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Indonesia - Yogyakarta

MikroTik User Meeting

Conference, Exhibition, Workshop

Yogyakarta, 9 - 10 Oktober 2015

Royal Ambarrukmo - Yogyakarta

MikroTik

IDENTITY

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Organisation Experience:

- **Comparative study in Singapore : 3 days**
-- **CPD in Adelaide (South of Australia) : 3 weeks**
-- **…….. : …….. ?**


WELCOME TO
THE HEIGHTS

MikroTik Academy

First Certified Mikrotik Academy Training in my school

RoMON

Router Management Overlay Network

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MUM Yogyakarta
9-10 October 2015

RoMON

- RoMON stands for **Router Management Overlay Network**. RoMON works by establishing independent MAC layer peer discovery and data forwarding network. RoMON network operates independently from **L2 or L3** forwarding configuration.
- Each router on RoMON network is assigned its RoMON ID. RoMON ID can be selected from **port MAC** address or specified by user.

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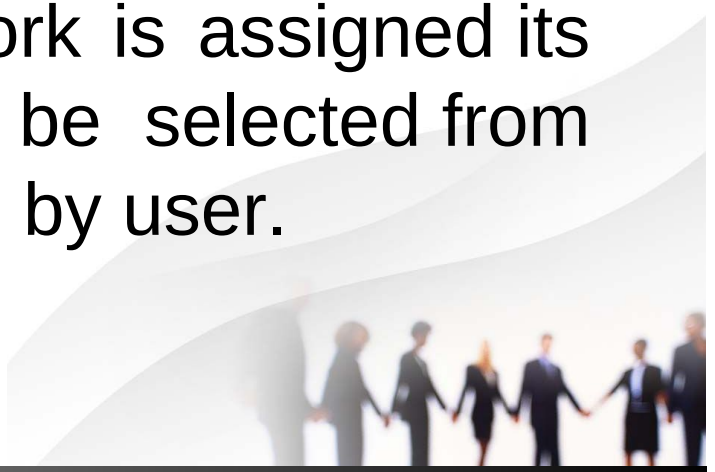


Features in RoMON

- Establishing secured layers connection to mikrotik devices through physical (ethernet) and tunnel layers .
- Discovery and management MikroTik devices through Ping, SSH, Winbox (version 3.0.rc.9).
- Discovering on enabled RoMon of mikrotik devices which had previously been passed through multiple hops.,

RoMON Implementation

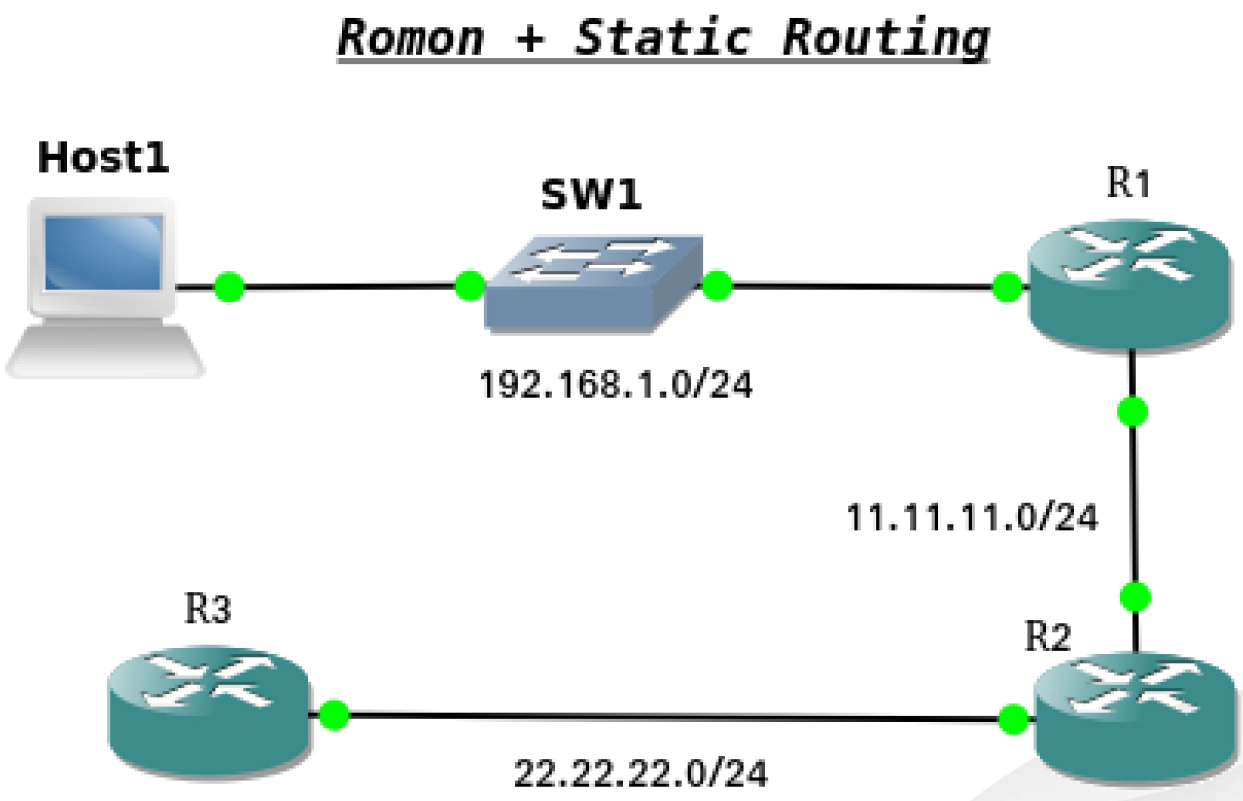
- Winbox version **3.0.rc.9** which supports RoMon Applications features should be the minimal requirement.
- RoMON features is configured in **/romon** menu (in version 6.28) or under **/tool romon** menu (in version 6.28 above).
- In order to connect in RoMon network the feature should be **enabled,** and **ports** that participate in RoMON network must be specified.

