

MIKROTIK LOAD BALANCING PCC + FAILOVER

Note : RB 450G

Load balancing 2 koneksi WAN/Speedy/ISP (lebih dari 2 koneksi config disesuaikan)

WAN1&WAN2 - Mikrotik - LAN

WAN1 : 192.168.100.1/24 (Rx. 5 Mbps & Tx. 1 Mbps)

WAN2 : 192.168.200.1/24 (Rx. 5 Mbps & Tx. 1 Mbps)

Mikrotik : eth1 192.168.100.5/24

eth2 192.168.200.5/24

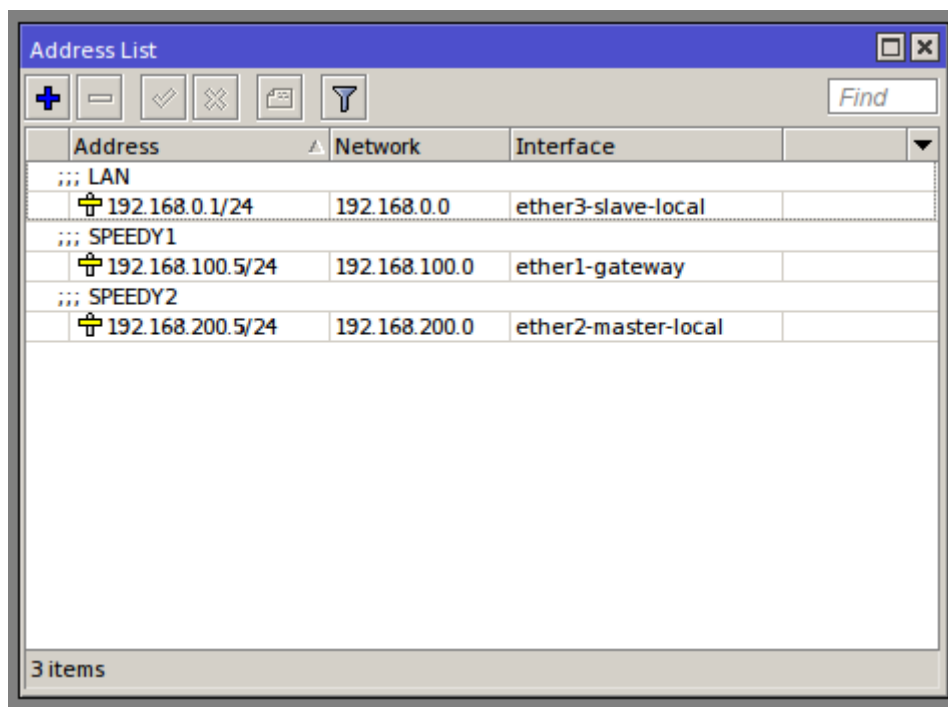
eth3 192.168.0.1/24

LAN : 192.168.0.0/24

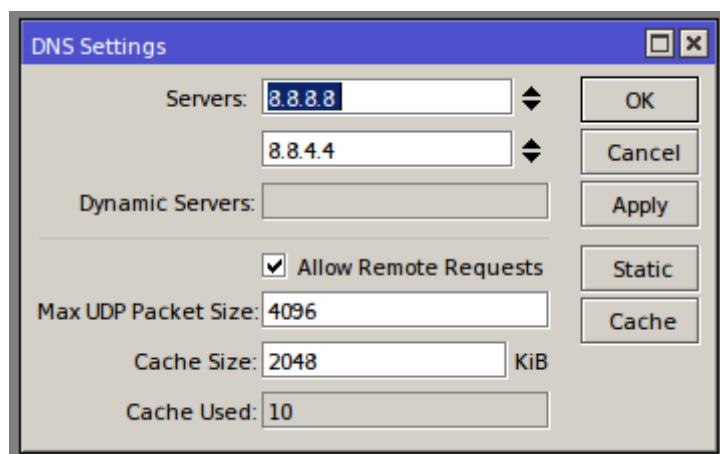
1. Set interface (disable yg tidak perlu).

Interface List									
Interface		Ethernet	EoIP Tunnel	IP Tunnel	GRE Tunnel	VLAN	VRRP	Bonding	LTE
<div> <div>+</div> <div>−</div> <div>✓</div> <div>✗</div> <div>📁</div> <div>🔍</div> </div>									
	Name	Type	L2 MTU	Tx	Rx	Tx Packet (p/s)	Rx Packet (p/s)		
R	ether1-gatwa	Ethernet	1520	816 bps	816 bps	1	1		
R	ether2-maste...	Ethernet	1520	0 bps	0 bps	0	0		
R	ether3-slave-l...	Ethernet	1520	66.6 kbps	3.0 kbps	8	4		
XS	ether4-slave-l...	Ethernet	1520	0 bps	0 bps	0	0		
XS	ether5-slave-l...	Ethernet	1520	0 bps	0 bps	0	0		

2. Set ip address.

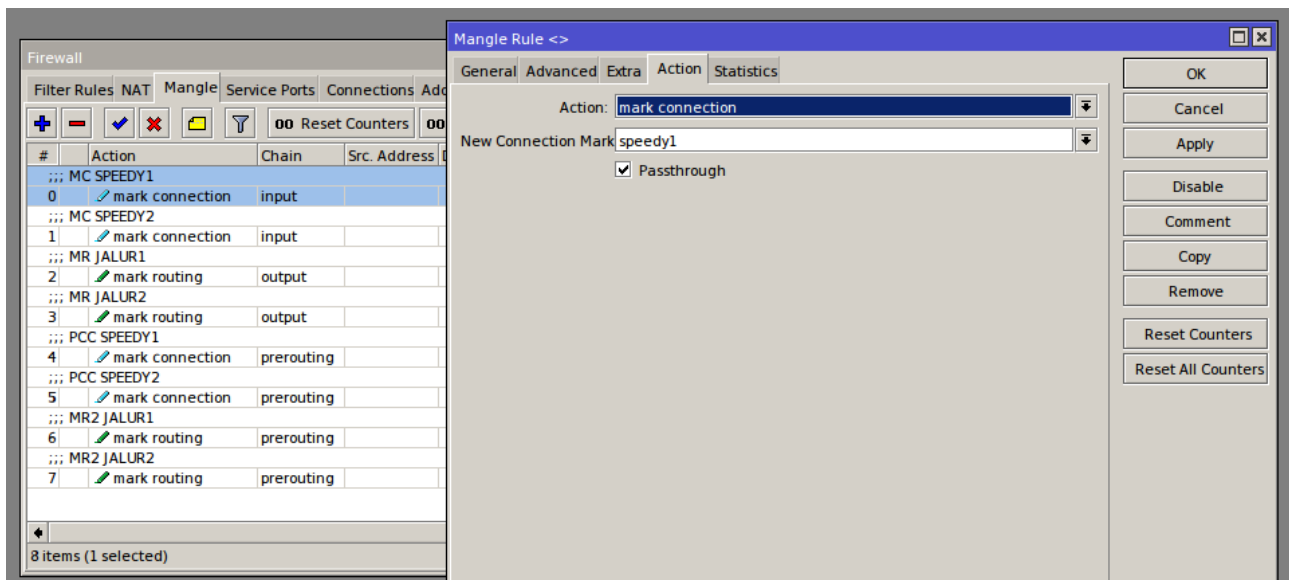
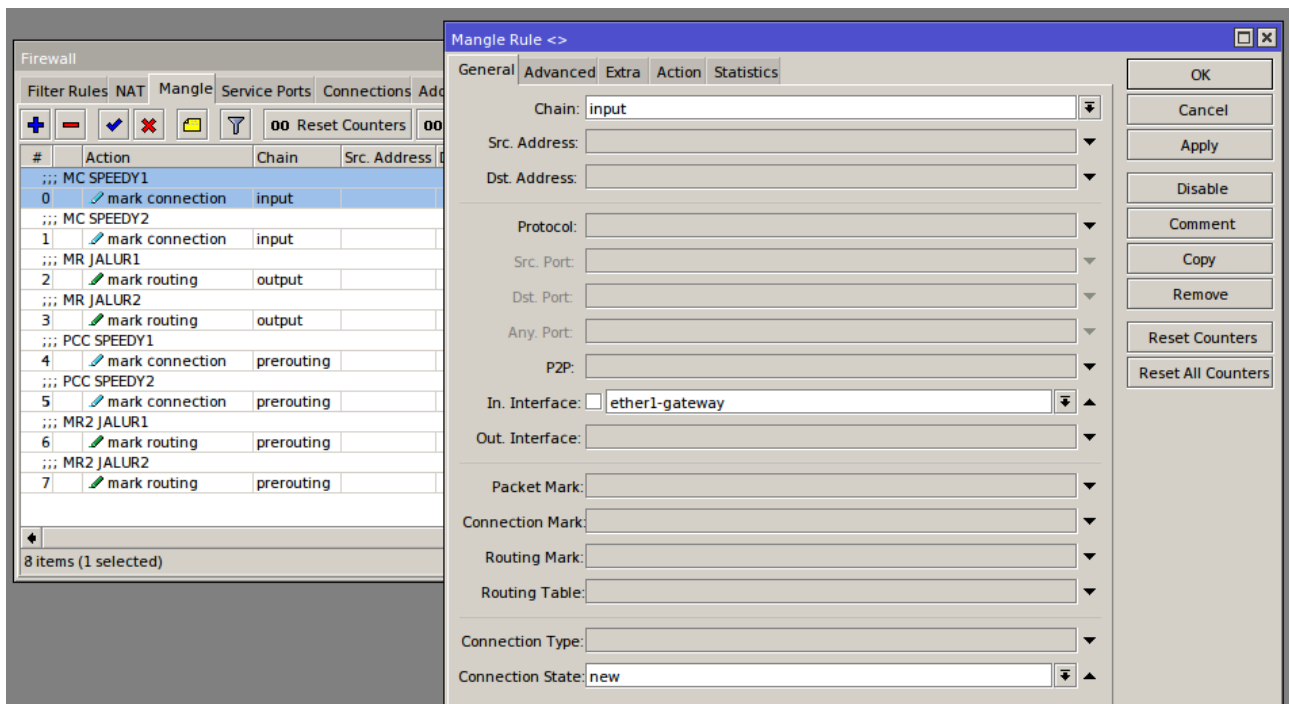


