

Four Faith Load Balance Testing

Firmware Verison:uimage-F3946-STD-VPN-20170609.flash

1. When disable failover, only sim1 will online.

The screenshot shows the WAN Setup configuration page for a Wireless Mobile Router. The 'DUAL LINK OPTION' section is highlighted with a red box, showing 'Enable WAN Fallover' with the 'Disable' radio button selected. The 'Wan Nat' section has 'Enable' selected. The 'Main WAN Connection Type' section shows 'Connection Type' set to 'dhcp-4G'. The status bar at the top right indicates 'WAN IP: 10.21.155.116'.

2. When enable "dual both online" but disable "load balance".

Both sim1 and sim2 will online at the same time, but data will go through sim1. Bandwidth will be sim1's bandwidth.

The screenshot shows the WAN Setup configuration page with 'Dual Both Online' and 'Load Balancer' options highlighted by red boxes. In the 'DUAL LINK OPTION' section, 'Dual Both Online' has 'Enable' selected and 'Load Balancer' has 'Disable' selected. The 'Wan Nat' section has 'Enable' selected. The status bar at the top right indicates 'WAN IP: 10.22.105.60'.


Menu

- [Setup](#)
- [Wireless](#)
- [Services](#)
- [VPN](#)
- [Security](#)
- [Access Restrictions](#)
- [NAT](#)
- [QoS Setting](#)
- [Applications](#)
- [Administration](#)
- Status**
 - [Router](#)
 - [WAN](#)
 - [Bkup WAN](#)
 - [LAN](#)
 - [Wireless](#)
 - [Device Management](#)
 - [Bandwidth](#)
 - [Sys-Info](#)

WAN

Configuration Type

Connection Type	Automatic Configuration - DHCP
Connection Uptime	0:01:58
IP Address	10.22.105.60
Subnet Mask	255.255.255.248
Gateway	10.22.105.57
DNS 1	218.104.128.106
DNS 2	58.22.96.66
DNS 3	



Signal Status	-57 dBm
Network	LTE FDD
Remaining Lease Time	5 days 23:57:56

Traffic


Menu

- [Setup](#)
- [Wireless](#)
- [Services](#)
- [VPN](#)
- [Security](#)
- [Access Restrictions](#)
- [NAT](#)
- [QoS Setting](#)
- [Applications](#)
- [Administration](#)
- Status**
 - [Router](#)
 - [WAN](#)
 - [Bkup WAN](#)**
 - [LAN](#)
 - [Wireless](#)
 - [Device Management](#)
 - [Bandwidth](#)
 - [Sys-Info](#)

Bkup WAN

Configuration Type

Connection Type	Automatic Configuration - DHCP
Connection Uptime	0:02:28
IP Address	10.50.26.67
Subnet Mask	255.255.255.248
Gateway	10.50.26.65
DNS 1	218.104.128.106
DNS 2	58.22.96.66
DNS 3	



Signal Status	-53 dBm
Network	LTE FDD
Remaining Lease Time	5 days 23:57:26

Load balance

Use **TCPDUMP** commands to capture main wan and backup wan's package while i surfing the internet.

Commands "ifconfig" to show interface

```
usb0      Link encap:Ethernet  HWaddr 02:1E:10:1F:00:00
          inet addr:10.22.105.60  Bcast:10.22.105.63  Mask:255.255.255.248
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:1373 errors:0 dropped:0 overruns:0 frame:0
          TX packets:1356 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:445073 (434.6 KiB)  TX bytes:275846 (269.3 KiB)

usb1      Link encap:Ethernet  HWaddr 02:1E:10:1F:00:00
          inet addr:10.50.26.67  Bcast:10.50.26.71  Mask:255.255.255.248
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:10 errors:0 dropped:0 overruns:0 frame:0
          TX packets:9 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:1080 (1.0 KiB)  TX bytes:1178 (1.1 KiB)
```