How to enable RoMON feature

- RoMon feature can be found in the **Tools** menu → **RoMon.** To enable, please clik “**Enabled “.**

```
[admin@MikroTik] > tool romon pr
  enabled: no
       id: 00:00:00:00:00:00
  secrets:
[admin@MikroTik] > tool romon set enabled=yes secrets=123
[admin@MikroTik] > tool romon pr
     enabled: yes
          id: 00:00:00:00:00:00
     secrets: 123
  current-id: 00:00:AB:E4:51:04
[admin@MikroTik] >
```

Topology


Romon + Static Routing
Host1
SW1
R1
192.168.1.0/24
11.11.11.0/24
R3
R2
22.22.22.0/24

Parameter Secrets in RoMON

- This parameter work as authentication for connected MikroTik devices.

```
[admin@MikroTik] > tool romon set secrets=123
```

Parameter ID in RoMON

- This ID defined as MAC Address from used router for device connectivity. We can decide it with random MAC Address on router interface. Alternatively, it will be filled automatically with existing MAC Address route as default.

```
[admin@MikroTik] > tool romon set id=00:00:00:00:00:01
[admin@MikroTik] > tool romon pr
      enabled: yes
           id: 00:00:00:00:00:01
      secrets: 123
   current-id: 00:00:00:00:00:01
```

