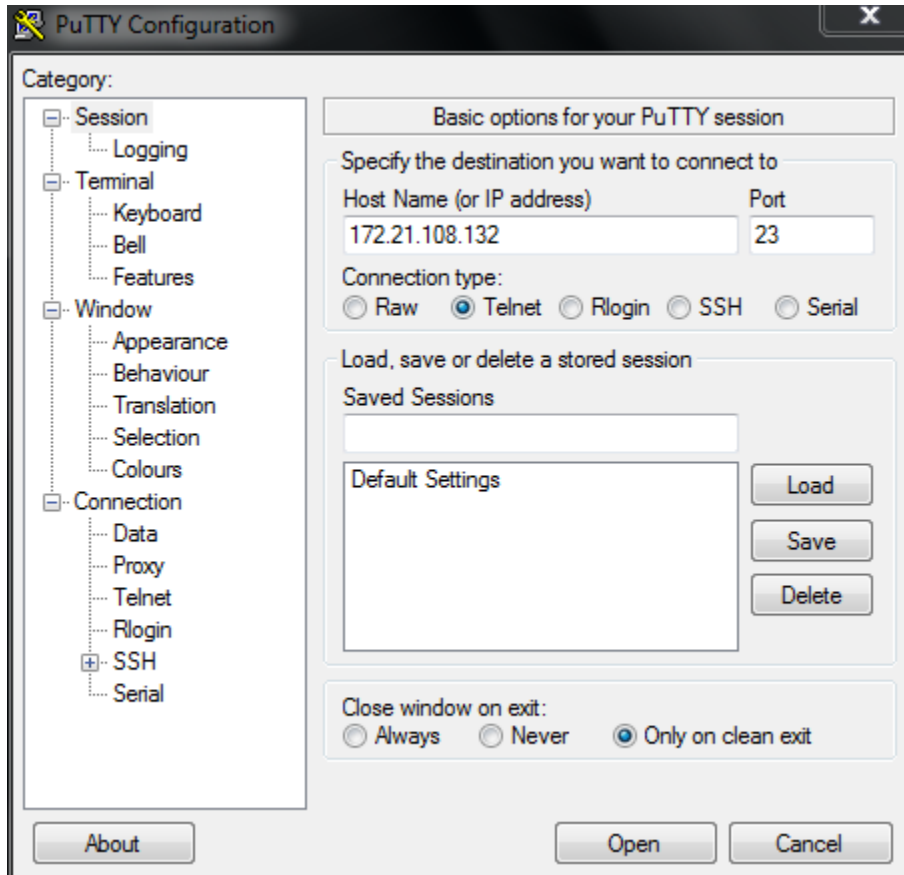


Basic Troubleshooting in TR 1815 LTE Router

1) Telnet



```
172.21.108.132 - PuTTY
WARNING: telnet is a security risk.
DR_LAL_PATH_BGP login: router      Login   :router
Password:                       Password:admin!@#

BusyBox v1.23.2 (2017-03-19 12:19:00 CST) built-in shell (ash)

=====TR-1815-LTE=====
root@DR_LAL_PATH_BGP:~#
```

2) ARP

```
172.21.108.132 - PuTTY
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~# arp
IP address      HW type  Flags          HW address    Mask         Device
10.9.242.105    0x1     0x2           00:21:9b:80:db:a5  *          br-lan
10.9.242.2      0x1     0x2           f8:72:ea:83:e1:26  *          br-lan
10.9.242.17     0x1     0x2           78:45:c4:3f:67:1a  *          br-lan
10.9.242.15     0x1     0x2           c8:1f:66:43:06:44  *          br-lan
10.9.242.11     0x1     0x2           00:17:85:04:28:c0  *          br-lan
10.9.242.50     0x1     0x2           00:c0:ee:bb:91:b6  *          br-lan
10.9.242.18     0x1     0x2           c8:1f:66:43:05:8a  *          br-lan
10.9.242.5      0x1     0x2           00:17:61:10:3f:31  *          br-lan
10.9.242.16     0x1     0x2           c8:1f:66:34:28:69  *          br-lan
10.9.242.111   0x1     0x0           00:00:00:00:00:00  *          br-lan
10.9.242.10     0x1     0x2           78:45:c4:40:62:01  *          br-lan
root@DR_LAL_PATH_BGP:~#
```