usb0 is main wan(simcard1), can capture data

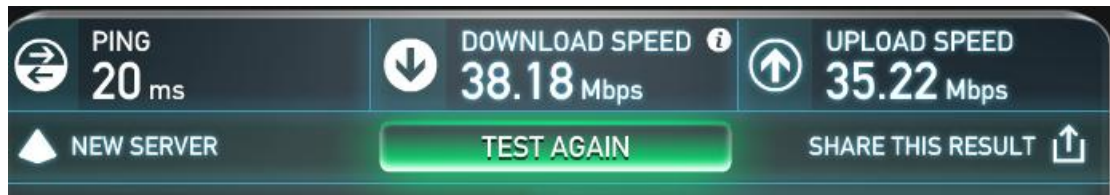
```
admin@Four-Faith:~# tcpdump -i usb0 -vnn
tcpdump: listening on usb0, link-type EN10MB (Ethernet), capture size 262144 bytes
16:31:52.858300 IP (tos 0x0, ttl 47, id 4343, offset 0, flags [DF], proto TCP (6), length 40)
    198.11.178.97.80 > 10.22.105.60.60616: Flags [.], cksum 0x7715 (correct), ack 4146182873, win 65234, length 0
16:31:52.859220 IP (tos 0x0, ttl 63, id 2660, offset 0, flags [DF], proto TCP (6), length 773)
    10.22.105.60.60616 > 198.11.178.97.80: Flags [P.], cksum 0x6522 (correct), seq 1:734, ack 0, win 16695, length 733
16:31:53.266500 IP (tos 0x0, ttl 47, id 8837, offset 0, flags [DF], proto TCP (6), length 40)
    198.11.178.97.80 > 10.22.105.60.60616: Flags [.], cksum 0x7715 (correct), ack 734, win 64501, length 0
16:31:53.644400 IP (tos 0x0, ttl 63, id 2664, offset 0, flags [DF], proto TCP (6), length 52)
    10.22.105.60.60617 > 192.168.10.10.445: Flags [S], cksum 0x7ed4 (correct), seq 307991075, win 8192, options [mss 1260,nop,wscale 2,nop,nop,sackOK], length 0
16:31:53.848260 IP (tos 0x0, ttl 63, id 2666, offset 0, flags [DF], proto TCP (6), length 52)
    10.22.105.60.60618 > 192.168.8.250.9661: Flags [S], cksum 0x7a8d (correct), seq 346386735, win 8192, options [mss 1260,nop,wscale 2,nop,nop,sackOK], length 0
^C
5 packets captured
5 packets received by filter
0 packets dropped by kernel
admin@Four-Faith:~#
```

usb1 is backup wan(simcard2), can not capture data

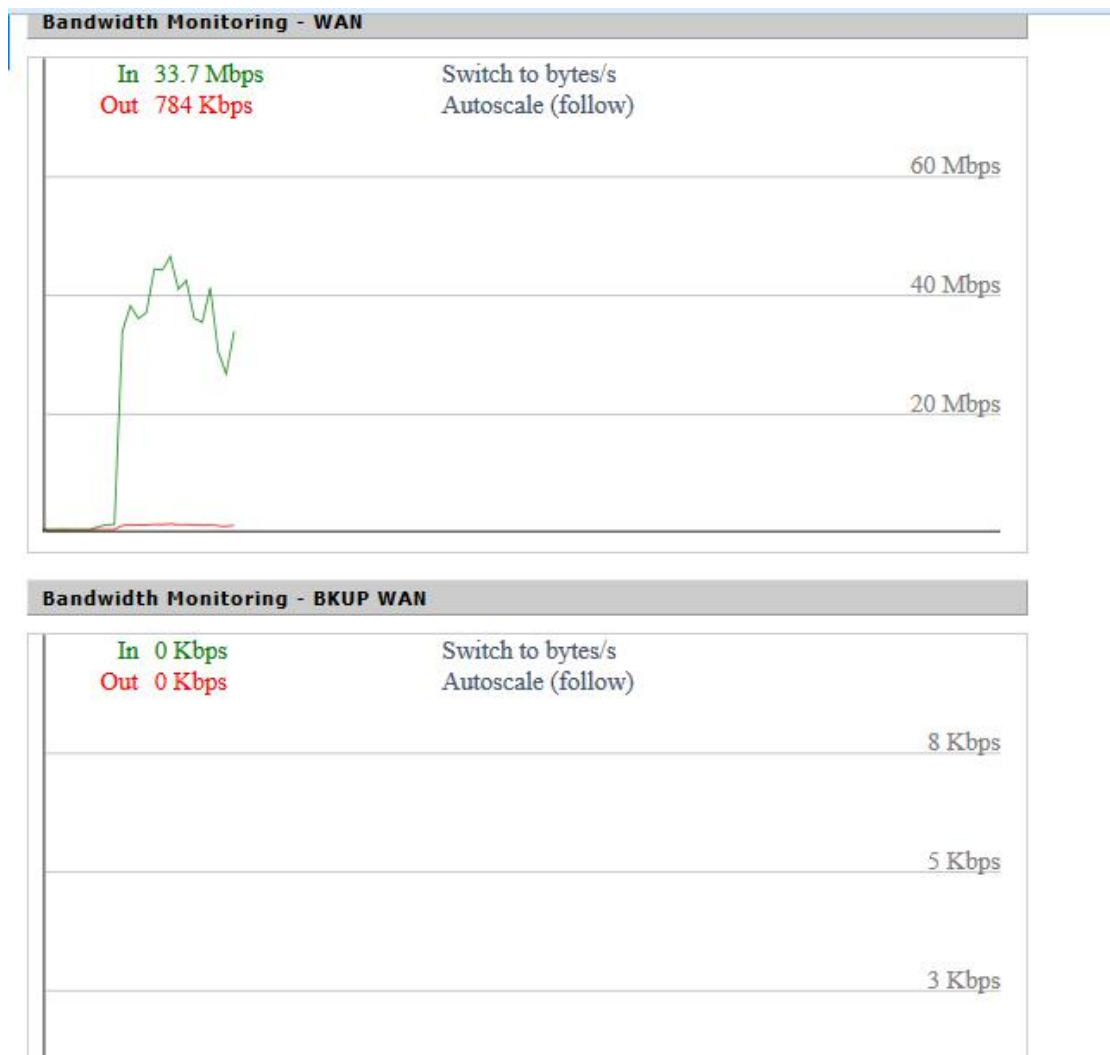
```
admin@Four-Faith:~# tcpdump -i usb1 -vnn
tcpdump: listening on usb1, link-type EN10MB (Ethernet), capture size 262144 bytes
```