3. Set DNS server.

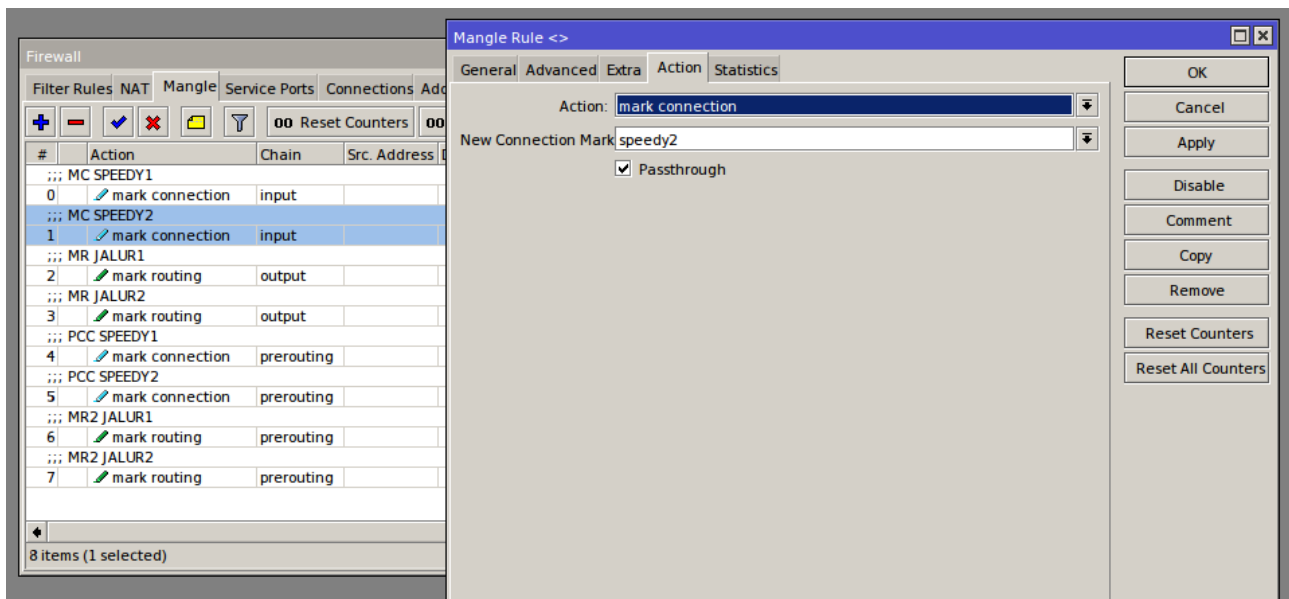
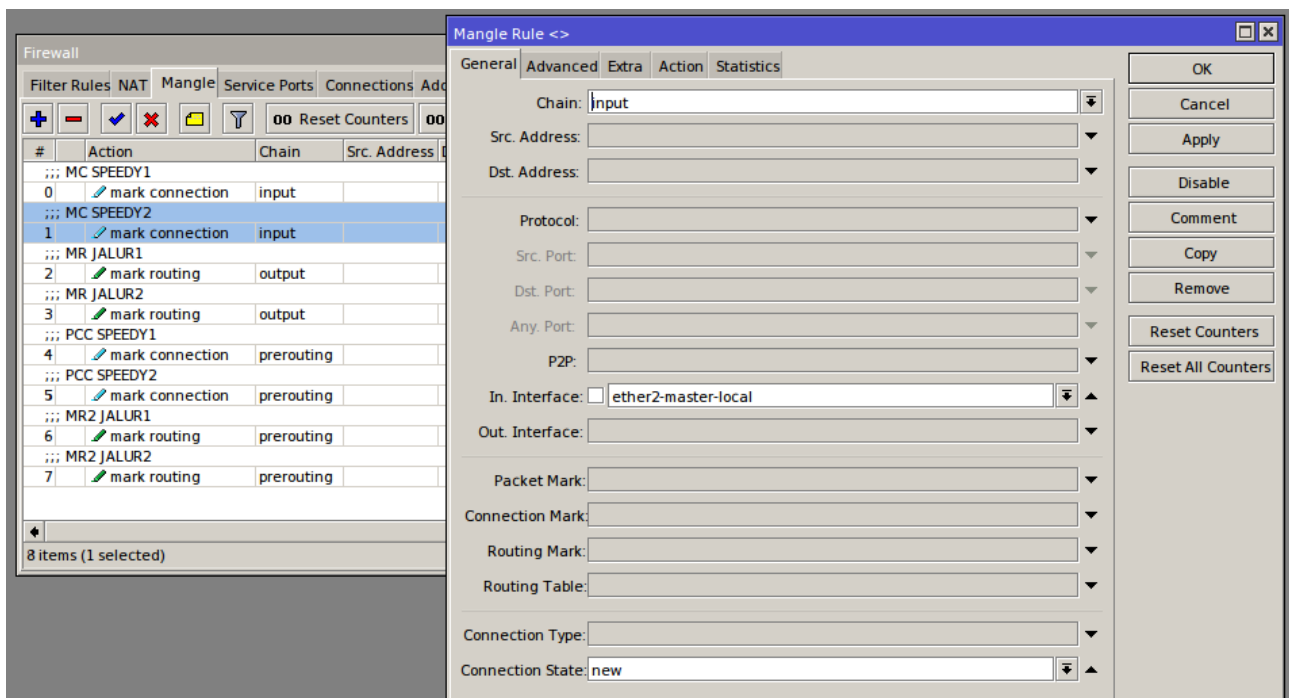


4. Set manglerule.

Rule1



Rule2



Rule3.

The screenshot shows the Mikrotik WinBox interface. On the left, the Firewall tab is active, displaying a list of rules. Rule 2, 'MR JALUR1', is selected. It is a 'mark routing' rule in the 'output' chain. On the right, the 'Mangle Rule <>' dialog is open, showing the configuration for this rule. The 'Chain' is set to 'output'. The 'Connection Mark' is set to 'speedy1'. The 'Action' tab is selected, showing the 'mark routing' action with 'New Routing Mark' set to 'jalur1'.

Firewall Rule List:

#	Action	Chain	Src. Address
0	mark connection	input	
1	mark connection	input	
2	mark routing	output	
3	mark routing	output	
4	mark connection	prerouting	
5	mark connection	prerouting	
6	mark routing	prerouting	
7	mark routing	prerouting	

Mangle Rule Configuration:

- Chain: output
- Src. Address: [empty]
- Dst. Address: [empty]
- Protocol: [empty]
- Src. Port: [empty]
- Dst. Port: [empty]
- Any. Port: [empty]
- P2P: [empty]
- In. Interface: [empty]
- Out. Interface: [empty]
- Packet Mark: [empty]
- Connection Mark: speedy1
- Routing Mark: [empty]
- Routing Table: [empty]
- Connection Type: [empty]
- Connection State: [empty]

The screenshot shows the Mikrotik WinBox interface. On the left, the Firewall tab is active, displaying a list of rules. Rule 2, 'MR JALUR1', is selected. It is a 'mark routing' rule in the 'output' chain. On the right, the 'Mangle Rule <>' dialog is open, showing the configuration for this rule. The 'Chain' is set to 'output'. The 'Connection Mark' is set to 'speedy1'. The 'Action' tab is selected, showing the 'mark routing' action with 'New Routing Mark' set to 'jalur1'.

Firewall Rule List:

#	Action	Chain	Src. Address
0	mark connection	input	
1	mark connection	input	
2	mark routing	output	
3	mark routing	output	
4	mark connection	prerouting	
5	mark connection	prerouting	
6	mark routing	prerouting	
7	mark routing	prerouting	

Mangle Rule Configuration:

- Chain: output
- Src. Address: [empty]
- Dst. Address: [empty]
- Protocol: [empty]
- Src. Port: [empty]
- Dst. Port: [empty]
- Any. Port: [empty]
- P2P: [empty]
- In. Interface: [empty]
- Out. Interface: [empty]
- Packet Mark: [empty]
- Connection Mark: speedy1
- Routing Mark: [empty]
- Routing Table: [empty]
- Connection Type: [empty]
- Connection State: [empty]

Rule4.

The screenshot shows the Mikrotik WinBox interface. On the left, the 'Firewall' tab is active, displaying a list of rules. Rule 3, 'MR JALUR2', is selected. On the right, the 'Mangle Rule <>' dialog is open, showing the 'General' tab. The 'Chain' is set to 'output'. The 'Connection Mark' is set to 'speedy2'. The 'Packet Mark' is set to 'mark routing'. The 'Routing Mark' is set to 'jalur2'. The 'Routing Table' is set to 'default'. The 'Connection Type' is set to 'any'. The 'Connection State' is set to 'new,established,related,invalid'. The 'Action' is set to 'mark routing'. The 'New Routing Mark' is set to 'jalur2'. The 'Passthrough' checkbox is unchecked.

#	Action	Chain	Src. Address
0	mark connection	input	
1	mark connection	input	
2	mark routing	output	
3	mark routing	output	
4	mark connection	prerouting	
5	mark connection	prerouting	
6	mark routing	prerouting	
7	mark routing	prerouting	

8 items (1 selected)

Mangle Rule <>

General | Advanced | Extra | Action | Statistics

Chain: output

Src. Address:

Dst. Address:

Protocol:

Src. Port:

Dst. Port:

Any. Port:

P2P:

In. Interface:

Out. Interface:

Packet Mark:

Connection Mark: speedy2

Routing Mark:

Routing Table:

Connection Type:

Connection State:

Action: mark routing

New Routing Mark: jalur2

☐ Passthrough

OK

Cancel

Apply

Disable

Comment

Copy

Remove

Reset Counters

Reset All Counters

The screenshot shows the Mikrotik WinBox interface. On the left, the 'Firewall' tab is active, displaying a list of rules. Rule 3, 'MR JALUR2', is selected. On the right, the 'Mangle Rule <>' dialog is open, showing the 'General' tab. The 'Chain' is set to 'output'. The 'Connection Mark' is set to 'speedy2'. The 'Packet Mark' is set to 'mark routing'. The 'Routing Mark' is set to 'jalur2'. The 'Routing Table' is set to 'default'. The 'Connection Type' is set to 'any'. The 'Connection State' is set to 'new,established,related,invalid'. The 'Action' is set to 'mark routing'. The 'New Routing Mark' is set to 'jalur2'. The 'Passthrough' checkbox is unchecked.

#	Action	Chain	Src. Address
0	mark connection	input	
1	mark connection	input	
2	mark routing	output	
3	mark routing	output	
4	mark connection	prerouting	
5	mark connection	prerouting	
6	mark routing	prerouting	
7	mark routing	prerouting	

8 items (1 selected)

Mangle Rule <>

General | Advanced | Extra | Action | Statistics

Action: mark routing

New Routing Mark: jalur2

☐ Passthrough

OK

Cancel

Apply

Disable

Comment

Copy

Remove

Reset Counters

Reset All Counters

Rule5.

Firewall

Filter Rules NAT Mangle Service Ports Connections Add

8 items (1 selected)

#	Action	Chain	Src. Address
0	mark connection	input	
1	mark connection	input	
2	mark routing	output	
3	mark routing	output	
4	mark connection	prerouting	
5	mark connection	prerouting	
6	mark routing	prerouting	
7	mark routing	prerouting	

Mangle Rule <>

General Advanced Extra Action Statistics

Chain: prerouting

Src. Address:

Dst. Address:

Protocol:

Src. Port:

Dst. Port:

Any. Port:

P2P:

In. Interface: ether3-slave-local

Out. Interface:

Packet Mark:

Connection Mark:

Routing Mark:

Routing Table:

Connection Type:

Connection State:

OK Cancel Apply Disable Comment Copy Remove Reset Counters Reset All Counters

Firewall

Filter Rules NAT Mangle Service Ports Connections Add

8 items (1 selected)

#	Action	Chain	Src. Address
0	mark connection	input	
1	mark connection	input	
2	mark routing	output	
3	mark routing	output	
4	mark connection	prerouting	
5	mark connection	prerouting	
6	mark routing	prerouting	
7	mark routing	prerouting	

Mangle Rule <>

General Advanced Extra Action Statistics

Src. Address List:

Dst. Address List:

Layer7 Protocol:

Content:

Connection Bytes:

Connection Rate:

Per Connection Classifier: both addresses and port : 2 / 0

Src. MAC Address:

Out. Bridge Port:

In. Bridge Port:

Ingress Priority:

Priority:

DSCP (TOS):

TCP MSS:

Packet Size:

Random:

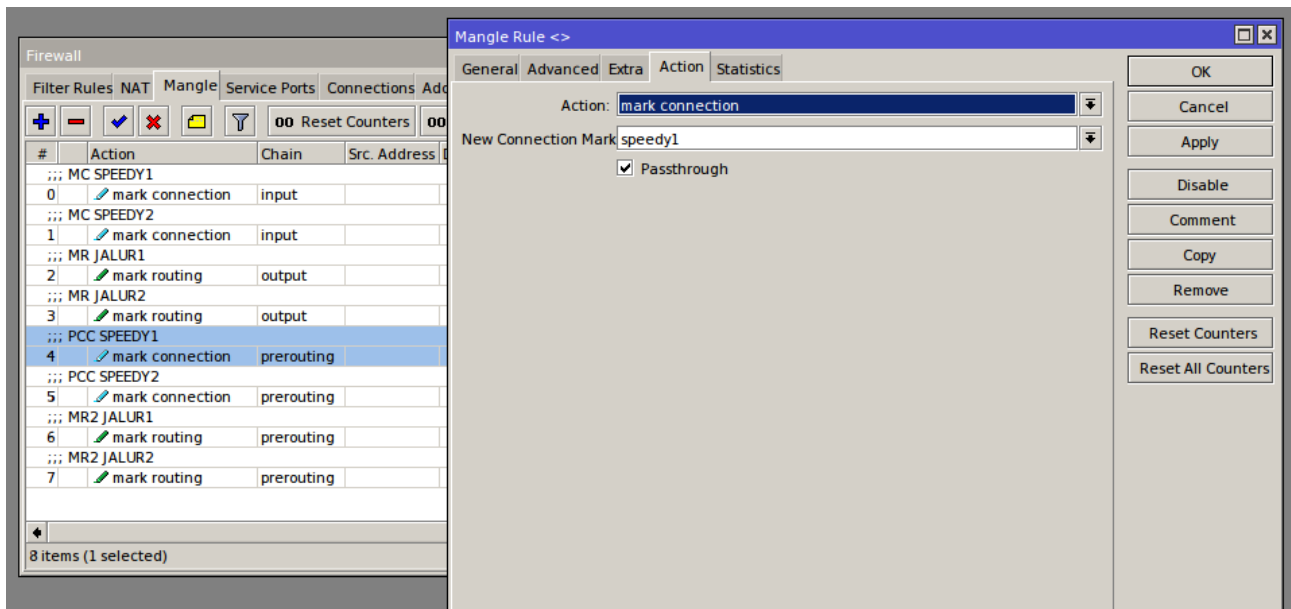
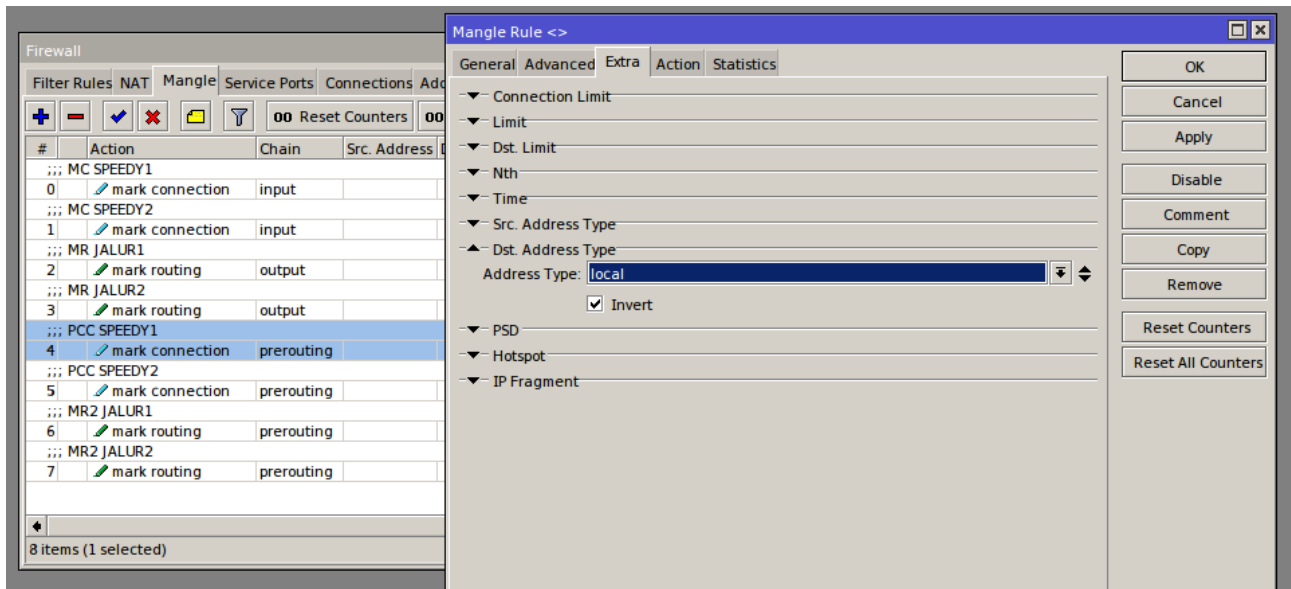
TCP Flags

ICMP Options

IPv4 Options:

TTL:

OK Cancel Apply Disable Comment Copy Remove Reset Counters Reset All Counters



Rule6.

Firewall

Filter Rules NAT Mangle Service Ports Connections Add

00 Reset Counters 00

#	Action	Chain	Src. Address
;;; MC SPEEDY1			
0	mark connection	input	
;;; MC SPEEDY2			
1	mark connection	input	
;;; MR JALUR1			
2	mark routing	output	
;;; MR JALUR2			
3	mark routing	output	
;;; PCC SPEEDY1			
4	mark connection	prerouting	
;;; PCC SPEEDY2			
5	mark connection	prerouting	
;;; MR2 JALUR1			
6	mark routing	prerouting	
;;; MR2 JALUR2			
7	mark routing	prerouting	

8 items (1 selected)

Mangle Rule <>

General Advanced Extra Action Statistics

Chain: prerouting

Src. Address:

Dst. Address:

Protocol:

Src. Port:

Dst. Port:

Any. Port:

P2P:

In. Interface: ether3-slave-local

Out. Interface:

Packet Mark:

Connection Mark:

Routing Mark:

Routing Table:

Connection Type:

Connection State:

OK Cancel Apply Disable Comment Copy Remove Reset Counters Reset All Counters

Firewall

Filter Rules NAT Mangle Service Ports Connections Add

00 Reset Counters 00

#	Action	Chain	Src. Address
;;; MC SPEEDY1			
0	mark connection	input	
;;; MC SPEEDY2			
1	mark connection	input	
;;; MR JALUR1			
2	mark routing	output	
;;; MR JALUR2			
3	mark routing	output	
;;; PCC SPEEDY1			
4	mark connection	prerouting	
;;; PCC SPEEDY2			
5	mark connection	prerouting	
;;; MR2 JALUR1			
6	mark routing	prerouting	
;;; MR2 JALUR2			
7	mark routing	prerouting	

8 items (1 selected)

Mangle Rule <>

General Advanced Extra Action Statistics

Src. Address List:

Dst. Address List:

Layer7 Protocol:

Content:

Connection Bytes:

Connection Rate:

Per Connection Classified: both addresses and port 2 / 1

Src. MAC Address:

Out. Bridge Port:

In. Bridge Port:

Ingress Priority:

Priority:

DSCP (TOS):

TCP MSS:

Packet Size:

Random:

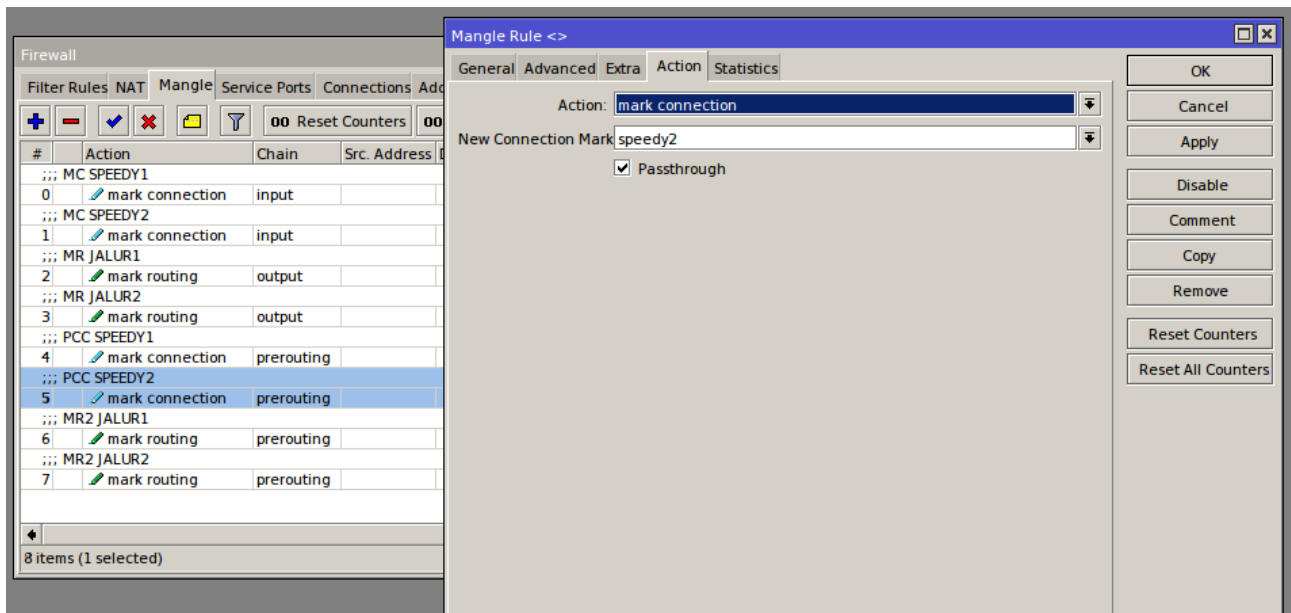
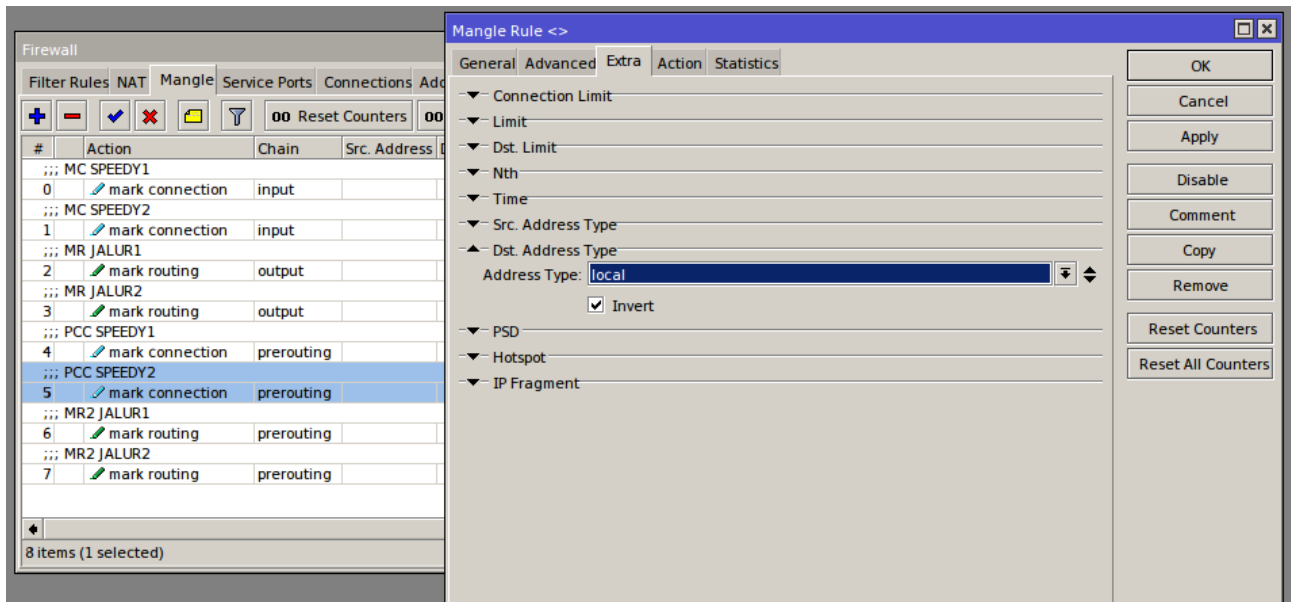
TCP Flags