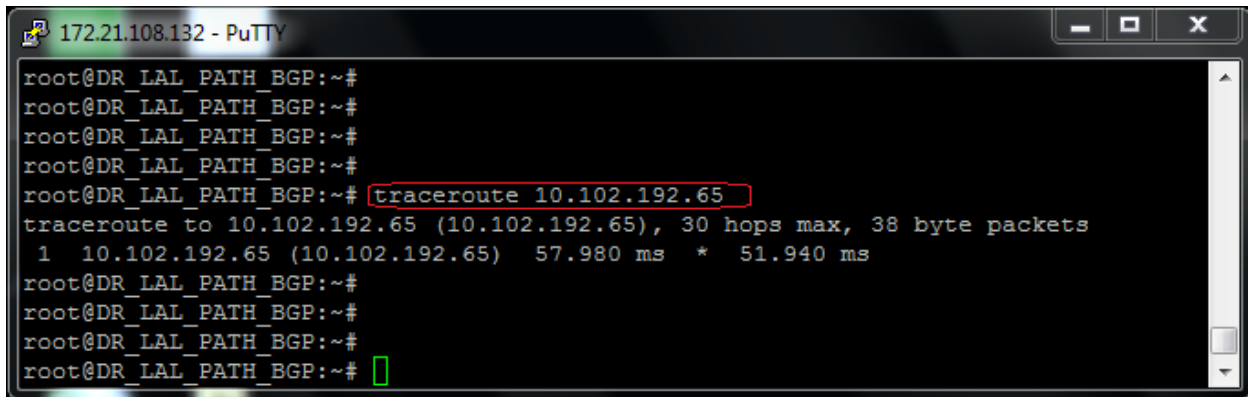
3) Syslog

```
172.21.108.132 - PuTTY
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~# logread
Tue Dec 5 10:20:19 2017 kern.info kernel: [85352.400000] rt305x-esw 10110000.esw: link changed 0x00
Tue Dec 5 10:20:19 2017 kern.info kernel: [85352.860000] br-lan: port 1(eth0.1) entered disabled state
Tue Dec 5 10:20:19 2017 kern.info kernel: [85352.880000] device eth0.1 left promiscuous mode
Tue Dec 5 10:20:19 2017 kern.info kernel: [85352.890000] br-lan: port 1(eth0.1) entered disabled state
Tue Dec 5 10:20:19 2017 kern.info kernel: [85352.920000] IPv6: ADDRCONF(NETDEV_UP): eth0.1: link is not ready
Tue Dec 5 10:20:19 2017 daemon.notice netifd: Interface 'lan' is disabled
Tue Dec 5 10:20:19 2017 daemon.notice netifd: VLAN 'eth0.1' link is down
Tue Dec 5 10:20:19 2017 daemon.notice netifd: Bridge 'br-lan' link is down
Tue Dec 5 10:20:20 2017 daemon.notice netifd: Interface 'lan' has link connectivity loss
Tue Dec 5 10:20:20 2017 daemon.warn dnsmasq[2987]: no servers found in /tmp/resolv.conf.auto, will retry
Tue Dec 5 10:20:20 2017 daemon.notice netifd: Interface 'loopback' is now down
Tue Dec 5 10:20:20 2017 daemon.notice netifd: Interface 'loopback' is disabled
Tue Dec 5 10:20:20 2017 daemon.notice netifd: Network device 'lo' link is down
Tue Dec 5 10:20:20 2017 daemon.notice netifd: Interface 'loopback' has link connectivity loss
Tue Dec 5 10:20:20 2017 daemon.notice netifd: ifmobile (21700): Received SIGTERM
Tue Dec 5 10:20:20 2017 daemon.notice netifd: Interface 'ifmobile' is now down
Tue Dec 5 10:20:20 2017 daemon.notice netifd: Interface 'ifmobile' is disabled
Tue Dec 5 10:20:20 2017 daemon.notice netifd: Network device 'wan0' link is down
Tue Dec 5 10:20:20 2017 daemon.notice netifd: Interface 'ifmobile' has link connectivity loss
Tue Dec 5 10:20:20 2017 daemon.notice netifd: wan (21142): Received SIGTERM
Tue Dec 5 10:20:20 2017 daemon.notice netifd: Interface 'wan' is now down
Tue Dec 5 10:20:20 2017 daemon.notice netifd: Interface 'wan6' is now down
Tue Dec 5 10:20:20 2017 kern.info kernel: [85353.720000] device eth0 left promiscuous mode
Tue Dec 5 10:20:20 2017 daemon.notice netifd: Interface 'wan' is disabled
Tue Dec 5 10:20:20 2017 daemon.notice netifd: Interface 'wan6' is disabled
Tue Dec 5 10:20:20 2017 daemon.notice netifd: VLAN 'eth0.2' link is down
Tue Dec 5 10:20:20 2017 daemon.notice netifd: Interface 'wan' has link connectivity loss
Tue Dec 5 10:20:20 2017 daemon.notice netifd: Interface 'wan6' has link connectivity loss
Tue Dec 5 10:20:20 2017 daemon.notice netifd: Network device 'eth0' link is down
Tue Dec 5 10:20:21 2017 kern.info kernel: [85354.280000] rt305x-esw 10110000.esw: link changed 0x01
Tue Dec 5 10:20:21 2017 kern.info kernel: [85354.720000] rt305x-esw 10110000.esw: link changed 0x00
```

