



How To Guide:
Using OSPF in Overlay Network

Introduction

The Q-Balancer route tables can fully coexist with the existing routing infrastructure. It also ensures site-to-site access in case one of WAN links fails. This article outlines the OSPF routing configuration on the Q-Balancer appliance with a site-to-site network diagram below:

Diagram Example

Branch:

Port 1:

WAN 1:

IP: 203.67.222.45

Port 2:

WAN 2:

IP: 118.160.122.203

Branch LAN:

Port 4:

LAN_192.0

192.168.0.0/24, Interface: 192.168.0.254

LAN_192.1:

192.168.1.0/24,

Interface: 192.168.1.254

HQ:

Port 1:

WAN 1:

IP: 36.225.183.37

Port 2:

WAN 2:

IP: 203.67.222.46

HQ LAN:

Port 3:

LAN_192.4

192.168.4.0/24, Interface: 192.168.4.254

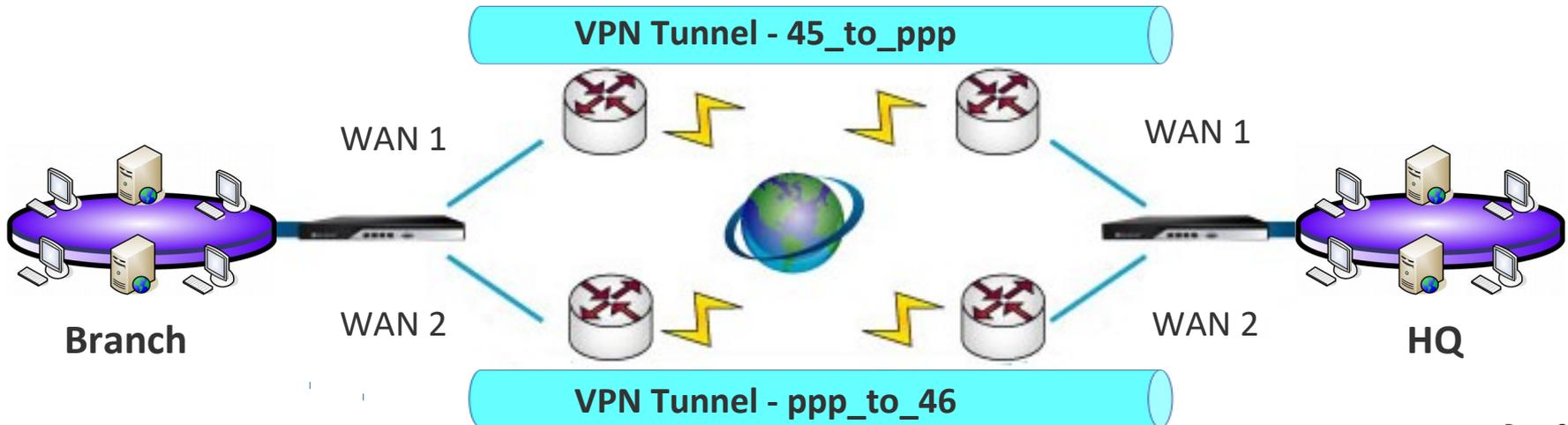
Port 4:

LAN_192.2

192.168.2.0/24, Interface: 192.168.2.254

LAN_192.3

192.168.3.0/24, Interface: 192.168.3.254



Follow the steps below to configure OSPF at branch and HQ respectively:

- > Configure the network subnets and WAN links
- > On Web UI, navigate to ***Dynamic Routing > OSPF*** for configuration

With the IP details given in the diagram, the LAN and tunnels on the Q-Balancer at branch is set as follows:

LAN

ADD		DELETE								
<input type="checkbox"/>	Edit	Enabled	Name ↑↓	Port ↑↓	Interface ↑↓	Subnet ↑↓	Route ↑↓	IP ↑↓		
<input type="checkbox"/>		<input checked="" type="checkbox"/>	LAN_192.0	Port 4	eth3_4	192.168.0.0/24	Interface	192.168.0.254		
<input type="checkbox"/>		<input checked="" type="checkbox"/>	LAN_192.1	Port 4	eth3_2	192.168.1.0/24	Interface	192.168.1.254		