ICMP Options

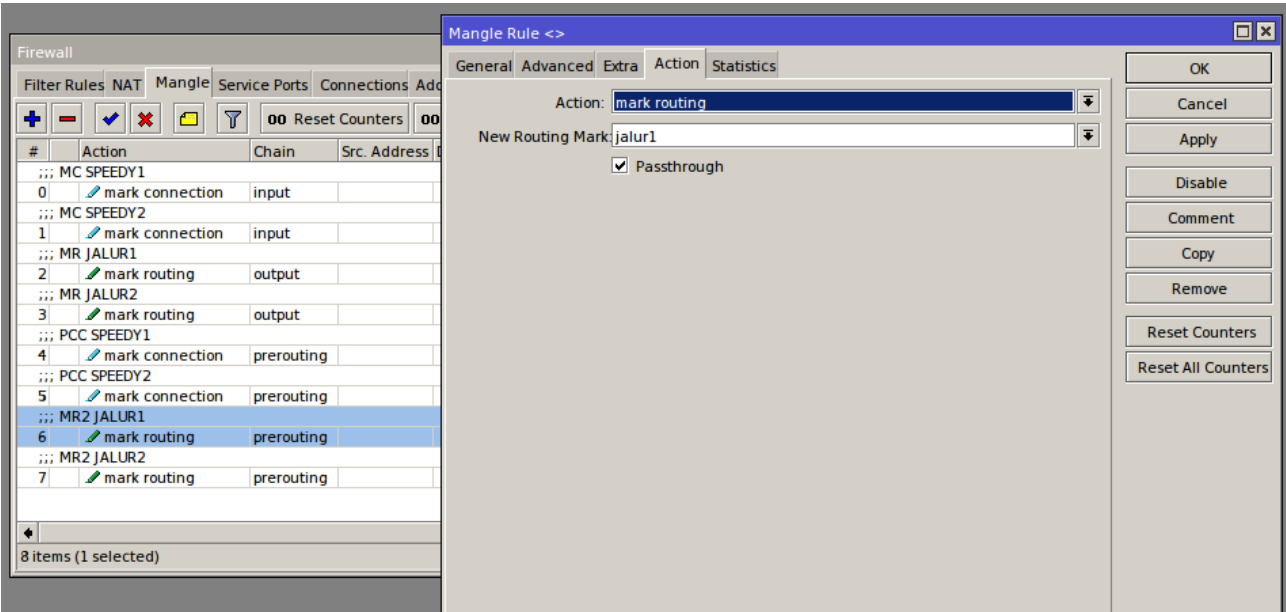
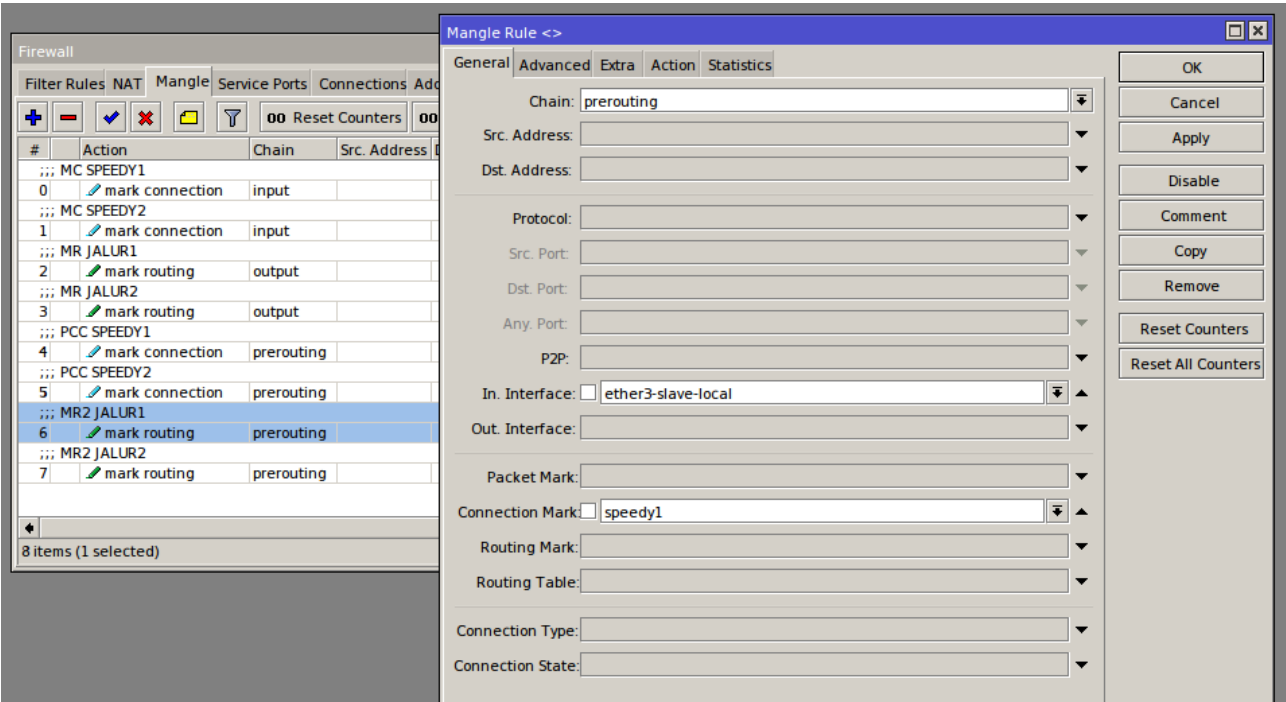
IPv4 Options:

TTL:

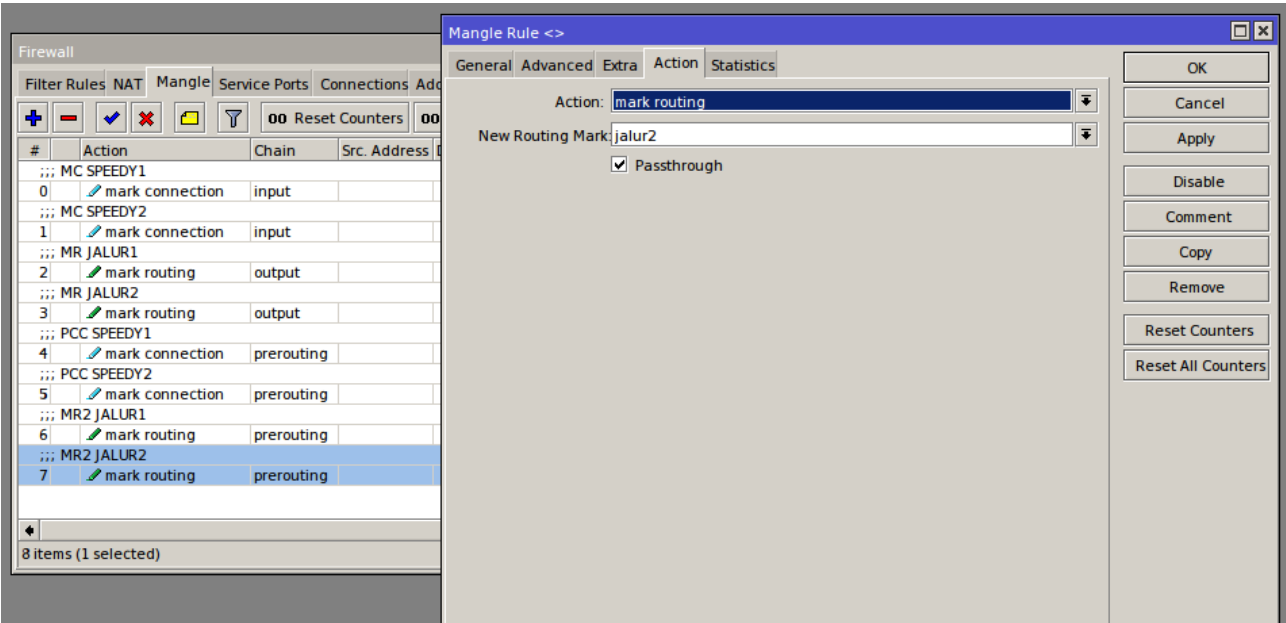
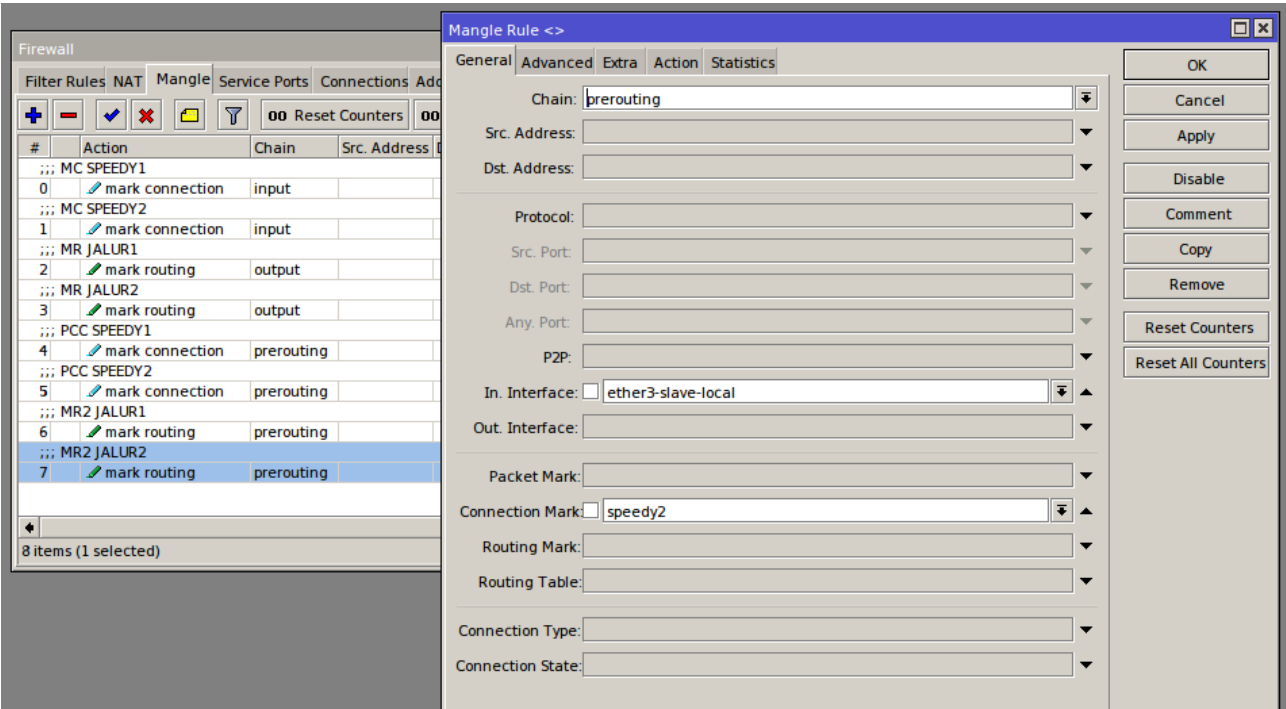
OK Cancel Apply Disable Comment Copy Remove Reset Counters Reset All Counters