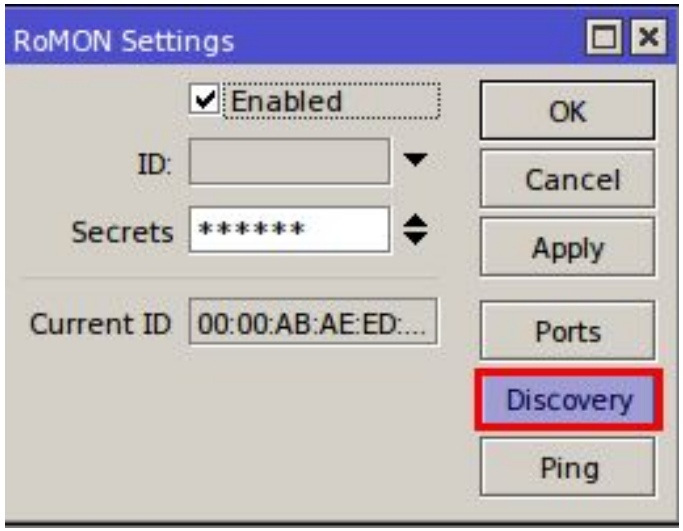
Port Menu in RoMON

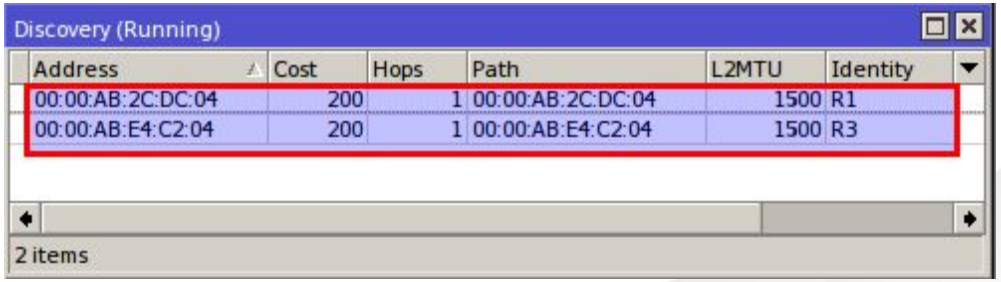
- As default, all interface on router is active for RoMon. We can activate any interface to be enabled. More manual configuration can be done to set parameter on ‘ Cost’ and ‘Secret’.

```
[admin@MikroTik] > tool romon port pr
Flags: X - disabled, D - dynamic
 #    INTERFACE                                  FORBID    COST
 0    all                                        no          100
[admin@MikroTik] > tool romon port set cost=1 numbers=0
[admin@MikroTik] > tool romon port pr
Flags: X - disabled, D - dynamic
 #    INTERFACE                                  FORBID    COST
 0    all                                        no            1
```

Discovery Menu in RoMON

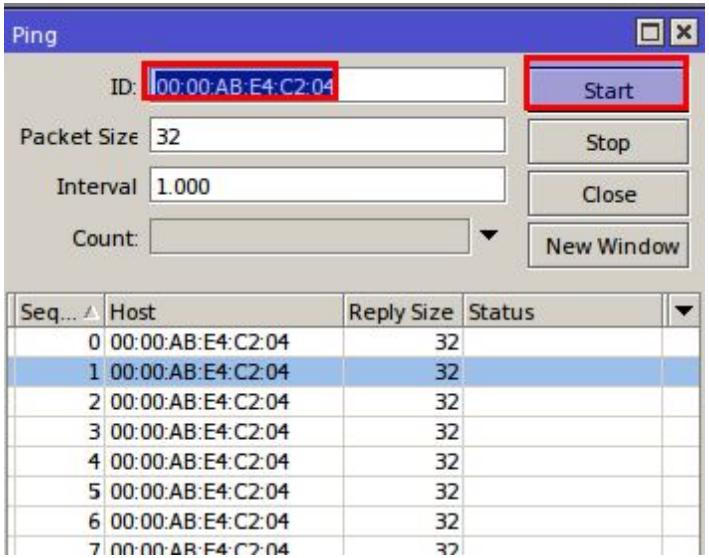
- **Discovery** command in setting can be used to show the active and connected devices. RoMon ID (Address), Cost, Hops number and Identity can also be found here.