Tunnels

ADD		DELETE									
<input type="checkbox"/>	Edit	Enabled	Status ↑↓	Name ↑↓	Role ↑↓	Local ↑↓	Remote ↑↓	Interface ↑↓	Port ↑↓		
<input type="checkbox"/>		<input checked="" type="checkbox"/>	✓	45_to_ppp	Client	203.67.222.45	36.225.183.37	tmv6	4007		
<input type="checkbox"/>		<input checked="" type="checkbox"/>	✓	ppp_to_46	Client	118.160.122.203	203.67.222.46	tmv7	4008		

Dynamic Routing > OSPF at Branch

OSPF

Enabled

Listen Port for Telnet

2604

Passowrd for Telnet

qbalancer

Router ID

203.67.222.45

User defined

Hello Interval (Seconds)

10

Retransmit Interval (Seconds)

6

Dead Interval (Seconds)

30

Links

45_to_ppp, ppp_to_46, LAN_192.0, LAN_192.1

Area

45_to_ppp

0

ppp_to_46

0

LAN_192.0

0

LAN_192.1

0

OK

With the IP details given in the diagram, the LAN and tunnels on the Q-Balancer at HQ is set as follows:

LAN

ADD		DELETE												
<input type="checkbox"/>	Edit	Enabled	Name	↑↓	Port	↑↓	Interface	↑↓	Subnet	↑↓	Route	↑↓	IP	↑↓
<input type="checkbox"/>		<input checked="" type="checkbox"/>	LAN_192.2		Port 4		eth3_8		192.168.2.0/24		Interface		192.168.2.254	
<input type="checkbox"/>		<input checked="" type="checkbox"/>	LAN_192.3		Port 4		eth3_7		192.168.3.0/24		Interface		192.168.3.254	
<input type="checkbox"/>		<input checked="" type="checkbox"/>	LAN_4		Port 3		eth2_9		192.168.4.0/24		Interface		192.168.4.254	

Tunnels

ADD		DELETE														
<input type="checkbox"/>	Edit	Enabled	Status	↑↓	Name	↑↓	Role	↑↓	Local	↑↓	Remote	↑↓	Interface	↑↓	Port	↑↓
<input type="checkbox"/>		<input checked="" type="checkbox"/>	✓		ppp_to_45		Server		36.225.183.37		<input type="checkbox"/>		tmv6		4007	
<input type="checkbox"/>		<input checked="" type="checkbox"/>	✓		46_to_ppp		Server		203.67.222.46		<input type="checkbox"/>		tmv7		4008	

Dynamic Routing > OSPF at HQ

OSPF

Enabled

Listen Port for Telnet

2604

Passowrd for Telnet

qbalancer

Router ID

203.67.222.46

User defined

Hello Interval (Seconds)

10

Retransmit Interval (Seconds)

6

Dead Interval (Seconds)

30

Links

46_to_ppp, ppp_to_45, LAN_192.2, LAN_192.3

Area

46_to_ppp

ppp_to_45

LAN_192.2

LAN_192.3

0

0

0

0

OK

To view routing table on the Q-Balancers, navigate to Diagnostic > Routing Tool and click on OK.

The screenshot displays the Q-Balancer web interface. On the left is a vertical sidebar menu with the following items: Dynamic Routing, Server Mapping, Firewall, VPN, Network, DNS, HA, Diagnostic (highlighted in grey), System, and Logs and Reports. A blue arrow points from the 'Diagnostic' menu item to a right-hand panel. This panel contains a list of diagnostic tools, each with a radio button: Routing Tool (selected), Show ARP Cache, Open Port Check, Network Port Scan, Netbios Scan, and Measure Tunnel Speed. Below this list is a section titled 'Options of Routing Tool' which includes a text input field labeled 'Options route' and a blue 'OK' button. A second blue arrow points from the 'Routing Tool' radio button to the 'OK' button.

