2
set interfaces ge-0/0/29 ether-options 802.3ad ae7
set interfaces ge-0/0/30 description BGP-JS-YZ2-3a2
set interfaces ge-0/0/30 ether-options 802.3ad ae7
set interfaces ge-0/0/31 description BGP-JS-YZ2-3a2
set interfaces ge-0/0/31 ether-options 802.3ad ae7
```

1.2.3 交换机上联策略路由

配置上联点对点：

```
set interfaces xe-0/2/0 unit 0 description Uplink-To-Tel
set interfaces xe-0/2/0 unit 0 family inet address 10.100.2.118/30
set interfaces xe-0/2/1 unit 0 description Uplink-To-CNC
set interfaces xe-0/2/1 unit 0 family inet address 10.100.2.122/30
set interfaces xe-0/2/2 unit 0 description Uplink-To-CMN
set interfaces xe-0/2/2 unit 0 family inet address 10.100.2.126/30
```

配置策略路由：

```
set firewall family inet filter PR term cmn_src from source-address
33.33.33.128/27
set firewall family inet filter PR term cmn_src then log
set firewall family inet filter PR term cmn_src then routing-instance
cmn_route_table
set firewall family inet filter PR term cnc_src from source-address
```

22.22.22.128/27

```
set firewall family inet filter PR term cnc_src then log
set firewall family inet filter PR term cnc_src then routing-instance
cnc_route_table
```

```
set firewall family inet filter PR term tel_src from source-address 11.11.11.128/27
set firewall family inet filter PR term tel_src then log
set firewall family inet filter PR term tel_src then routing-instance tel_route_table
set firewall family inet filter PR term default then accept
```

```
set routing-options rib-groups fbf-group import-rib cmn_route_table.inet.0
set routing-options rib-groups fbf-group import-rib cnc_route_table.inet.0
set routing-options rib-groups fbf-group import-rib tel_route_table.inet.0
```

```
set routing-instances cmn_route_table instance-type forwarding
set routing-instances cmn_route_table routing-options static route 0.0.0.0/0
next-hop 10.100.2.125
```

```
set routing-instances cnc_route_table instance-type forwarding
set routing-instances cnc_route_table routing-options static route 0.0.0.0/0 next-
hop 10.100.2.121
```

```
set routing-instances tel_route_table instance-type forwarding
set routing-instances tel_route_table routing-options static route 0.0.0.0/0 next-
hop 10.100.2.117
```

```
set interfaces irb unit 100 family inet filter input PR
set interfaces irb unit 101 family inet filter input PR
set interfaces irb unit 102 family inet filter input PR
```

2 服务单网卡策略路由说明

在服务器单网卡条件下，做策略路由配置。

电信、联通、移动的网络地址分别为：

电信：44.44.44.64/27,对应 vlan100

联通：55.55.55.32/27,对应 vlan101

移动：66.66.66.32/27,对应 vlan102，默认网关在这个方向

每台设备配置三个 ip 地址，网民请求哪个 ip 地址，从哪个 ip 地址回复。

2.1服务器策略路由配置

2.1.1服务器配置 ip 地址

2.1.1.1 服务器配置支持 vlan

服务器上面记得卸载一下 NetworkManager*

```
yum remove NetworkManager* -y
```

配置服务器支持 vlan:

```
echo 'VLAN=yes' >> /etc/sysconfig/network
```

2.1.1.2 服务器配置 ip

```
[root@XG-NET-ii1 ~]# cat /etc/sysconfig/network-scripts/ifcfg-p4p1
```

```
TYPE=Ethernet
```

```
BOOTPROTO=static
```

```
NAME=p4p1
```

```
DEVICE=p4p1
```

```
ONBOOT=yes
```

```
[root@XG-NET-ii1 ~]# cat /etc/sysconfig/network-scripts/ifcfg-p4p1.100
```

```
NAME=p4p1.100
```

```
DEVICE=p4p1.100
```

```
ONBOOT=yes
```

```
IPADDR=44.44.44.66
```

```
NETMASK=255.255.255.224
```

```
[root@XG-NET-ii1 ~]# cat /etc/sysconfig/network-scripts/ifcfg-p4p1.101
```

```
NAME=p4p1.101
```

```
DEVICE=p4p1.101
```

```
ONBOOT=yes
IPADDR=55.55.55.34
NETMASK=255.255.255.224
[root@XG-NET-ii1 ~]# cat /etc/sysconfig/network-scripts/ifcfg-p4p1.102
TYPE=Ethernet
NAME=p4p1.102
DEVICE=p4p1.102
ONBOOT=yes
IPADDR=66.66.66.34
NETMASK=255.255.255.224
GATEWAY=66.66.66.33
DNS1=218.201.96.130
DNS2=223.5.5.5
```

2.1.2 服务器策略路由配置

2.1.2.1 定义策略路由 **acl** 别名

修改/etc/iproute2/rt_tables 增加如下配置:

```
100    TEL
101    CNC
102    CMN
```

2.1.2.2 手动生效策略路由

输入如下命令:

```
ip route flush table TEL
ip route add default via 44.44.44.65 table TEL
ip rule add from 44.44.44.64/27 table TEL

ip route flush table CNC
ip route add default via 55.55.55.33 table CNC
ip rule add from 55.55.55.32/27 table CNC

ip route flush table CMN
ip route add default via 66.66.66.33 table CMN
ip rule add from 66.66.66.32/27 table CMN
```

2.1.2.3 定义策略路由【重启设备之后自动生效】

创建一个/etc/sysconfig/iproute2_table，增加如下配置：

```
route flush table TEL
route add default via 44.44.44.65 table TEL
rule add from 44.44.44.64/27 table TEL
```

```
route flush table CNC
route add default via 55.55.55.33 table CNC
rule add from 55.55.55.32/27 table CNC
```

```
route flush table CMN
route add default via 66.66.66.33 table CMN
rule add from 66.66.66.32/27 table CMN
```

修改网卡的启动文件/etc/init.d/network 调用此文件：

在# Add non interface-specific static-routes.后面的 if 块后面【或者# Add non interface-specific static arp entries.这句话前面】

```
# Add non interface-specific ip rule
if [ -f /etc/sysconfig/iproute2_table ]; then
    grep "^route" /etc/sysconfig/iproute2_table | while read ignore args ;do
        /sbin/ip route $args
    done

    grep "^rule" /etc/sysconfig/iproute2_table | while read ignore args ; do
        /sbin/ip rule $args
    done
fi
```

2.1.2.4 查看策略

```
[root@XG-net-ii1 ~]# ip rule
0: from all lookup local
32763: from 66.66.66.32/27 lookup CMN
32764: from 55.55.55.32/27 lookup CNC
32765: from 44.44.44.64/27 lookup TEL
32766: from all lookup main
32767: from all lookup default
[root@XG-net-ii1 ~]#
[root@XG-net-ii1 ~]# ip route show table TEL
default via 44.44.44.65 dev p4p1.100
```

```
[root@XG-net-ii1 ~]# ip route show table CNC
default via 55.55.55.33 dev p4p1.101
[root@XG-net-ii1 ~]# ip route show table CMN
default via 66.66.66.33 dev p4p1.102
```