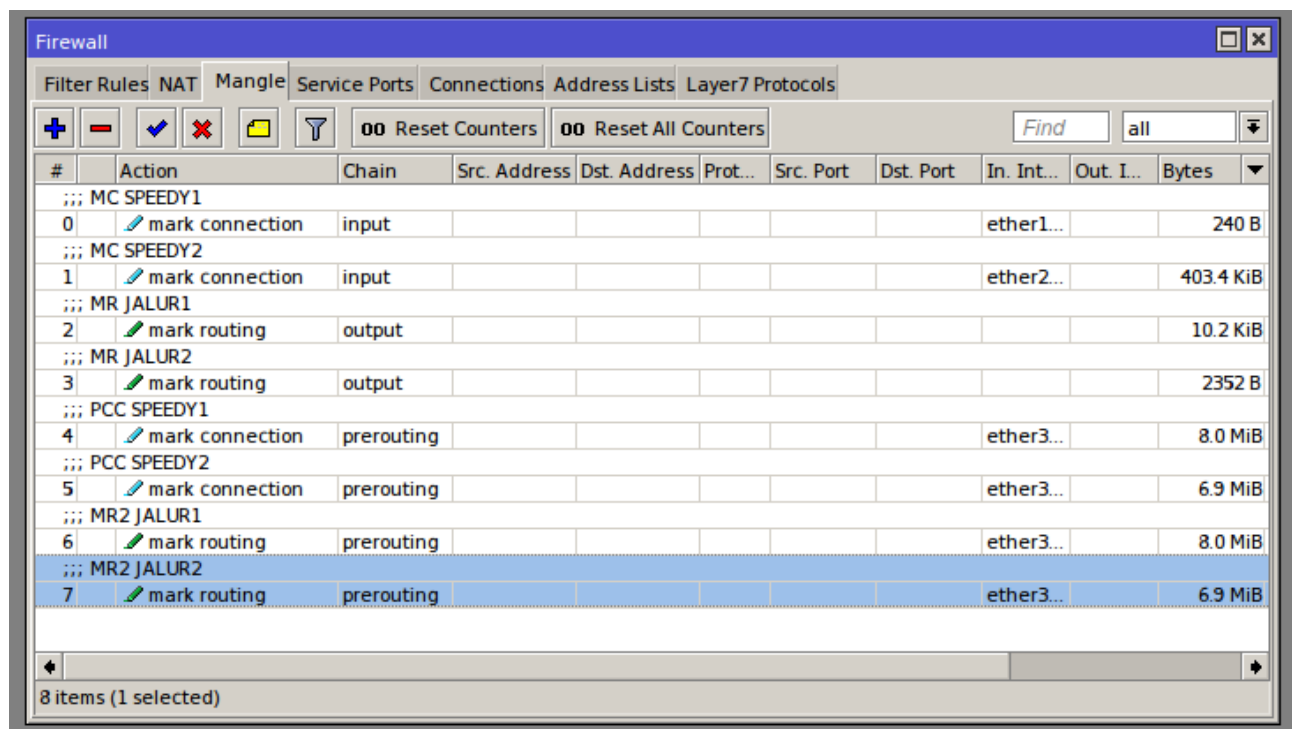
Rule7.



Rule8.



Semua rule.

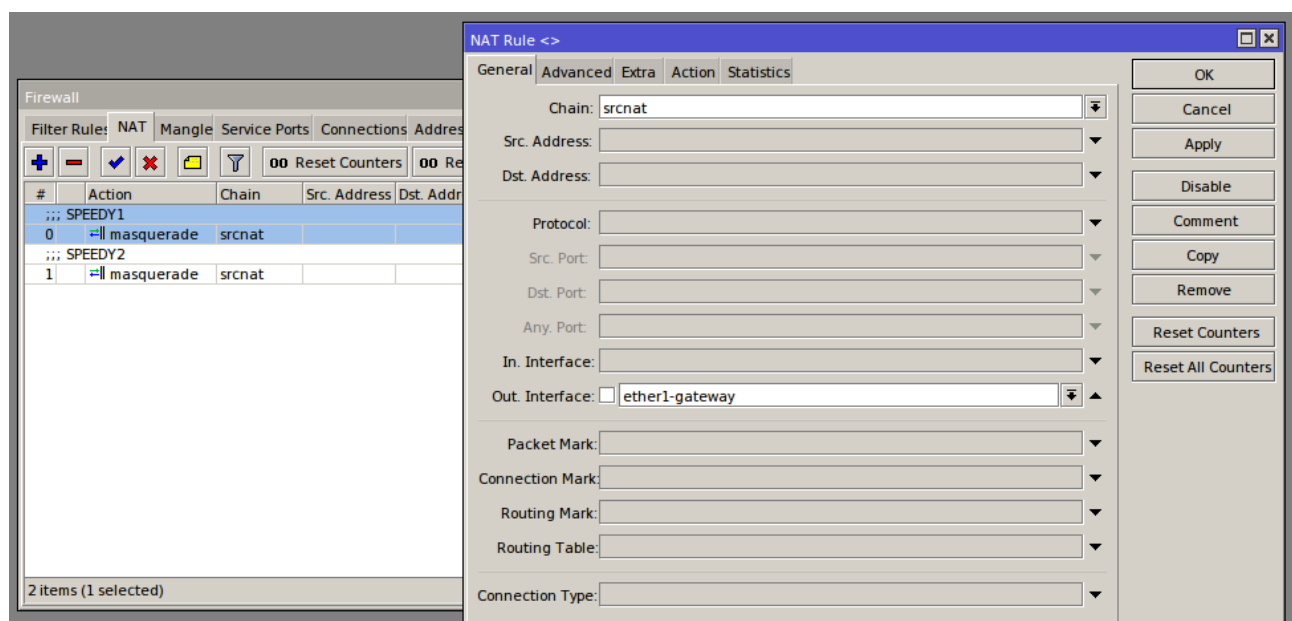


#	Action	Chain	Src. Address	Dst. Address	Prot...	Src. Port	Dst. Port	In. Int...	Out. I...	Bytes
;;; MC SPEEDY1										
0	mark connection	input						ether1...		240 B
;;; MC SPEEDY2										
1	mark connection	input						ether2...		403.4 KiB
;;; MR JALUR1										
2	mark routing	output								10.2 KiB
;;; MR JALUR2										
3	mark routing	output								2352 B
;;; PCC SPEEDY1										
4	mark connection	prerouting						ether3...		8.0 MiB
;;; PCC SPEEDY2										
5	mark connection	prerouting						ether3...		6.9 MiB
;;; MR2 JALUR1										
6	mark routing	prerouting						ether3...		8.0 MiB
;;; MR2 JALUR2										
7	mark routing	prerouting						ether3...		6.9 MiB

8 items (1 selected)

5. Set NAT.

WAN1.



NAT Rule <>

General | Advanced | Extra | Action | Statistics

Chain: srcnat

Src. Address:

Dst. Address:

Protocol:

Src. Port:

Dst. Port:

Any. Port:

In. Interface:

Out. Interface: ether1-gateway

Packet Mark:

Connection Mark:

Routing Mark:

Routing Table:

Connection Type:

OK

Cancel

Apply

Disable

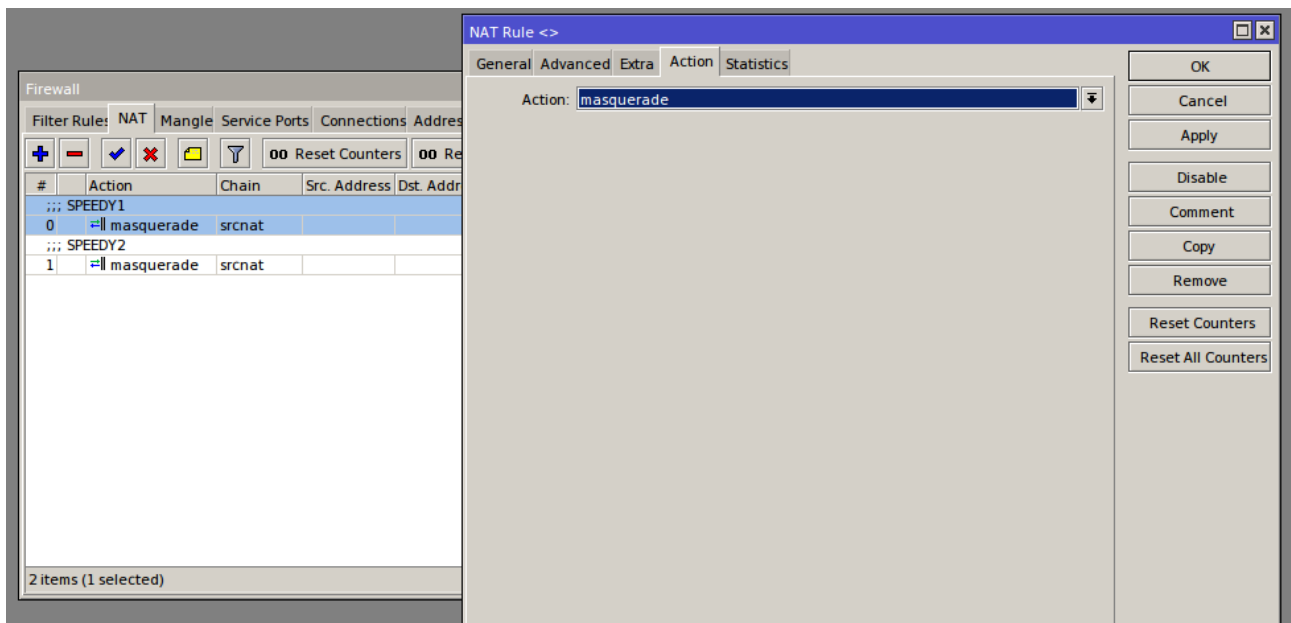
Comment

Copy

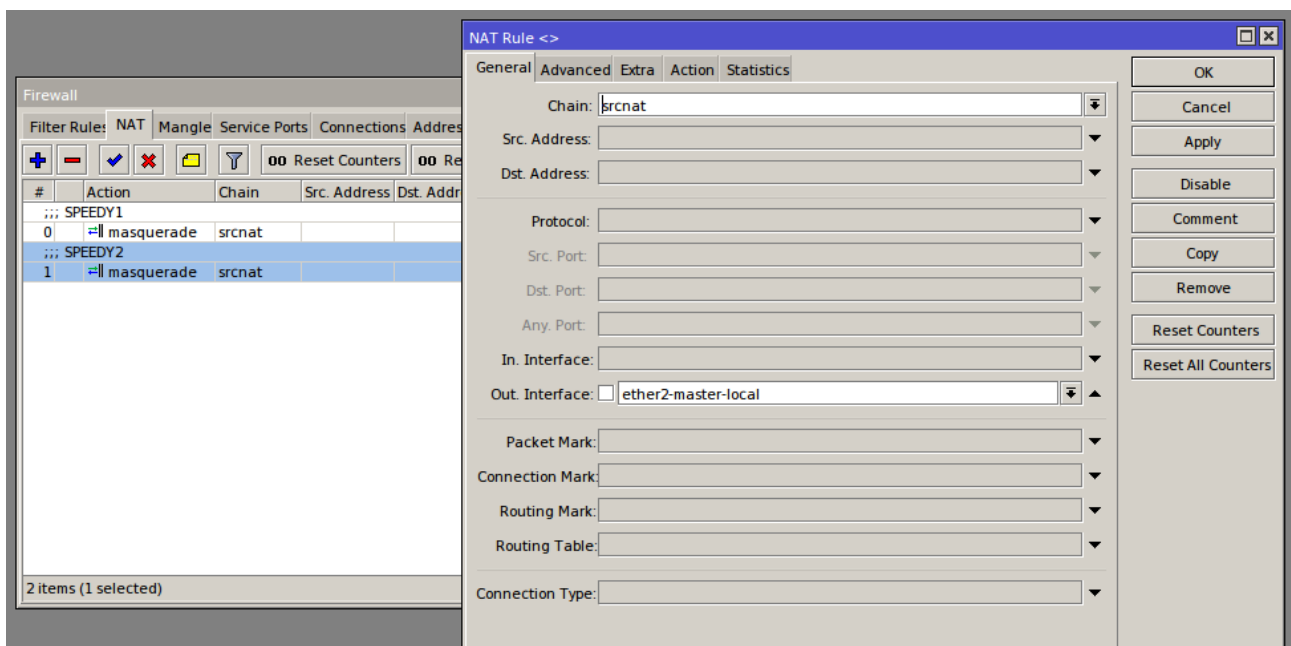
Remove

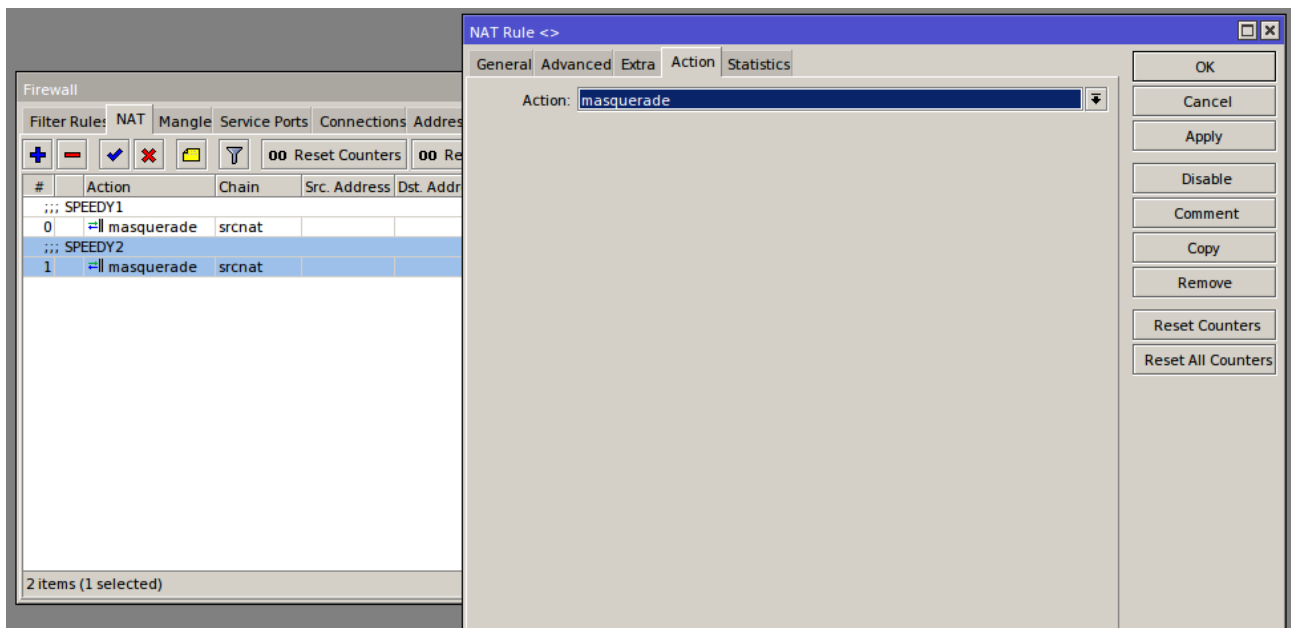
Reset Counters

Reset All Counters

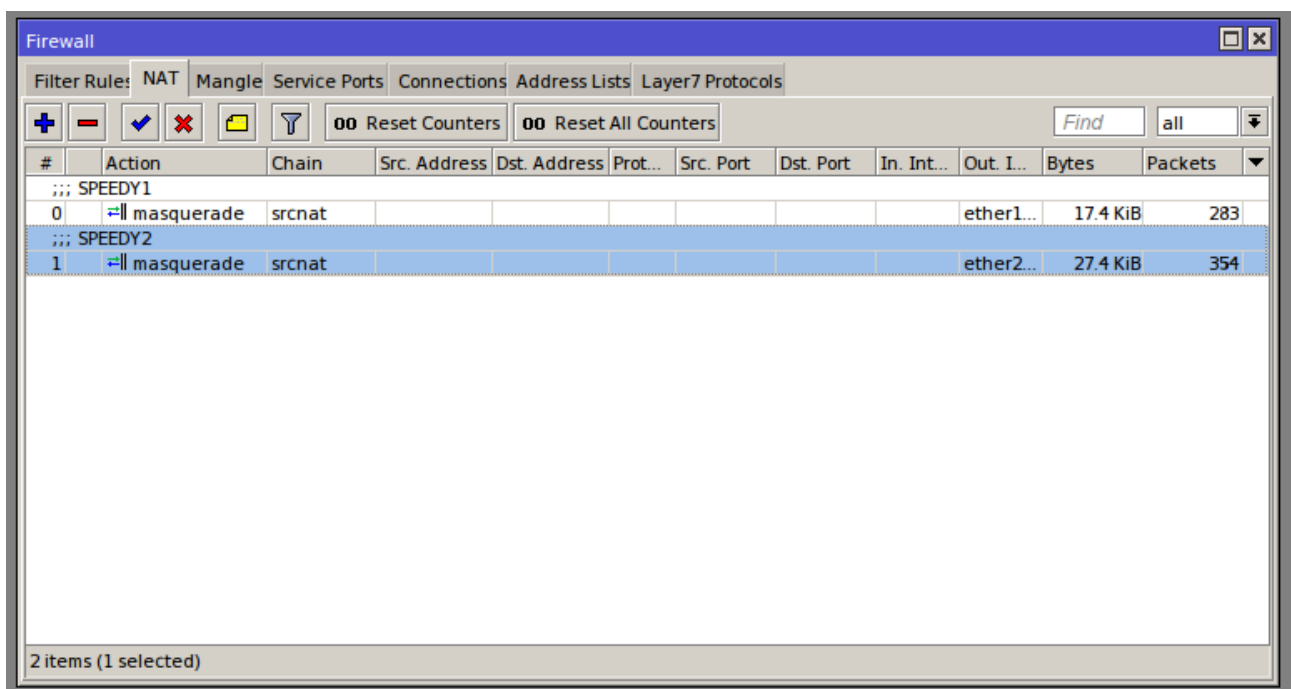


WAN2.



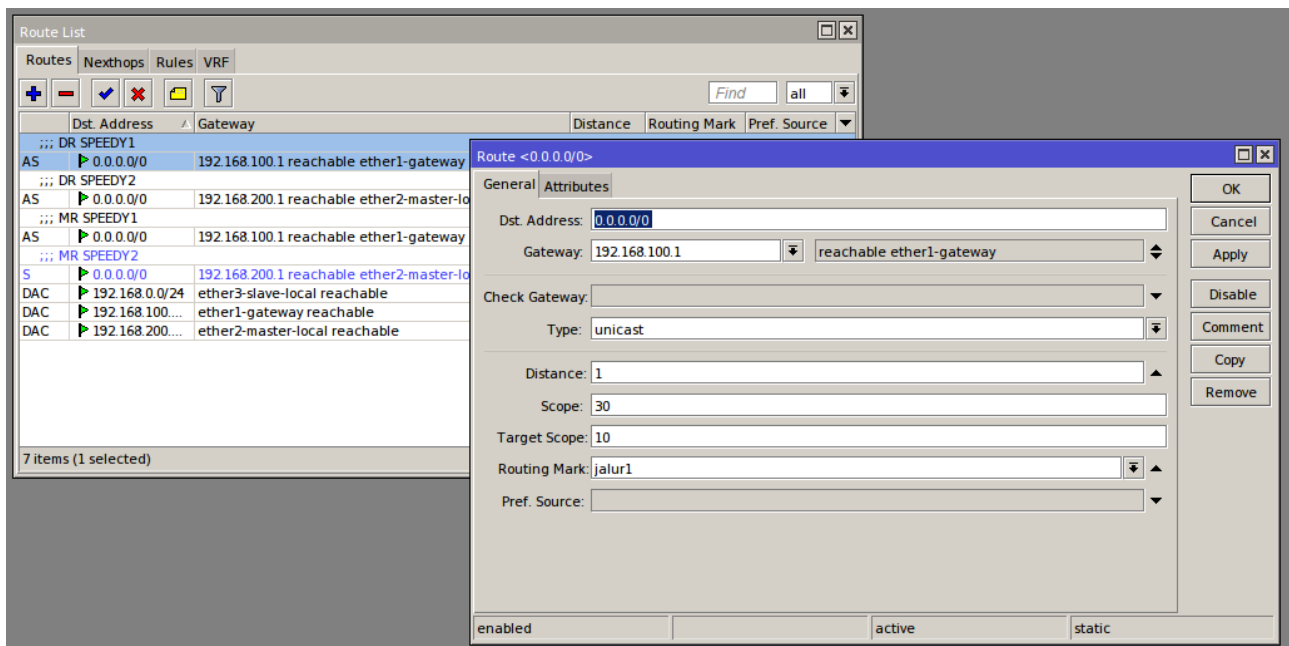


Semua NAT.