4) Route

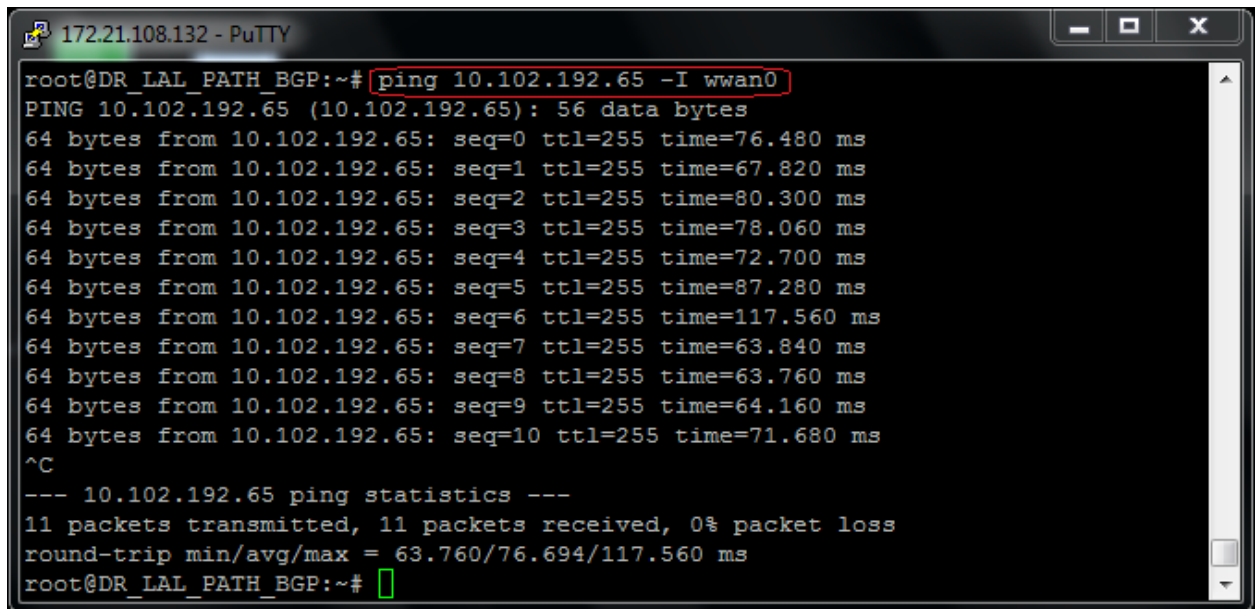
```
172.21.108.132 - PuTTY
root@DR_LAL_PATH_BGP:~# route
Kernel IP routing table
Destination      Gateway         Genmask        Flags Metric Ref    Use Iface
default          10.102.192.65  0.0.0.0        UG    0     0     0 wwan0
default          10.102.192.69  0.0.0.0        UG    0     0     0 wwan0
default          10.9.242.2     0.0.0.0        UG    20    0     0 br-lan
10.0.1.0         10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.0.0         10.102.192.65  255.255.0.0    UG    0     0     0 wwan0
10.9.105.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.112.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.115.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.125.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.134.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.140.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.141.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.144.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.146.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.148.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.151.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.155.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.156.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.157.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.158.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.165.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.169.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.171.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.172.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.173.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.174.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.180.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.182.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.210.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.219.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.241.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.9.242.0      *              255.255.255.0  U     0     0     0 br-lan
10.9.252.0      10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.11.1.0       10.102.192.65  255.255.255.0  UG    0     0     0 wwan0
10.16.163.244  10.102.192.65  255.255.255.252 UG    0     0     0 wwan0
10.102.176.192 10.102.192.65  255.255.255.252 UG    0     0     0 wwan0
10.102.176.196 10.102.192.65  255.255.255.252 UG    0     0     0 wwan0
10.102.176.200 10.102.192.65  255.255.255.252 UG    0     0     0 wwan0
10.102.176.212 10.102.192.65  255.255.255.252 UG    0     0     0 wwan0
```