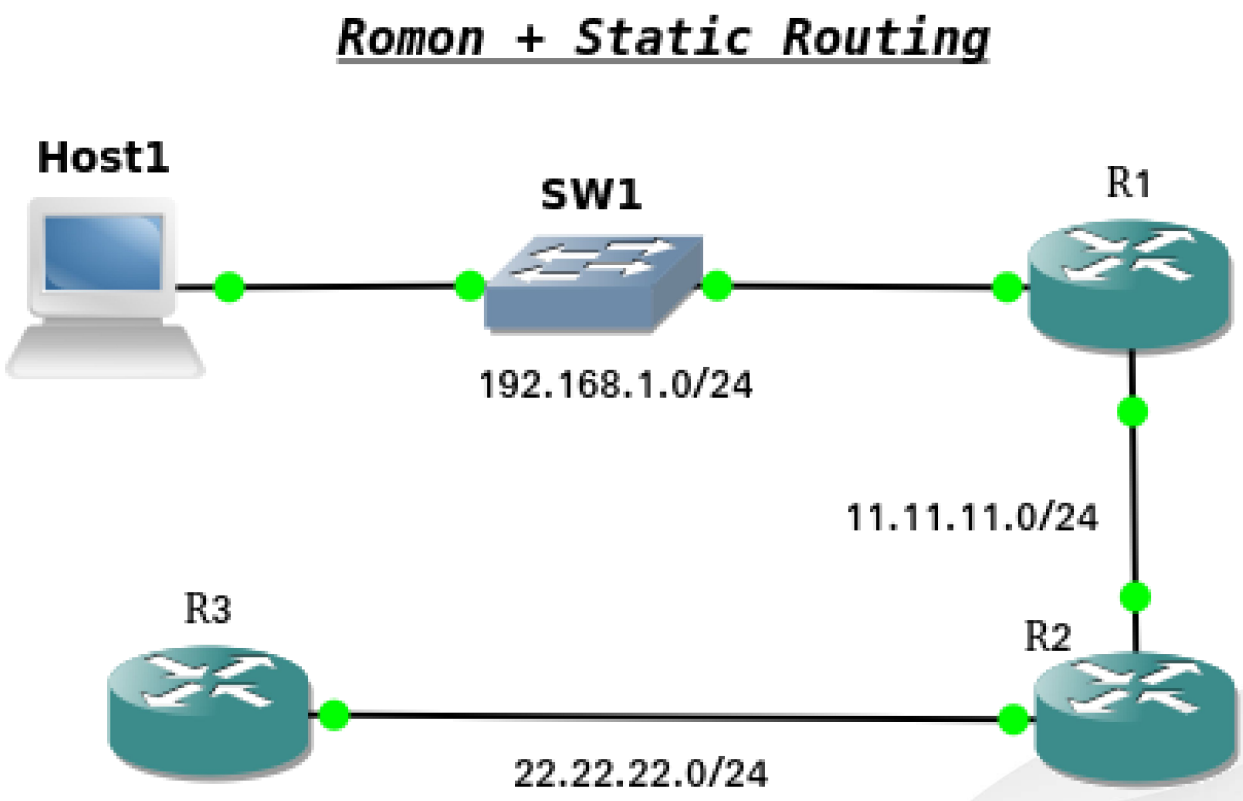


Ping Menu in RoMON

- We can monitor all mikrotik devices to identify its active status and configuration status on connected devices. To do so, Ping RoMOn can be done accordingly.



Topology


Romon + Static Routing
Host1
SW1
R1
192.168.1.0/24
11.11.11.0/24
R3
R2
22.22.22.0/24

Configuration Router1

- Setting ip address in R1

```
[admin@R1] > ip address pr
Flags: X - disabled, I - invalid, D - dynamic
 #   ADDRESS            NETWORK         INTERFACE
 0   192.168.1.2/24     192.168.1.0     ether1
 1   11.11.11.1/24      11.11.11.0      ether2
[admin@R1] >
```

- Setting Static Routing in R1

```
[admin@R1] > ip route add dst-address=22.22.22.0/24 gateway=11.11.11.2
[admin@R1] > ip route pr
Flags: X - disabled, A - active, D - dynamic,
C - connect, S - static, r - rip, b - bgp, o - ospf, m - mme,
B - blackhole, U - unreachable, P - prohibit
 #      DST-ADDRESS        PREF-SRC        GATEWAY            DISTANCE
 0 ADC  11.11.11.0/24      11.11.11.1      ether2                    0
 1 A S  22.22.22.0/24                      11.11.11.2                1
 2 ADC  192.168.1.0/24     192.168.1.2     ether1                    0
[admin@R1] > _
```

Configuration Router2

- Setting ip address in R2

```
[admin@R2] > ip address pr
Flags: X - disabled, I - invalid, D - dynamic
 #   ADDRESS            NETWORK         INTERFACE
 0   11.11.11.2/24      11.11.11.0      ether1
 1   22.22.22.1/24      22.22.22.0      ether2
[admin@R2] > _
```

- Setting Static Routing in R2

```
[admin@R2] > ip route add dst-address=192.168.1.0/24 gateway=11.11.11.1
[admin@R2] > ip route pr
Flags: X - disabled, A - active, D - dynamic,
C - connect, S - static, r - rip, b - bgp, o - ospf, m - mme,
B - blackhole, U - unreachable, P - prohibit
 #      DST-ADDRESS        PREF-SRC        GATEWAY            DISTANCE
 0 ADC  11.11.11.0/24      11.11.11.2      ether1                    0
 1 ADC  22.22.22.0/24      22.22.22.1      ether2                    0
 2 A S  192.168.1.0/24                     11.11.11.1                1
[admin@R2] > _
```

