

Interface Forwarding - from **eth1** to **eth0** on **EDGE** node.

Adding **route** to all the **slaves** which reside on a private network to communicate with **External Server** directly using an **EDGE** node using **Interface Forwarding**.

NOTE : Below testing was done on RHEL 6.6

What we are trying to do.

1. All the slave nodes will send their data to Edge nodes on a private interface.
2. Edge Node will take the data arriving on the **private** interface and forward it over a external interface.

NOTE: below I have used **slaves** for all the nodes which are communicating with **EDGE**, in the this case making **EDGE** as the **master** which acts like a **router**.

Datanodes ifconfig

Slaves will only run on Private network.

1. 192.168.0.11 aka **eth1** Private Interface.

Here is the **ifconfig**.

```
[root@slave-node ~]# ifconfig
eth0      Link encap:Ethernet  HWaddr
          inet addr:192.168.0.8  Bcast:192.168.0.255  Mask:255.255.255.0
          inet6 addr: fe80::21d:d8ff:feb7:1efe/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:131581 errors:0 dropped:0 overruns:0 frame:0
          TX packets:148636 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:11583580 (11.0 MiB)  TX bytes:35866144 (34.2 MiB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:245626 errors:0 dropped:0 overruns:0 frame:0
          TX packets:245626 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:286415155 (273.1 MiB)  TX bytes:286415155 (273.1 MiB)
```

Edge Node **ifconfig**

1. 172.14.14.214 aka **eth0** External Interface
2. 192.168.0.11 aka **eth1** Private Interface.

Here is the ifconfig.

```
[root@edge-node ~]# ifconfig
eth0      Link encap:Ethernet  HWaddr
          inet addr:172.14.14.214  Bcast:172.14.14.255  Mask:255.255.255.0
          inet6 addr: fe80::21d:d8ff:feb7:1f7b/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:908442 errors:0 dropped:0 overruns:0 frame:0
          TX packets:235173 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:77363514 (73.7 MiB)  TX bytes:33167098 (31.6 MiB)

eth1      Link encap:Ethernet  HWaddr
          inet addr:192.168.0.11  Bcast:192.168.0.255  Mask:255.255.255.0
          inet6 addr: fe80::21d:d8ff:feb7:1f7a/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:210510 errors:0 dropped:0 overruns:0 frame:0
          TX packets:177170 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:61583138 (58.7 MiB)  TX bytes:16125613 (15.3 MiB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:13799253 errors:0 dropped:0 overruns:0 frame:0
          TX packets:13799253 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:27734863794 (25.8 GiB)  TX bytes:27734863794 (25.8 GiB)

[root@edge-node ~]#
```

Configuration.

1. Create FORWARDer on the Edge node.
2. Create route on all the slave.
3. Update /etc/hosts on slave nodes.

1. Create FORWARDer on the Edge node.

1. If you haven't already enabled forwarding in the kernel, do so.
2. Open /etc/sysctl.conf and uncomment net.ipv4.ip_forward = 1
3. Then execute `$ sudo sysctl -p`
4. Add the following rules to iptables

Commands.

```
[root@edge-node ~]# iptables -t nat -A POSTROUTING --out-interface eth0 -j MASQUERADE
[root@edge-node ~]# iptables -A FORWARD --in-interface eth1 -j ACCEPT
```

2. Create route on all the slave.

Here is the command to add the route in slaves.

```
[root@datanode ~]# route add -net 172.0.0.0 netmask 255.0.0.0 gw 192.168.0.11 eth0
```

We are tell all the traffic trying to go to 172.x.x.x will have to use 192.168.0.11 as the gateway. Which is the Private Interface on the Edge Node.

3. Update /etc/hosts on slave nodes.

And then we update the /etc/hosts file with the direct IP of External Server 172.14.14.174, as slave node now should be able to communicate to the External Server.

```
[root@slave-nodes ~]# ping 172.14.14.174
PING 172.14.14.174 (172.14.14.174) 56(84) bytes of data.
64 bytes from 172.14.14.174: icmp_seq=1 ttl=127 time=1.02 ms
64 bytes from 172.14.14.174: icmp_seq=2 ttl=127 time=1.04 ms
64 bytes from 172.14.14.174: icmp_seq=3 ttl=127 time=1.03 ms
^C
--- 172.14.14.174 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2892ms
rtt min/avg/max/mdev = 1.020/1.033/1.049/0.038 ms
[root@slave-nodes ~]# ping 172.14.14.141
PING 172.14.14.141 (172.14.14.141) 56(84) bytes of data.
64 bytes from 172.14.14.141: icmp_seq=1 ttl=127 time=0.968 ms
64 bytes from 172.14.14.141: icmp_seq=2 ttl=127 time=1.01 ms
64 bytes from 172.14.14.141: icmp_seq=3 ttl=127 time=3.73 ms
^C
--- 172.14.14.141 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2350ms
rtt min/avg/max/mdev = 0.968/1.906/3.732/1.291 ms
```