

Using RoMON and CHR with GNS3

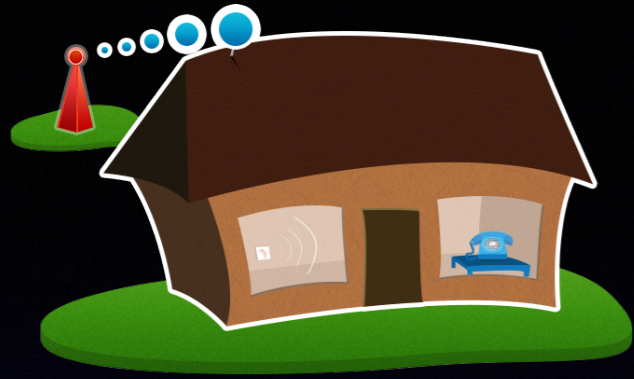
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Introduction

Who is Chris?

- Technical Lead for Orbital Net / Vfast
- MikroTik Certified Consultant
- MikroTik MTCNA, MTCRE and MTCINE
- MikroTik Evangelist





Orbital Net / Vfast

- UK's best fixed wireless broadband service
- Providing Internet Access, VoIP, Web Hosting and more to business and residential clients since 1998.
- Offering service via Fibre (Leased Lines, FTTC, FTTH, FTTP), Wireless, Copper and more via direct hand off in local exchanges all over Kent.
- Offering customers redundancy and ultrafast connectivity with flexible and feature rich VoIP Phone systems
- AS24916 - Email support@orbital.net to peer with us.
- We are able to accept private peering in many UK BT Telephone Exchanges, please contact us for our on net locations

Learning RouterOS with GNS

Early 2015

- Not easy to Setup GNS3
- Manual RouterOS X86 License entry via CLI
- From idea to setup complete over 1 hour.

2016

- Setup Easy
- Up and Running in under 10 minutes.

Cloud Hosted Router (CHR)

- Introduced Late 2015
- 4 tier including a free tier.
- All tiers allow full RouterOS features
- Simple License Upgrade
- Flexible Usage
- Works with AWS, VirtualBox and Qemu.

Price Tiers

License	Speed limit	Price
Free	1Mbit	FREE
P1	1Gbit	\$45
P10	10Gbit	\$95
P-Unlimited	Unlimited	\$250

```
[admin@MikroTik] > /system license print
system-id: 6lR1ZP/utuJ
level: free

[admin@MikroTik] > /system license renew
account: mymikrotikcomaccount
password: *****
level: p1
status: done

[admin@MikroTik] > /system license print
system-id: 6lR1ZP/utuJ
level: p1
next-renewal-at: jan/10/2016 21:59:59
deadline-at: feb/09/2016 21:59:59
```


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.
- RoMON works by establishing independent MAC layer peer discovery and data forwarding network. RoMON network operates independently from L2 or L3 forwarding configuration.
- Establishing secured layers connection to mikrotik devices through physical (ethernet) and tunnel layers .

Mac Telnet And Some

- Secure Layer2 access to MikroTik devices via:
 - Physical connection
 - Through a Layer2 tunnel
- Discovery and Management of the Mikrotik devices via:
 - Ping
 - SSH
 - Winbox
- Discovery of RoMON devices over multiple hops

Home Example of RoMON

- RB750 Running OSPF Stub Area
- RB3011 Main Router
- PowerBox for CCTV
- Cloud Switch for Distribution

The screenshot shows the WinBox v3.7 (Addresses) interface. The top section contains configuration fields for connecting to a RoMON agent. The 'Connect To' field is set to 80.88.210.73, with 'Login' as 'admin' and 'Password' as '*****'. The 'Session' is set to '<own>' and 'Note' is 'Chris Humphreys'. The 'RoMON Agent' field is also set to 80.88.210.73. On the right, there are checkboxes for 'Keep Password', 'Secure Mode', 'Autosave Session', and 'Open In New Window'. Below the configuration fields are buttons for 'Add/Set', 'Disconnect From RoMON', and 'Connect'.

The bottom section is titled 'Managed RoMON Neighbors' and contains a table with the following data:

Address	Cost	Hops	Path	L2MTU	Identity	Version	Board
02:5D:11:3F:CF:7B	200	1	02:5D:11:3F:CF:7B	1500	ChrisHumphreys-RB3011UiAS	6.36	RB3011UiAS
4C:5E:0C:E9:96:EA	400	2	02:5D:11:3F:CF:7...	1500	MikroTik PowerBox	6.36	RB750P
D4:CA:6D:CD:C7:0A	400	2	02:5D:11:3F:CF:7...	1500	MikroTik Cloud Switch	6.36	CRS125-24G-1S-2HnD

At the bottom left of the window, it says '3 items'.