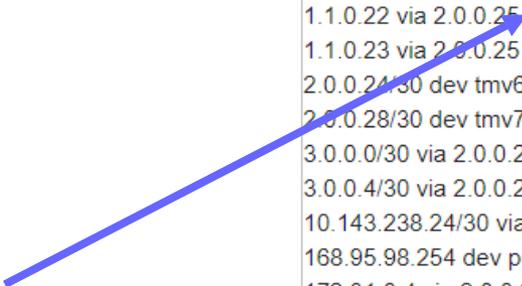
For example, routing table on the Q-Balancer at branch:

Diagnostic

```

default
nexthop via 203.67.222.1 dev eth0_5 weight 1
nexthop via 168.95.98.254 dev ppp1 weight 1
1.1.0.4 dev bmv4 proto kernel scope link src 1.2.0.4
1.1.0.5 dev bmv5 proto kernel scope link src 1.2.0.5
1.1.0.18 via 2.0.0.25 dev tmv6 proto zebra metric 20
1.1.0.19 via 2.0.0.25 dev tmv6 proto zebra metric 20
1.1.0.20 via 2.0.0.25 dev tmv6 proto zebra metric 20
1.1.0.21 via 2.0.0.25 dev tmv6 proto zebra metric 20
1.1.0.22 via 2.0.0.25 dev tmv6 proto zebra metric 20
1.1.0.23 via 2.0.0.25 dev tmv6 proto zebra metric 20
2.0.0.24/30 dev tmv6 proto kernel scope link src 2.0.0.26
2.0.0.28/30 dev tmv7 proto kernel scope link src 2.0.0.30
3.0.0.0/30 via 2.0.0.25 dev tmv6 proto zebra metric 20
3.0.0.4/30 via 2.0.0.25 dev tmv6 proto zebra metric 20
10.143.238.24/30 via 2.0.0.25 dev tmv6 proto zebra metric 20
168.95.98.254 dev ppp1 proto kernel scope link src 118.160.122.203
172.31.0.4 via 2.0.0.25 dev tmv6 proto zebra metric 20
172.31.3.0/30 dev eth5 proto kernel scope link src 172.31.3.1
172.31.3.0/30 via 2.0.0.25 dev tmv6 proto zebra metric 20
192.168.0.0/24 dev eth3_4 proto kernel scope link src 192.168.0.254
192.168.1.0/24 dev eth3_2 proto kernel scope link src 192.168.1.254
192.168.2.0/24 via 2.0.0.25 dev tmv6 proto zebra metric 20
192.168.3.0/24 via 2.0.0.25 dev tmv6 proto zebra metric 20
203.67.222.1 dev eth0_5 scope link
203.67.222.45 dev eth3 scope link
203.67.222.46 via 2.0.0.25 dev tmv6 proto zebra metric 20
254.0.0.0/30 via 2.0.0.25 dev tmv6 proto zebra metric 20
254.0.0.3 via 2.0.0.25 dev tmv6 proto zebra metric 20
254.0.0.4/30 via 2.0.0.25 dev tmv6 proto zebra metric 20
254.0.0.7 via 2.0.0.25 dev tmv6 proto zebra metric 20
254.0.0.8/30 dev bond2 scope link
    
```

Current path is tmv6



Routing table on the Q-Balancer at branch dynamically adjusts when one of the link fails:

The route gets changed from tmv6 to tmv7 when one of WAN links fails.

