

RIP Configuration

Network topology:

Router A: Lan subnet 192.168.2.0/24, WAN ip address: 192.168.1.118

Router B: Lan subnet 192.168.3.0/24, WAN ip address: 192.168.1.138

Router C: Lan subnet 192.168.1.0/24, Router A and Router B's WAN ports connect to Router C.

1. Enable RIP on Router A. Open page Network→Dynamic Routing, check enable of zebra, and enable RIP also, then click button "Save & Apply"

Dynamic Routing

Zebra

Enable

Password 

OSPF

Enable

Password 

OSPF6

Enable

Password 

RIP

Enable

Password 

2. Config fireall. Open page Network→Firewall → Traffic Rules.

Status

System

Services

Network

Operation Mode

Mobile

LAN

Wired WAN

WAN IPv6

Interfaces

Wi-Fi

Firewall

Static Routes

Switch

DHCP and DNS

Diagnostics

[General Settings](#) [Port Forwards](#) [Traffic Rules](#) [Source NAT](#) [DMZ](#) [Security](#)

Firewall - Traffic Rules

Traffic rules define policies for packets traveling between different zones, for example to reject traffic between certain hosts.


Traffic Rules

Name	Match	Action	Enable
Allow- All-LAN- Ports	Any traffic From <i>any host</i> in wan To <i>any host</i> , ports 1-65535 in lan	<i>Accept forward</i>	<input type="checkbox"/>
Allow- DHCP- Renew	IPv4-UDP From <i>any host</i> in wan To <i>any router IP</i> at port 68 on <i>this device</i>	<i>Accept input</i>	<input checked="" type="checkbox"/>
Allow- Ping- WAN	IPv4-ICMP with type <i>echo-request</i> From <i>any host</i> in wan To <i>any router IP</i> on <i>this device</i>	<i>Accept input</i>	<input checked="" type="checkbox"/>
Allow- IGMP	IPv4-IGMP From <i>any host</i> in wan To <i>any router IP</i> on <i>this device</i>	<i>Accept input</i>	<input checked="" type="checkbox"/>


3. Scroll down, Open ports 520 on router, input name (RIP) and external port (520) , then click button “Add”. Then click button “Save & Apply”.

Allow- ICMPv6- Forward	IPv6-ICMP with types <i>echo-request, echo-reply, destination-unreachable, packet-too-big, time-exceeded, bad-header, unknown-header-type</i> From <i>any host in wan</i> To <i>any host in any zone</i>	Accept forward and limit to 1000 pkts. per second	<input checked="" type="checkbox"/>
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Open ports on router:

Name	Protocol	External port	
<input type="text" value="RIP"/>	TCP+UDP	<input type="text" value="520"/>	 Add

New forward rule:

Name	Source zone	Destination zone	
<input type="text" value="New forward rule"/>	lan	wan	 Add and edit...

Save & Apply

Save

Reset

4. telnet to router to config RIP, the telnet port for RIP is 2602

```
root@R-1815-LTE:~# telnet localhost 2602

Entering character mode
Escape character is '^]'.

hello, this is Quagga (version 0.99.22.4).
Copyright 1996-2005 Kunihiro Ishiguro, et al.

User Access Verification

Password:
R-1815-LTE>
R-1815-LTE> en
R-1815-LTE> enable
R-1815-LTE#
R-1815-LTE# conf
R-1815-LTE# configure term
R-1815-LTE# configure terminal
R-1815-LTE(config)#
R-1815-LTE(config)# router rip
R-1815-LTE(config-router)#
R-1815-LTE(config-router)# network 192.168.1.0/24
R-1815-LTE(config-router)#
R-1815-LTE(config-router)# network 192.168.2.0/24
R-1815-LTE(config-router)#
R-1815-LTE(config-router)# write file
Configuration saved to /etc/quagga/ripd.conf
R-1815-LTE(config-router)#
R-1815-LTE(config-router)# q
R-1815-LTE(config)#
R-1815-LTE(config)# q
R-1815-LTE#
R-1815-LTE# q

Connection closed by foreign host
```