CHR and RoMON Combined

- Running GNS3 on a Windows 7 Box
- Loopback Adapter
- CHR
- RoMON
- All of the above will give you Winbox access to your full GNS3 Lab

Example Simple BGP Typology

```

Core1

MMM   MMM  III  KKK  KKK  RRR  RRR  OOOOOO  TTT   III  KKK  KKK

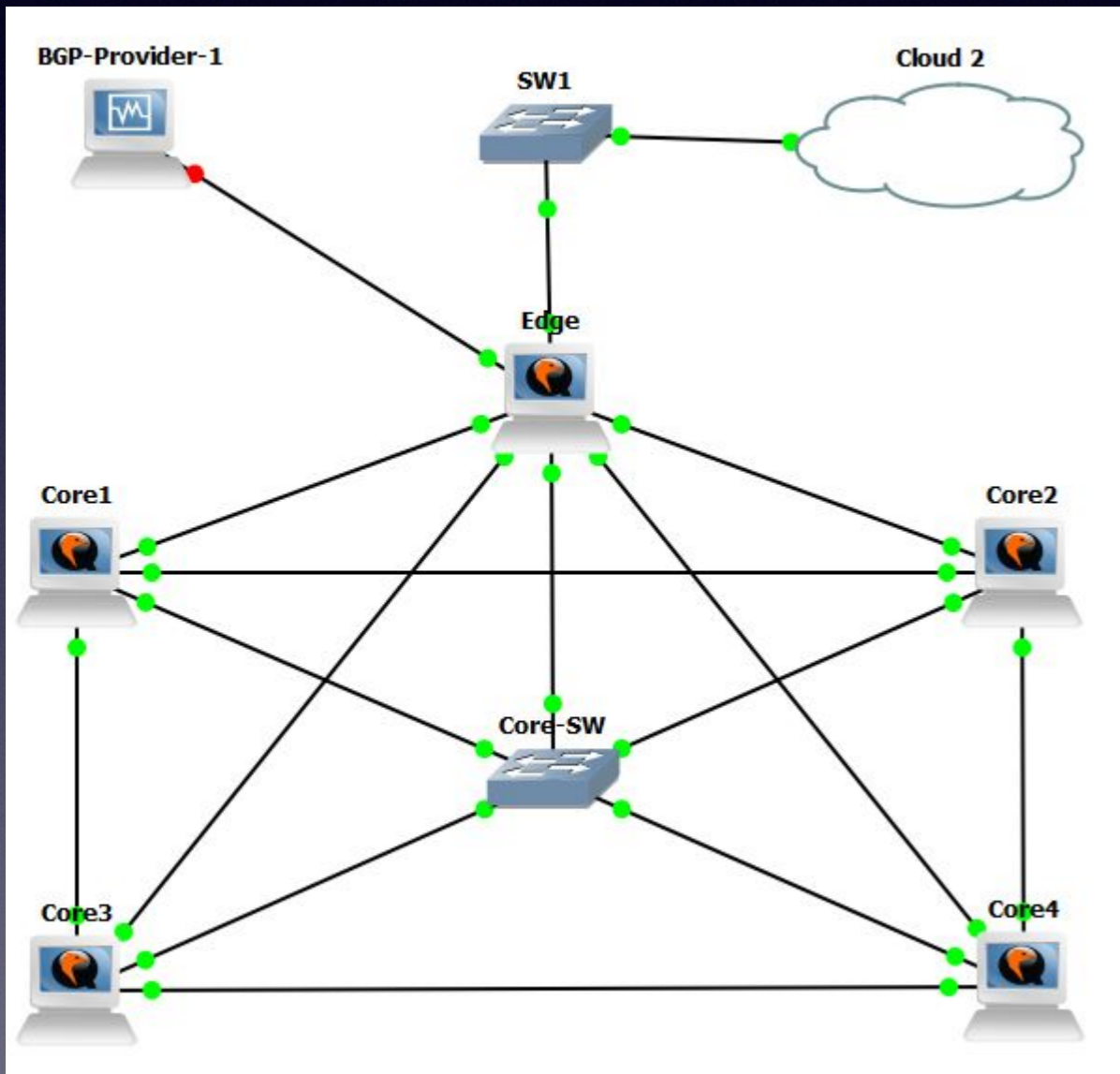
MikroTik RouterOS 6.37.1 (c) 1999-2016   http://www.mikrotik.com/

Do you want to see the software license? [Y/n]: n
[?]      Gives the list of available commands
command [?]  Gives help on the command and list of arguments

[Tab]      Completes the command/word. If the input is ambiguous,
           a second [Tab] gives possible options

/         Move up to base level
..        Move up one level
/command  Use command at the base level
oct/22/2016 11:49:59 system,error,critical router was rebooted without proper shu
tdown

[admin@MikroTik] > system identity set name=Core1
[admin@Core1] > tool romon set enabled=yes
[admin@Core1] >
  
```



WinBox v3.7 (Addresses)

File Tools

Connect To: 00:00:AB:3D:77:00 Keep Password
 Login: admin Open In New Window
 Password:

RoMON Agent: 10.0.0.2

Managed RoMON Neighbors

Address	Cost	Hops	Path	L2MTU	Identity	Version	Board
00:00:AB:80:95:00	200	1	00:00:AB:80:95:00	1500	Core1	6.37.1	CHR
00:00:AB:C7:FC:00	200	1	00:00:AB:C7:FC:00	1500	Core2	6.37.1	CHR
00:00:AB:3D:77:00	200	1	00:00:AB:3D:77:00	1500	Core3	6.37.1	CHR
00:00:AB:A5:51:00	200	1	00:00:AB:A5:51:00	1500	Core4	6.37.1	CHR

4 items

Demo

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Other Great CHR Usage

- From EU Mum 2016 – ISP Architecture – Deploy virtualised public BGP routers with CHR for large scale transit peering - http://mum.mikrotik.com/presentations/EU16/presentation_3098_1456817868.pdf
- Later today - Mikrotik CHR on Azure - setup and use case - Presentation walks through a setup of Cloud Hosted Routers on Azure and shows some use cases in network management.