Diagnostic

```
default
nexthop via 203.67.222.1 dev eth0_5 weight 1
nexthop via 168.95.98.254 dev ppp1 weight 1
1.1.0.4 dev bmv4 proto kernel scope link src 1.2.0.4
1.1.0.5 dev bmv5 proto kernel scope link src 1.2.0.5
1.1.0.18 via 2.0.0.25 dev tmv6 proto zebra metric 20
1.1.0.19 via 2.0.0.25 dev tmv6 proto zebra metric 20
1.1.0.20 via 2.0.0.25 dev tmv6 proto zebra metric 20
1.1.0.21 via 2.0.0.25 dev tmv6 proto zebra metric 20
1.1.0.22 via 2.0.0.25 dev tmv6 proto zebra metric 20
1.1.0.23 via 2.0.0.25 dev tmv6 proto zebra metric 20
2.0.0.24/30 dev tmv6 proto kernel scope link src 2.0.0.26
2.0.0.28/30 dev tmv7 proto kernel scope link src 2.0.0.30
3.0.0.0/30 via 2.0.0.25 dev tmv6 proto zebra metric 20
3.0.0.4/30 via 2.0.0.25 dev tmv6 proto zebra metric 20
10.143.238.24/30 via 2.0.0.25 dev tmv6 proto zebra metric 20
168.95.98.254 dev ppp1 proto kernel scope link src 118.160.122.203
172.31.0.4 via 2.0.0.25 dev tmv6 proto zebra metric 20
172.31.3.0/30 dev eth5 proto kernel scope link src 172.31.3.1
172.31.3.0/30 via 2.0.0.25 dev tmv6 proto zebra metric 20
```

Diagnostic

```
default
nexthop via 203.67.222.1 dev eth0_5 weight 1
nexthop via 168.95.98.254 dev ppp1 weight 1
1.1.0.4 dev bmv4 proto kernel scope link src 1.2.0.4
1.1.0.5 dev bmv5 proto kernel scope link src 1.2.0.5
1.1.0.18 via 2.0.0.29 dev tmv7 proto zebra metric 20
1.1.0.19 via 2.0.0.29 dev tmv7 proto zebra metric 20
1.1.0.20 via 2.0.0.29 dev tmv7 proto zebra metric 20
1.1.0.21 via 2.0.0.29 dev tmv7 proto zebra metric 20
1.1.0.22 via 2.0.0.29 dev tmv7 proto zebra metric 20
1.1.0.23 via 2.0.0.29 dev tmv7 proto zebra metric 20
2.0.0.28/30 dev tmv7 proto kernel scope link src 2.0.0.30
3.0.0.0/30 via 2.0.0.29 dev tmv7 proto zebra metric 20
3.0.0.4/30 via 2.0.0.29 dev tmv7 proto zebra metric 20
10.143.238.24/30 via 2.0.0.29 dev tmv7 proto zebra metric 20
168.95.98.254 dev ppp1 proto kernel scope link src 118.160.122.203
172.31.0.4 via 2.0.0.29 dev tmv7 proto zebra metric 20
172.31.3.0/30 dev eth5 proto kernel scope link src 172.31.3.1
172.31.3.0/30 via 2.0.0.29 dev tmv7 proto zebra metric 20
192.168.0.0/24 dev eth3_4 proto kernel scope link src 192.168.0.254
192.168.1.0/24 dev eth3_2 proto kernel scope link src 192.168.1.254
192.168.2.0/24 via 2.0.0.29 dev tmv7 proto zebra metric 20
192.168.3.0/24 via 2.0.0.29 dev tmv7 proto zebra metric 20
203.67.222.1 dev eth0_5 scope link
203.67.222.45 dev eth3 scope link
203.67.222.46 via 2.0.0.29 dev tmv7 proto zebra metric 20
254.0.0.0/30 via 2.0.0.29 dev tmv7 proto zebra metric 20
254.0.0.3 via 2.0.0.29 dev tmv7 proto zebra metric 20
254.0.0.4/30 via 2.0.0.29 dev tmv7 proto zebra metric 20
254.0.0.7 via 2.0.0.29 dev tmv7 proto zebra metric 20
254.0.0.8/30 dev bond2 scope link
```