5. Enable RIP and Zebra on Router B, and config traffic rules as same as Router A, then config RIP:

```
root@CM685V_W:~# telnet localhost 2602
```

```
Entering character mode  
Escape character is '^]'.  
  
Hello, this is Quagga (version 0.99.22.4).  
Copyright 1996-2005 Kunihiro Ishiguro, et al.
```

```
User Access Verification
```

```
Password:  
CM685V_W>  
CM685V_W> en  
CM685V_W> enable  
CM685V_W#  
CM685V_W# config term  
CM685V_W# config terminal  
CM685V_W(config)#  
CM685V_W(config)# router rip  
CM685V_W(config-router)#  
CM685V_W(config-router)# network 192.168.1.0/24  
CM685V_W(config-router)#  
CM685V_W(config-router)# network 192.168.3.0/24  
CM685V_W(config-router)#  
CM685V_W(config-router)# write file  
Configuration saved to /etc/quagga/ripd.conf  
CM685V_W(config-router)#  
CM685V_W(config-router)# q  
CM685V_W(config)#  
CM685V_W(config)# q  
CM685V_W#  
CM685V_W# q
```

```
Connection closed by foreign host
```

```
root@CM685V_W:~#
```

6. check route in CLI.

```
Connection closed by foreign host
```

```
root@TR-1815-LTE:~# route
```

```
Kernel IP routing table
```

Destination	Gateway	Genmask	Flags	Metric	Ref	Use	Iface
default	192.168.1.1	0.0.0.0	UG	0	0	0	eth0.2
192.168.1.0	*	255.255.255.0	U	0	0	0	eth0.2
192.168.1.1	*	255.255.255.255	UH	0	0	0	eth0.2
192.168.2.0	*	255.255.255.0	U	0	0	0	br-lan
192.168.3.0	192.168.1.138	255.255.255.0	UG	2	0	0	eth0.2

```

root@CM685V_W:~# route
Kernel IP routing table
Destination      Gateway         Genmask         Flags Metric Ref    Use Iface
default          192.168.1.1    0.0.0.0         UG    0     0     0 eth0.2
192.168.1.0      *              255.255.255.0   U     0     0     0 eth0.2
192.168.1.1      *              255.255.255.255 UH    0     0     0 eth0.2
192.168.2.0      192.168.1.118 255.255.255.0   UG    2     0     0 eth0.2
192.168.3.0      *              255.255.255.0   U     0     0     0 br-lan
    
```

7. check route on GUI.

Status

- Overview
- Network
- Firewall
- Routes**
- System Log
- Kernel Log
- Reboot Log
- Realtime Graphs
- VPN

System

Services

Network

Logout

Routes

The following rules are currently active on this system.

ARP

IPv4-Address	MAC-Address	Interface
192.168.1.138	90:22:06:c0:04:00	eth0.2
192.168.2.100	3c:07:54:76:91:5e	br-lan
192.168.1.1	90:22:06:80:53:69	eth0.2

Active IPv4-Routes

Network	Target	IPv4-Gateway	Metric	Table
wan	0.0.0.0/0	192.168.1.1	0	main
wan	192.168.1.0/24		0	main
wan	192.168.1.1		0	main
lan	192.168.2.0/24		0	main
wan	192.168.3.0/24	192.168.1.138	2	main

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Overview
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Network
Logout

Routes

The following rules are currently active on this system.

ARP

IPv4-Address	MAC-Address	Interface
192.168.3.171	00:e0:66:af:f1:b7	br-lan
192.168.1.118	90:22:06:c0:53:50	eth0.2
192.168.1.1	90:22:06:80:53:69	eth0.2

Active IPv4-Routes

Network	Target	IPv4-Gateway	Metric	Table
wan	0.0.0.0/0	192.168.1.1	0	main
wan	192.168.1.0/24		0	main
wan	192.168.1.1		0	main
wan	192.168.2.0/24	192.168.1.118	2	main
lan	192.168.3.0/24		0	main

8. check ping and traceroute

```
dentydeMacBook-Pro-3:~ apple$ ping 192.168.3.1
PING 192.168.3.1 (192.168.3.1): 56 data bytes
64 bytes from 192.168.3.1: icmp_seq=0 ttl=63 time=1.574 ms
64 bytes from 192.168.3.1: icmp_seq=1 ttl=63 time=1.350 ms
64 bytes from 192.168.3.1: icmp_seq=2 ttl=63 time=1.359 ms
^C
--- 192.168.3.1 ping statistics ---
3 packets transmitted, 3 packets received, 0.0% packet loss
round-trip min/avg/max/stddev = 1.350/1.428/1.574/0.104 ms
dentydeMacBook-Pro-3:~ apple$ traceroute 192.168.3.1
traceroute to 192.168.3.1 (192.168.3.1), 64 hops max, 52 byte packets
 1 tr-1815-lte (192.168.2.1)  1.054 ms  0.720 ms  0.610 ms
 2 192.168.3.1 (192.168.3.1)  1.412 ms  1.329 ms  1.256 ms
dentydeMacBook-Pro-3:~ apple$
```