Configuration Router3

- Setting ip address in R3

```
[admin@R3] > ip address pr
Flags: X - disabled, I - invalid, D - dynamic
 #   ADDRESS            NETWORK         INTERFACE
 0   22.22.22.2/24      22.22.22.0      ether1
[admin@R3] >
```

- Setting Static Routing in R3

```
[admin@R3] > ip route add dst-address=11.11.11.0/24 gateway=22.22.22.1
[admin@R3] > ip route add dst-address=192.168.1.0/24 gateway=22.22.22.1
[admin@R3] > ip route pr
Flags: X - disabled, A - active, D - dynamic,
C - connect, S - static, r - rip, b - bgp, o - ospf, m - mme,
B - blackhole, U - unreachable, P - prohibit
 #      DST-ADDRESS        PREF-SRC        GATEWAY            DISTANCE
 0 A S  11.11.11.0/24                      22.22.22.1                1
 1 ADC  22.22.22.0/24      22.22.22.2      ether1                    0
 2 A S  192.168.1.0/24                     22.22.22.1                1
[admin@R3] > _
```

Configuration RoMon all Router

Setting RoMon in R1

```
[admin@R1] > tool romon set enabled=yes secrets=daulae
[admin@R1] > tool romon pr
      enabled: yes
           id: 00:00:00:00:00:00
      secrets: daulae
   current-id: 00:00:AB:2C:DC:04
[admin@R1] >
```

Setting RoMon in R3

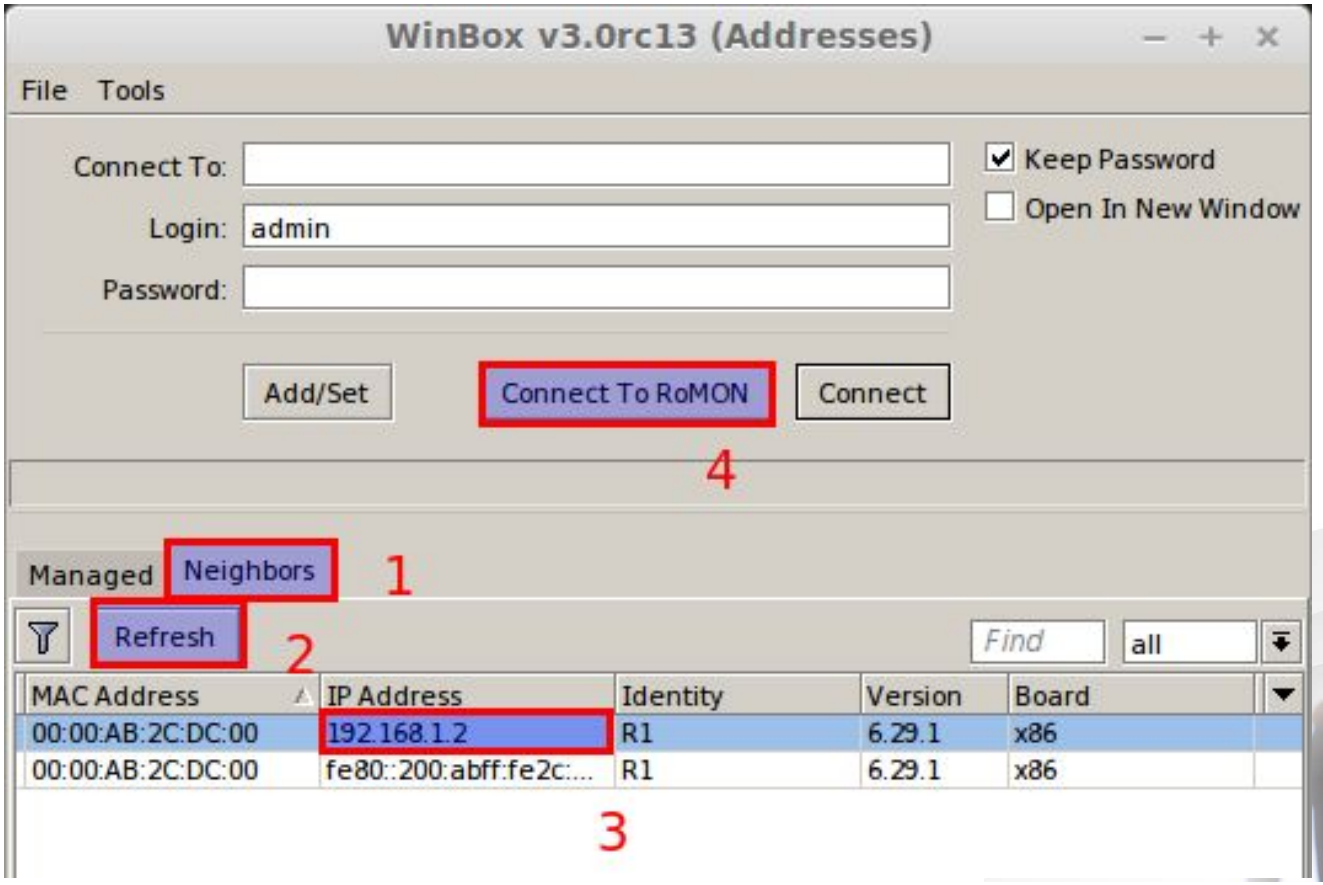
```
[admin@R3] > tool romon set enabled=yes secrets=daulae
[admin@R3] > tool romon pr
      enabled: yes
           id: 00:00:00:00:00:00
      secrets: daulae
   current-id: 00:00:AB:E4:C2:04
[admin@R3] >
```