Bandwidth

Speed test by www.speedtest.net



In Status Tab->Bandwidth option, Wan will running data but backup wan will not running.



3. When enable "dual both online" and "load balance".

Both sim1 and sim2 will online at the same time, data will go through sim1 and sim2 .Bandwidth will be sim1+sim2's bandwidth.

(tips:after apply "load balance", pls restart router)

Load balance

Use TCPDUMP commands to capture data.






Can capture data from usb1

```
admin@Four-Faith:~# tcpdump -i usb1 -vnn
tcpdump: listening on usb1, link-type EN10MB (Ethernet), capture size 262144 bytes
16:48:11.929860 IP (tos 0x0, ttl 63, id 15840, offset 0, flags [DF], proto UDP (17), length 176)
    10.21.241.52.55185 > 157.55.56.166.40007: UDP, length 148
16:48:11.929960 IP (tos 0x0, ttl 63, id 15841, offset 0, flags [DF], proto UDP (17), length 176)
    10.21.241.52.55185 > 157.55.56.166.40007: UDP, length 148
16:48:12.229940 IP (tos 0x0, ttl 63, id 15846, offset 0, flags [DF], proto UDP (17), length 174)
    10.21.241.52.55185 > 157.55.235.150.40001: UDP, length 146
16:48:12.230020 IP (tos 0x0, ttl 63, id 15847, offset 0, flags [DF], proto UDP (17), length 174)
    10.21.241.52.55185 > 157.55.235.150.40001: UDP, length 146
16:48:12.979900 IP (tos 0x0, ttl 63, id 15872, offset 0, flags [DF], proto UDP (17), length 172)
    10.21.241.52.55185 > 157.55.130.162.40024: UDP, length 144
^C
5 packets captured
```

Can capture data from usb0 too

```
admin@Four-Faith:~# tcpdump -i usb0 -vnn
tcpdump: listening on usb0, link-type EN10MB (Ethernet), capture size 262144 bytes
16:48:21.245580 IP (tos 0x0, ttl 50, id 1962, offset 0, flags [DF], proto TCP (6), length 43)
    111.221.77.153.40016 > 10.21.241.52.63113: Flags [P.], cksum 0x4d68 (correct), seq 3198411979:3198411982, ack 973145310, win 83, length 3
16:48:21.447360 IP (tos 0x0, ttl 63, id 16088, offset 0, flags [DF], proto TCP (6), length 40)
    10.21.241.52.63113 > 111.221.77.153.40016: Flags [L.], cksum 0x41ad (correct), ack 3, win 16443, length 0
16:48:21.511400 IP (tos 0x0, ttl 50, id 1963, offset 0, flags [DF], proto TCP (6), length 70)
    111.221.77.153.40016 > 10.21.241.52.63113: Flags [P.], cksum 0xb222 (correct), seq 3:33, ack 1, win 83, length 30
16:48:21.512180 IP (tos 0x0, ttl 63, id 16097, offset 0, flags [DF], proto TCP (6), length 44)
    10.21.241.52.63113 > 111.221.77.153.40016: Flags [P.], cksum 0x09cb (correct), seq 1:5, ack 33, win 16435, length 4
16:48:21.557180 IP (tos 0x0, ttl 50, id 1964, offset 0, flags [DF], proto TCP (6), length 40)
    111.221.77.153.40016 > 10.21.241.52.63113: Flags [L.], cksum 0x8173 (correct), ack 5, win 83, length 0
16:48:23.596540 IP (tos 0x0, ttl 63, id 16142, offset 0, flags [DF], proto TCP (6), length 41)
```

Speed test

 PING 25 ms	 DOWNLOAD SPEED 50.74 Mbps	 UPLOAD SPEED 41.26 Mbps
 NEW SERVER	TEST AGAIN	SHARE THIS RESULT 

Both WAN and Backup WAN are running data