5) Traceroute



```
172.21.108.132 - PuTTY
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~# traceroute 10.102.192.65
traceroute to 10.102.192.65 (10.102.192.65), 30 hops max, 38 byte packets
 1 10.102.192.65 (10.102.192.65) 57.980 ms * 51.940 ms
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~#
```

6) Ping with source interface



```
172.21.108.132 - PuTTY
root@DR_LAL_PATH_BGP:~# ping 10.102.192.65 -I wwan0
PING 10.102.192.65 (10.102.192.65): 56 data bytes
64 bytes from 10.102.192.65: seq=0 ttl=255 time=76.480 ms
64 bytes from 10.102.192.65: seq=1 ttl=255 time=67.820 ms
64 bytes from 10.102.192.65: seq=2 ttl=255 time=80.300 ms
64 bytes from 10.102.192.65: seq=3 ttl=255 time=78.060 ms
64 bytes from 10.102.192.65: seq=4 ttl=255 time=72.700 ms
64 bytes from 10.102.192.65: seq=5 ttl=255 time=87.280 ms
64 bytes from 10.102.192.65: seq=6 ttl=255 time=117.560 ms
64 bytes from 10.102.192.65: seq=7 ttl=255 time=63.840 ms
64 bytes from 10.102.192.65: seq=8 ttl=255 time=63.760 ms
64 bytes from 10.102.192.65: seq=9 ttl=255 time=64.160 ms
64 bytes from 10.102.192.65: seq=10 ttl=255 time=71.680 ms
^C
--- 10.102.192.65 ping statistics ---
11 packets transmitted, 11 packets received, 0% packet loss
round-trip min/avg/max = 63.760/76.694/117.560 ms
root@DR_LAL_PATH_BGP:~#
```