Setting RoMon in R2

```
[admin@R2] > tool romon set enabled=yes secrets=daulae
[admin@R2] > tool romon pr
      enabled: yes
           id: 00:00:00:00:00:00
      secrets: daulae
   current-id: 00:00:AB:AE:ED:04
[admin@R2] >
```

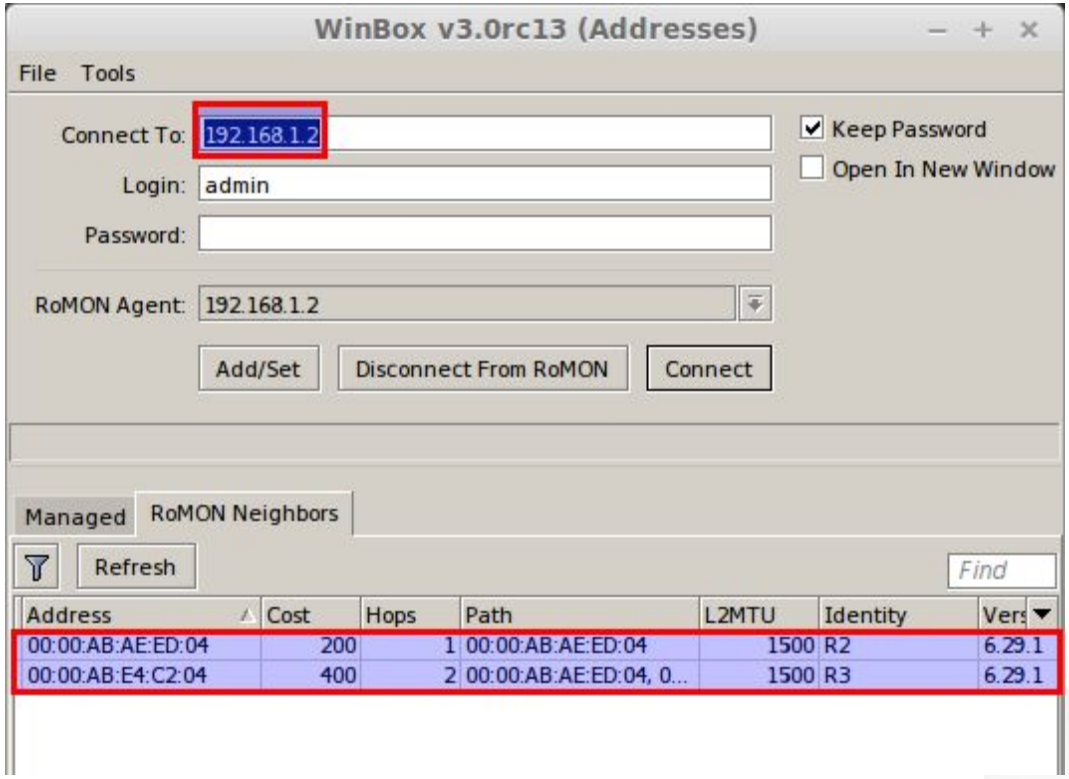
Test RoMon in Host

For RoMon connection we use winbox versi 3-up click neighbors ➡ Refresh ➡ Click ip address ➡ Connect to RoMon.



Test RoMon in Host

After setting the RoMon in every router we can see another router identity in ours.

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