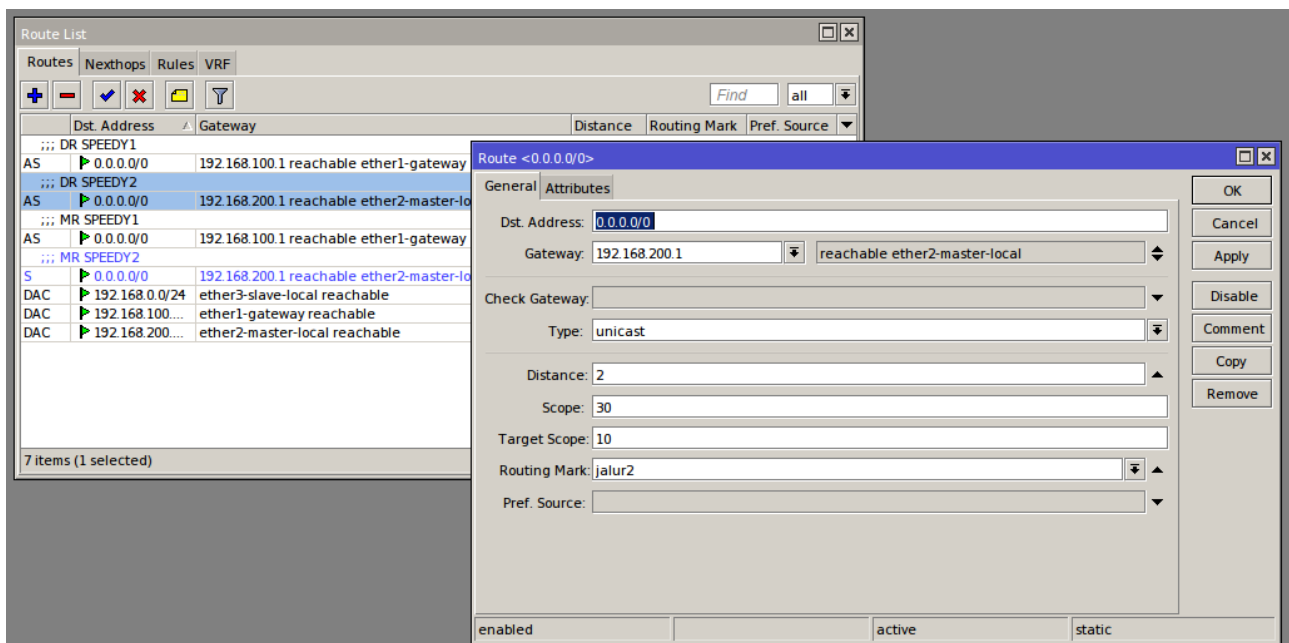


6. Set route.

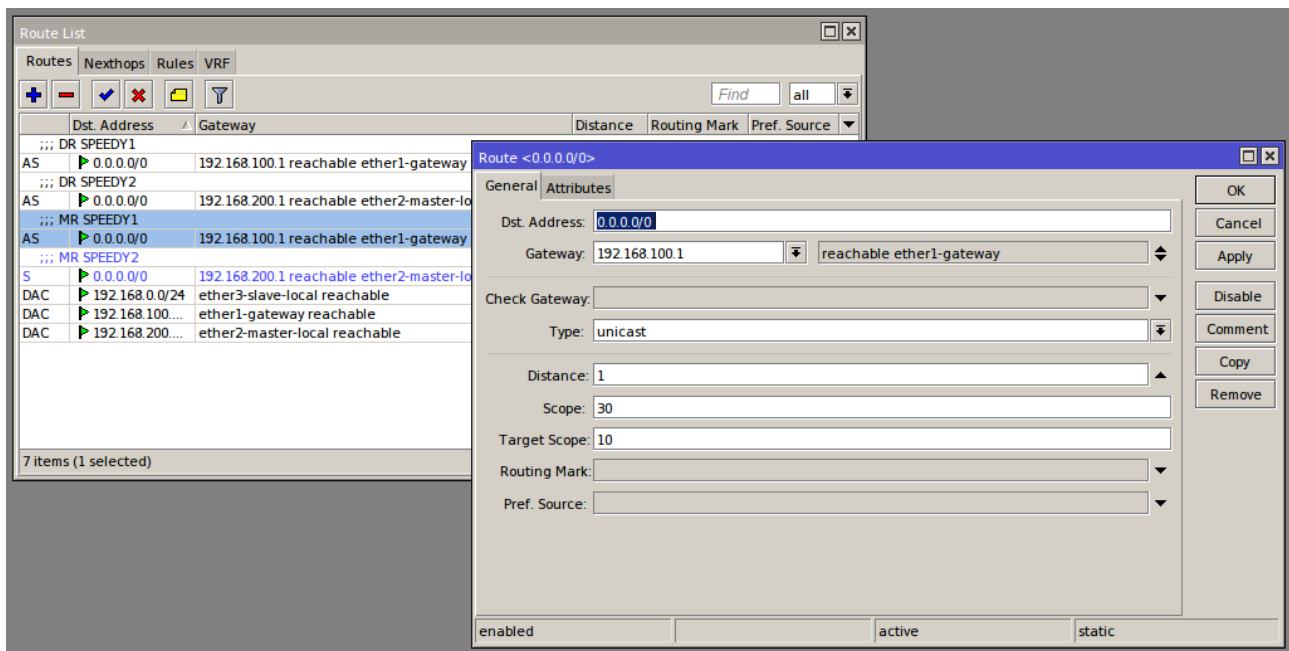
Route1.



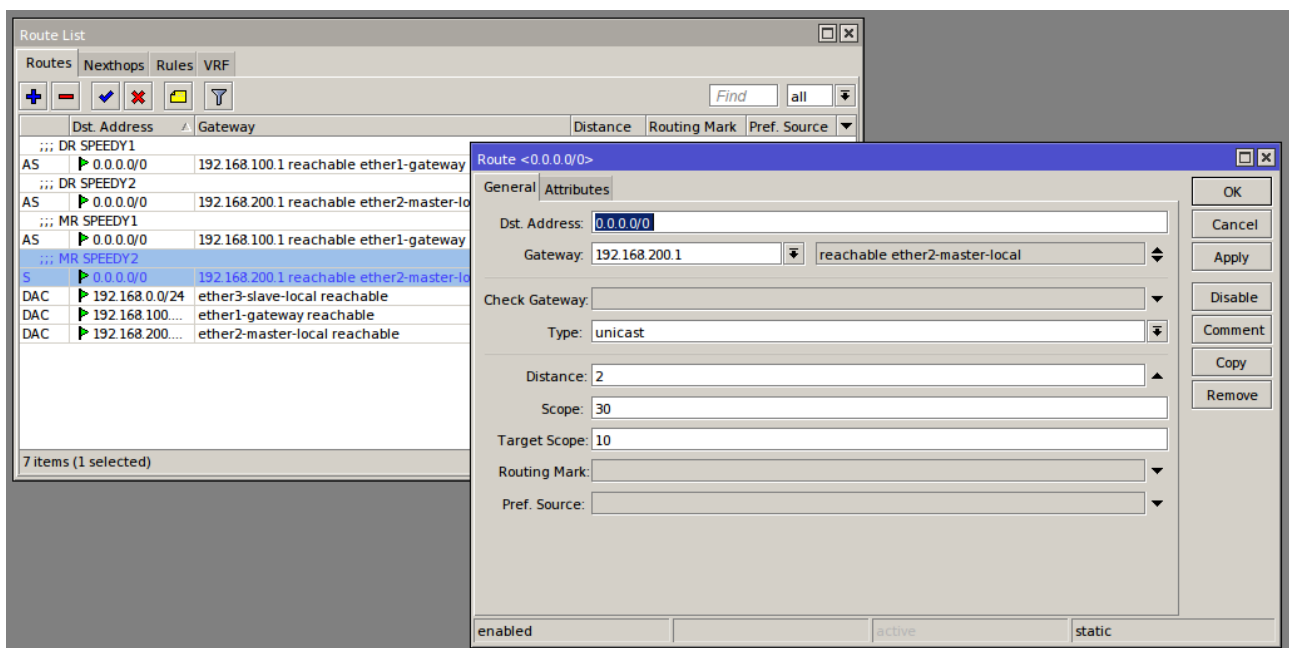
Route2.



Route3.



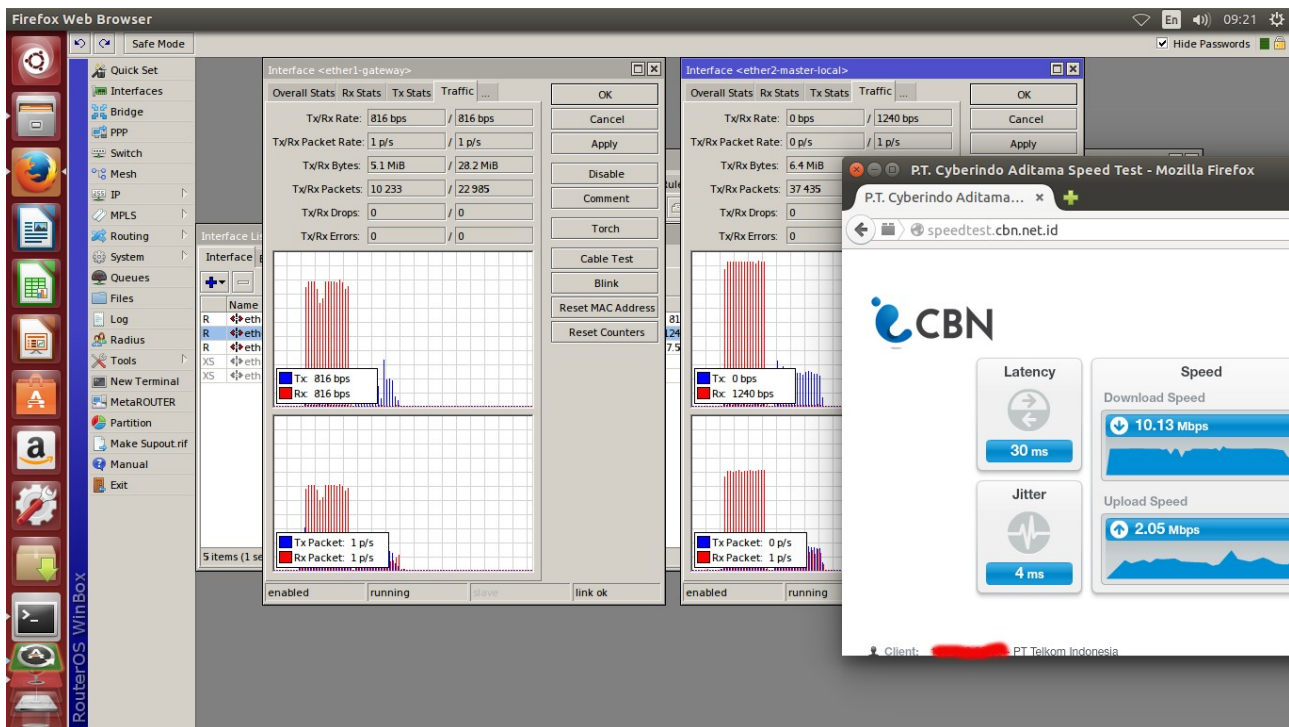
Route4.



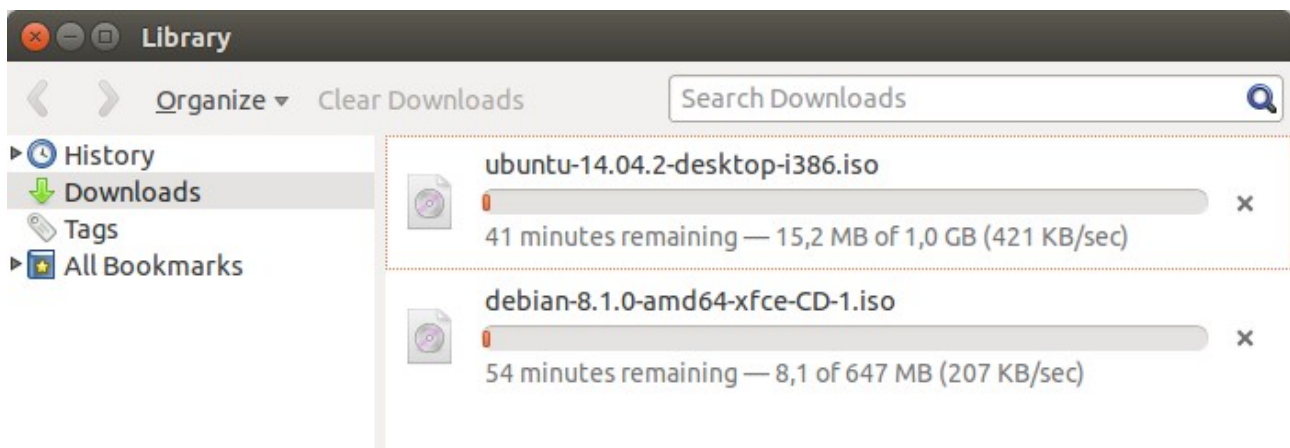
Semua route.