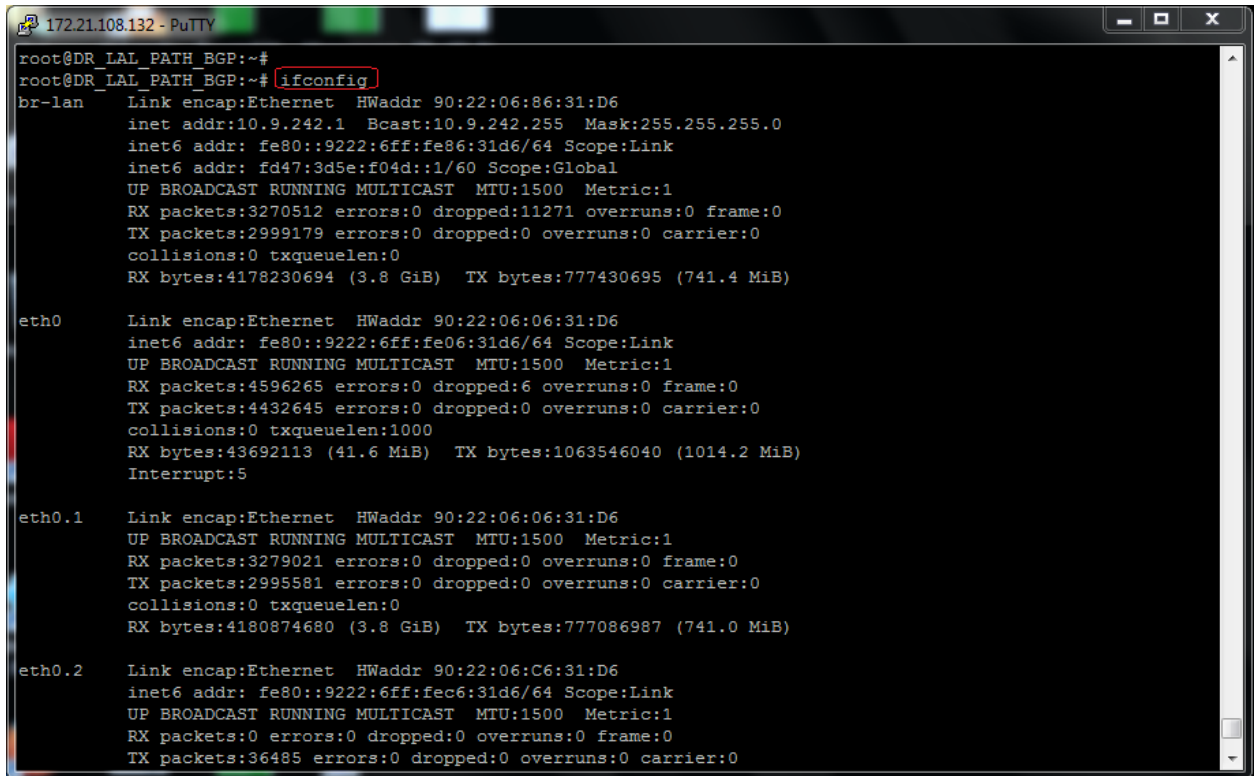
7) Check Only Cell and LAN Interface Status

```
172.21.108.132 - PuTTY
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~# ifconfig br-lan
br-lan  Link encap:Ethernet  HWaddr 90:22:06:86:31:D6
        inet addr:10.9.242.1  Bcast:10.9.242.255  Mask:255.255.255.0
        inet6 addr: fe80::9222:6ff:fe86:31d6/64 Scope:Link
        inet6 addr: fd47:3d5e:f04d::1/60 Scope:Global
        UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
        RX packets:3274558 errors:0 dropped:11287 overruns:0 frame:0
        TX packets:3002776 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 txqueuelen:0
        RX bytes:4183408541 (3.8 GiB)  TX bytes:778257265 (742.2 MiB)

root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~# ifconfig wwan0
wwan0  Link encap:Ethernet  HWaddr E6:61:FC:1C:F5:72
        inet addr:10.102.192.68  Bcast:10.102.192.71  Mask:255.255.255.248
        inet6 addr: fe80::e461:fcff:fe1c:f572/64 Scope:Link
        UP BROADCAST RUNNING NOARP MULTICAST  MTU:1500  Metric:1
        RX packets:85769 errors:0 dropped:10 overruns:0 frame:0
        TX packets:106259 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 txqueuelen:1000
        RX bytes:17786577 (16.9 MiB)  TX bytes:85880532 (81.9 MiB)

root@DR_LAL_PATH_BGP:~#
```

8) Check Interface Status



```
root@DR_LAL_PATH_BGP:~#
root@DR_LAL_PATH_BGP:~# ifconfig
br-lan      Link encap:Ethernet  HWaddr 90:22:06:86:31:D6
            inet addr:10.9.242.1  Bcast:10.9.242.255  Mask:255.255.255.0
            inet6 addr: fe80::9222:6ff:fe86:31d6/64 Scope:Link
            inet6 addr: fd47:3d5e:f04d::1/60 Scope:Global
            UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
            RX packets:3270512 errors:0 dropped:11271 overruns:0 frame:0
            TX packets:2999179 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:0
            RX bytes:4178230694 (3.8 GiB)  TX bytes:777430695 (741.4 MiB)

eth0       Link encap:Ethernet  HWaddr 90:22:06:06:31:D6
            inet6 addr: fe80::9222:6ff:fe06:31d6/64 Scope:Link
            UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
            RX packets:4596265 errors:0 dropped:6 overruns:0 frame:0
            TX packets:4432645 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:1000
            RX bytes:43692113 (41.6 MiB)  TX bytes:1063546040 (1014.2 MiB)
            Interrupt:5

eth0.1     Link encap:Ethernet  HWaddr 90:22:06:06:31:D6
            UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
            RX packets:3279021 errors:0 dropped:0 overruns:0 frame:0
            TX packets:2995581 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:0
            RX bytes:4180874680 (3.8 GiB)  TX bytes:777086987 (741.0 MiB)

eth0.2     Link encap:Ethernet  HWaddr 90:22:06:C6:31:D6
            inet6 addr: fe80::9222:6ff:fec6:31d6/64 Scope:Link
            UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
            RX packets:0 errors:0 dropped:0 overruns:0 frame:0
            TX packets:36485 errors:0 dropped:0 overruns:0 carrier:0
```