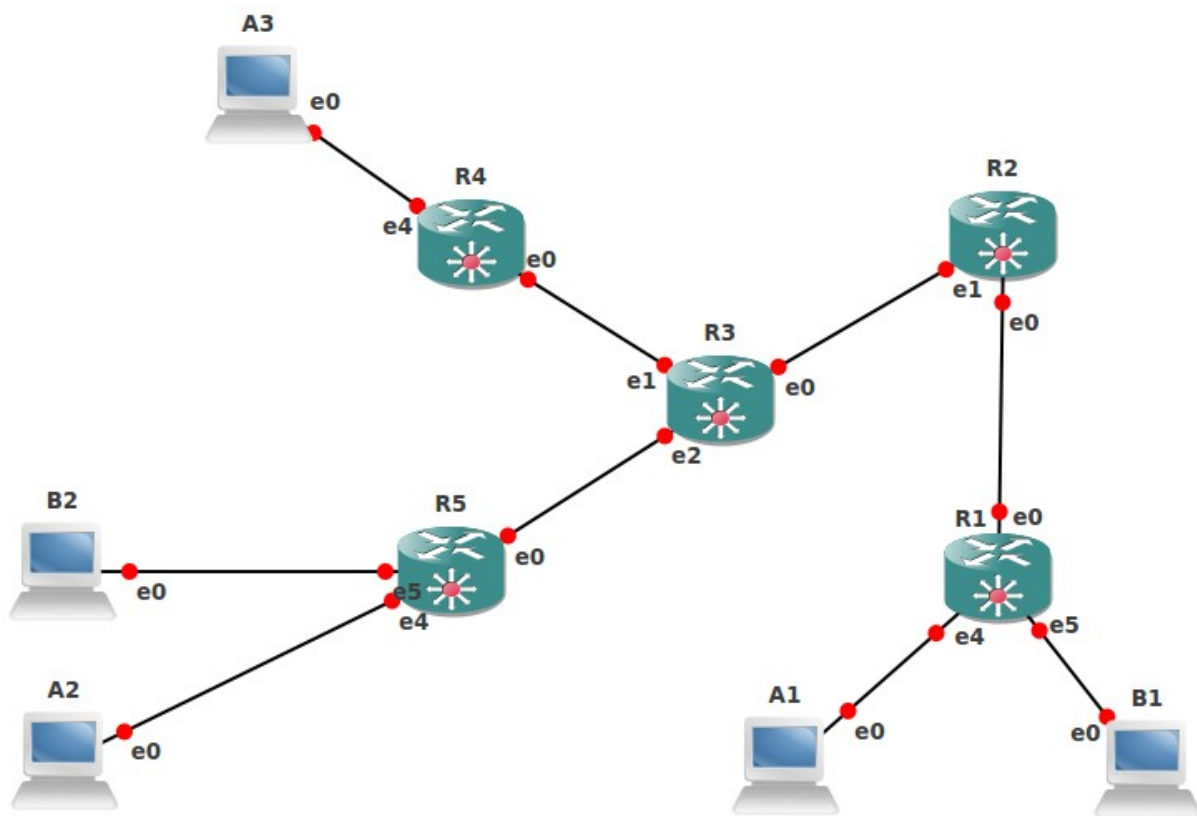# Mikrotik BGP VLPS

Vengono qui rappresentate solo le parti salienti
(R5 is route reflector)
Loopback addresses are 9.9.9.X/32, where X is router id
Point-to-point addresses are 10.0.X-Y.X (i.e. Link from 1 to 2, router 1 interface, 10.0.21.1)

R1:

```
/system identity set name=R1

/interface bridge add name=lo
/ip address add address=9.9.9.1/32 interface=lo

/interface ethernet set 0 name=e0
/interface ethernet set 1 name=e1
/interface ethernet set 2 name=e2
/interface ethernet set 3 name=e3
/interface ethernet set 4 name=e4
/interface ethernet set 5 name=e5

/ip address add address=10.0.12.1/24 interface=e0

/routing ospf instance set 0 router-id=9.9.9.1
/routing ospf interface add interface=lo passive=yes
/routing ospf network add area=backbone network=9.9.9.1/32
/routing ospf network add area=backbone network=10.0.0.12.0/24
```

```
/mpls ldp set enabled=yes transport-address=9.9.9.1 lsr-id=9.9.9.1
/mpls ldp interface add interface=e0

/routing bgp instance set 0 router-id=9.9.9.1

/routing bgp peer add remote-address=9.9.9.5 remote-as=65530
     address-families=l2vpn update-source=lo

/interface bridge add name=A
/interface bridge add name=B
/interface bridge port add bridge=A interface=e4
/interface bridge port add bridge=B interface=e5

/interface vpls bgp-vpls add bridge=A bridge-horizon=1
     route-distinguisher=1:1 site-id=1 import-route-targets=1:1
     export-route-targets=1:1
/interface vpls bgp-vpls add bridge=B bridge-horizon=1
     route-distinguisher=2:2 site-id=1 import-route-targets=2:2
     export-route-targets=2:2
```