Route List						
Routes						
Nextthops Rules VRF						
Find all						
	Dst. Address	Gateway	Distance	Routing Mark	Pref. Source	
;;; DR SPEEDY1						
AS	0.0.0.0/0	192.168.100.1 reachable ether1-gateway	1	jalur1		
;;; DR SPEEDY2						
AS	0.0.0.0/0	192.168.200.1 reachable ether2-master-local	2	jalur2		
;;; MR SPEEDY1						
AS	0.0.0.0/0	192.168.100.1 reachable ether1-gateway	1			
;;; MR SPEEDY2						
S	0.0.0.0/0	192.168.200.1 reachable ether2-master-local	2			
DAC	192.168.0.0/24	ether3-slave-local reachable	0		192.168.0.1	
DAC	192.168.100....	ether1-gateway reachable	0		192.168.100.5	
DAC	192.168.200....	ether2-master-local reachable	0		192.168.200.5	
7 items (1 selected)						

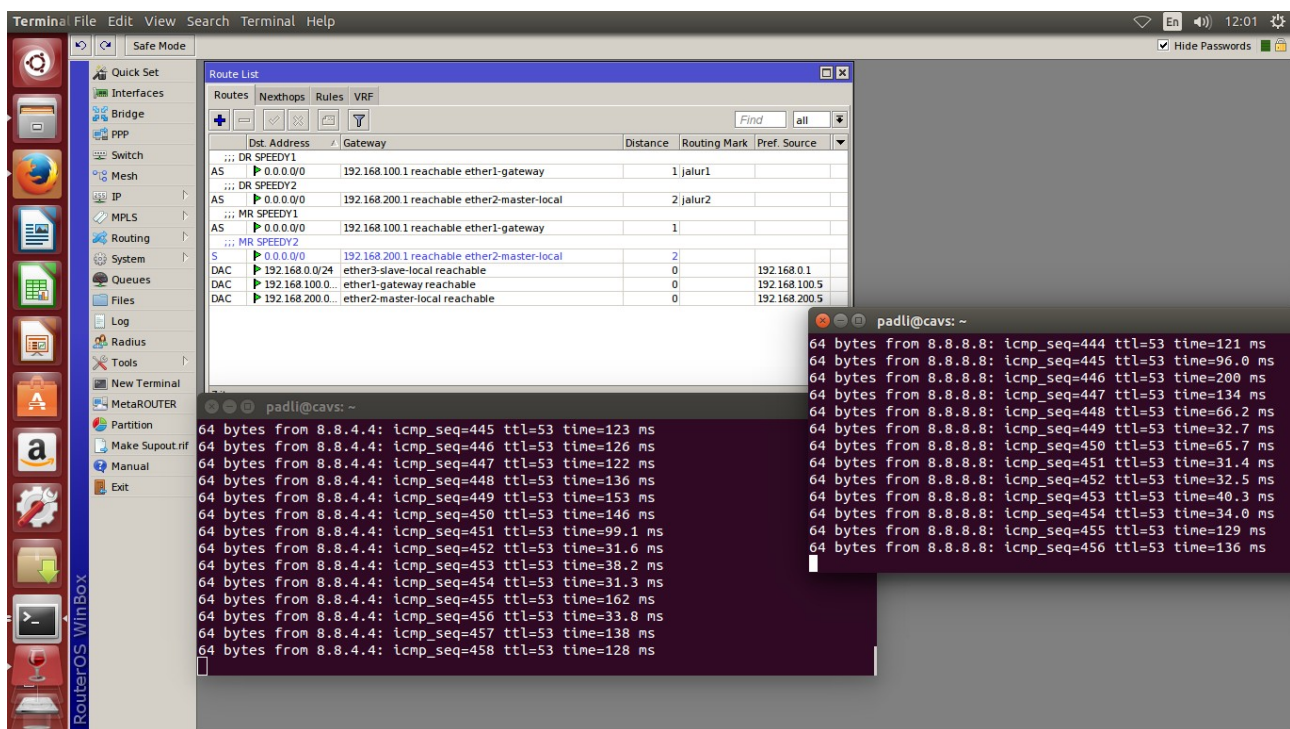
7. Tes koneksi (WAN1 + WAN2 = Rx 10 Mbps & Tx 2 Mbps).



8. Tes download (download1 ke WAN1, download2 ke WAN2, Dst).

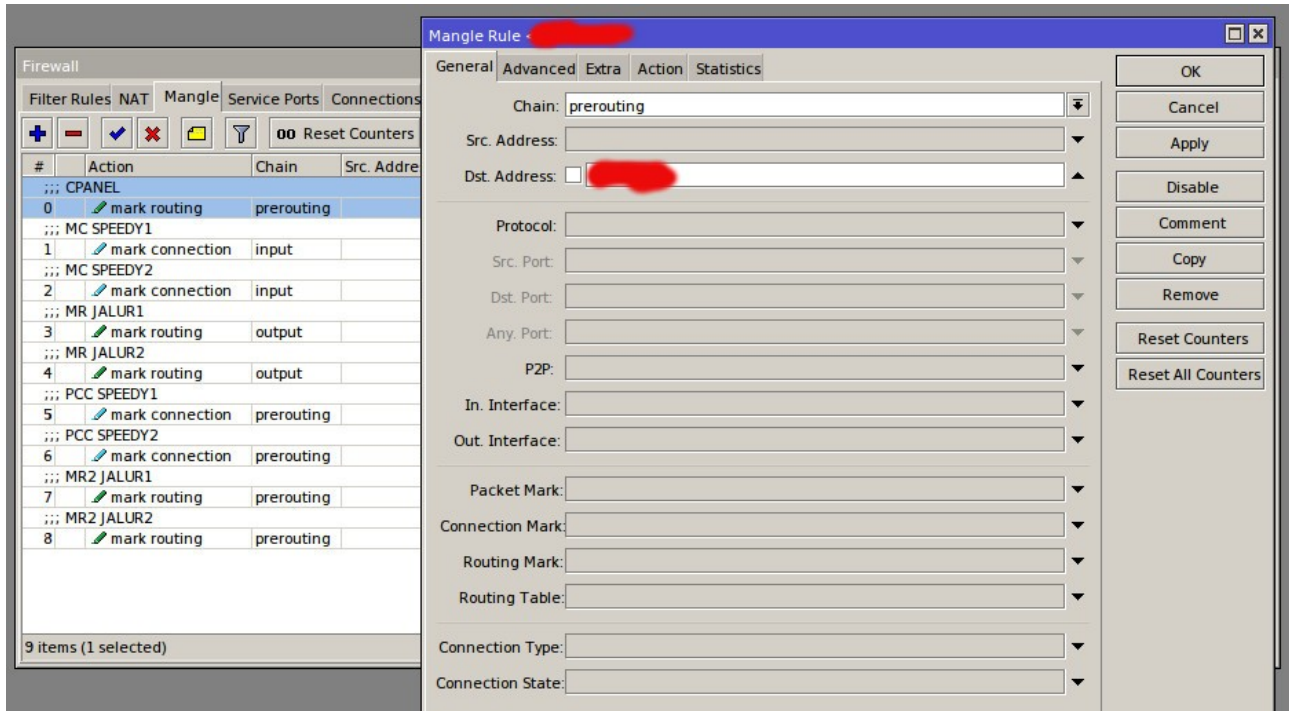


9. Tes failover (jika koneksi WAN1 down akan dialihkan ke WAN2 dan sebaliknya).

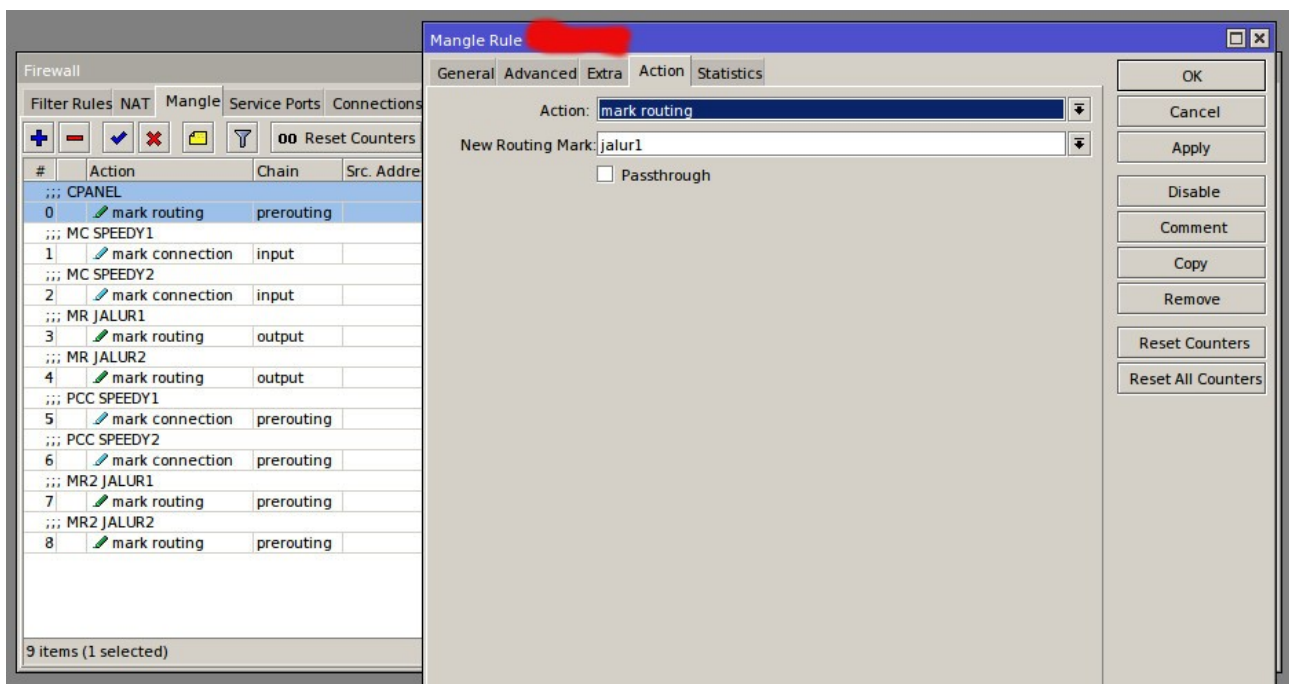


10. Jika tidak dapat akses ke akun WHM/CPANEL dikarenakan pembagian segmen PCC.

Tambahkan mangle rule untuk CPANEL/WHM (isi dst. Address dengan ip public CPANEL/WHM anda).



Set new routing mark ke salah satu jalur WAN.



Tempatkan rule CPANEL paling atas.

Firewall											
Filter Rules NAT Mangle Service Ports Connections Address Lists Layer7 Protocols											
<div> <div> <div>+</div> <div>−</div> <div>✓</div> <div>✗</div> <div>📄</div> <div>🔍</div> </div> <div> <div>00</div> <div>Reset Counters</div> <div>00</div> <div>Reset All Counters</div> </div> <div> <div>Find</div> <div>all</div> <div>▼</div> </div> </div>											
#	Action	Chain	Src. Address	Dst. Address	Prot...	Src. Port	Dst. Port	In. Int...	Out. I...	Bytes	Packets
::: CPANEL											
0	🔗 mark routing	prerouting								32.6 MiB	25 240
::: MC SPEEDY1											
1	🔗 mark connection	input						ether1...		47.1 KiB	330
::: MC SPEEDY2											
2	🔗 mark connection	input						ether2...		4.8 MiB	25 984
::: MR JALUR1											
3	🔗 mark routing	output								42.1 KiB	330
::: MR JALUR2											
4	🔗 mark routing	output								8.2 KiB	65
::: PCC SPEEDY1											
5	🔗 mark connection	prerouting						ether3...		513.6 MiB	2 316 252
::: PCC SPEEDY2											
6	🔗 mark connection	prerouting						ether3...		314.0 MiB	1 887 898
::: MR2 JALUR1											
7	🔗 mark routing	prerouting						ether3...		513.3 MiB	2 310 747
::: MR2 JALUR2											
8	🔗 mark routing	prerouting						ether3...		313.7 MiB	1 882 367
9 items (1 selected)											

Note : More effective for dedicated connection WAN & multi client.

Dok 23/06/2015 padliyulian@ymail.com