R5:

```
/routing bgp instance set 0 router-id=9.9.9.5

/routing bgp peer add remote-address=9.9.9.1 remote-as=65530
     address-families=l2vpn update-source=lo route-reflect=yes
/routing bgp peer add remote-address=9.9.9.4 remote-as=65530
     address-families=l2vpn update-source=lo route-reflect=yes
```

Alcuni output:

```
[admin@R5] > /tool traceroute 9.9.9.1 src-address=9.9.9.5
 # ADDRESS                                 RT1    RT2    RT3    STATUS
 1 10.0.35.3                               22ms   3ms    3ms    <MPLS:L=19,E=0>
 2 10.0.23.2                               3ms    1ms    2ms    <MPLS:L=18,E=0>
 3 9.9.9.1                                 2ms    2ms    1ms
```

```
[admin@A1] > ping 192.168.1.1 count=2
HOST                                 SIZE TTL TIME  STATUS
192.168.1.1                           56   64 13ms
192.168.1.1                           56   64 8ms
    sent=2 received=2 packet-loss=0% min-rtt=8ms avg-rtt=10ms max-rtt=13ms

[admin@A1] > ping 192.168.1.2 count=2
HOST                                 SIZE TTL TIME  STATUS
192.168.1.2                           56   64 20ms
192.168.1.2                           56   64 5ms
    sent=2 received=2 packet-loss=0% min-rtt=5ms avg-rtt=12ms max-rtt=20ms

[admin@A1] > ping 192.168.1.3 count=2
HOST                                 SIZE TTL TIME  STATUS
192.168.1.3                           56   64 8ms
192.168.1.3                           56   64 5ms
    sent=2 received=2 packet-loss=0% min-rtt=5ms avg-rtt=6ms max-rtt=8ms
```

```
[admin@A1] > /ip arp print
Flags: X - disabled, I - invalid, H - DHCP, D - dynamic, P - published
 #   ADDRESS         MAC-ADDRESS       INTERFACE
 0 D 192.168.1.2     00:AA:32:ED:AA:02 ether1
 1 D 192.168.1.3     00:AA:32:ED:AA:03 ether1




[admin@R5] > /interface bridge host print where bridge=A
Flags: L - local, E - external-fdb
  BRIDGE          MAC-ADDRESS          ON-INTERFACE          AGE
  A               00:AA:00:16:C7:04 vpls2                39s
  A               00:AA:00:21:82:04 vpls3                14s
L A               00:AA:00:A9:AB:04 e4                   0s
  A               00:AA:00:BA:C8:00 vpls3                1m1s
  A               00:AA:00:E5:A8:00 e4                   54s
  A               00:AA:00:ED:76:00 vpls2                48s
  A               00:AA:32:ED:AA:01 vpls2                4s
  A               00:AA:32:ED:AA:02 e4                   5s
  A               00:AA:32:ED:AA:03 vpls3                1s
L A               02:00:96:E3:A6:A7 vpls3                0s
L A               02:DA:0F:24:67:C6 vpls2                0s


[admin@R5] > /interface vpls print
Flags: X - disabled, R - running, D - dynamic,
B - bgp-signaled, C - cisco-bgp-signaled
 0 RDB name="vpls1" mtu=1500 l2mtu=1500 mac-address=02:06:07:C1:59:55
       arp=enabled disable-running-check=no remote-peer=9.9.9.1
       cisco-style=no cisco-style-id=0 advertised-l2mtu=1500
       pw-type=raw-ethernet use-control-word=yes vpls=bgp-vpls1

 1 RDB name="vpls2" mtu=1500 l2mtu=1500 mac-address=02:DA:0F:24:67:C6
       arp=enabled disable-running-check=no remote-peer=9.9.9.1
       cisco-style=no cisco-style-id=0 advertised-l2mtu=1500
       pw-type=raw-ethernet use-control-word=yes vpls=bgp-vpls2

 2 RDB name="vpls3" mtu=1500 l2mtu=1500 mac-address=02:00:96:E3:A6:A7
       arp=enabled disable-running-check=no remote-peer=9.9.9.4
       cisco-style=no cisco-style-id=0 advertised-l2mtu=1500
       pw-type=raw-ethernet use-control-word=yes vpls=bgp-vpls2


[admin@R5] > /interface bridge port print
Flags: X - disabled, I - inactive, D - dynamic
 #   INTERFACE            BRIDGE          PRIORITY PATH-COST  HORIZON
 0   e4                   A               0x80          10    none
 1   e5                   B               0x80          10    none
 2 D vpls1                B               0x80          50       1
 3 D vpls2                A               0x80          50       1
 4 D vpls3                A               0x80          50       1
```