

Using RoMON and CHR with GNS3

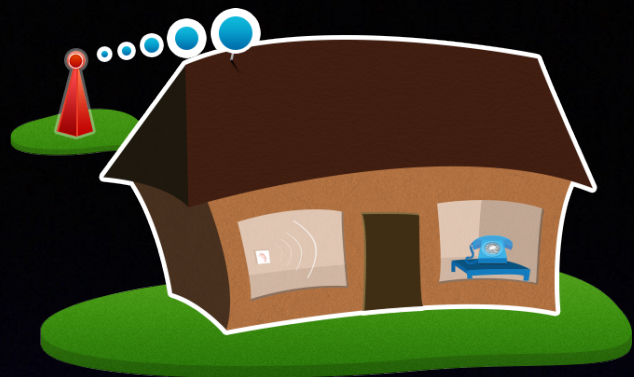
Chris Humphreys
@ChrisHumphreys_
Orbital Net

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

WinBox v3.7 (Addresses)

File Tools

Connect To: 80.88.210.73

Login: admin

Password: *****

Session: <own> Browse...

Note: Chris Humphreys

Group:

RoMON Agent: 80.88.210.73

Add/Set Disconnect From RoMON Connect

Managed RoMON Neighbors

Refresh Find

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

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

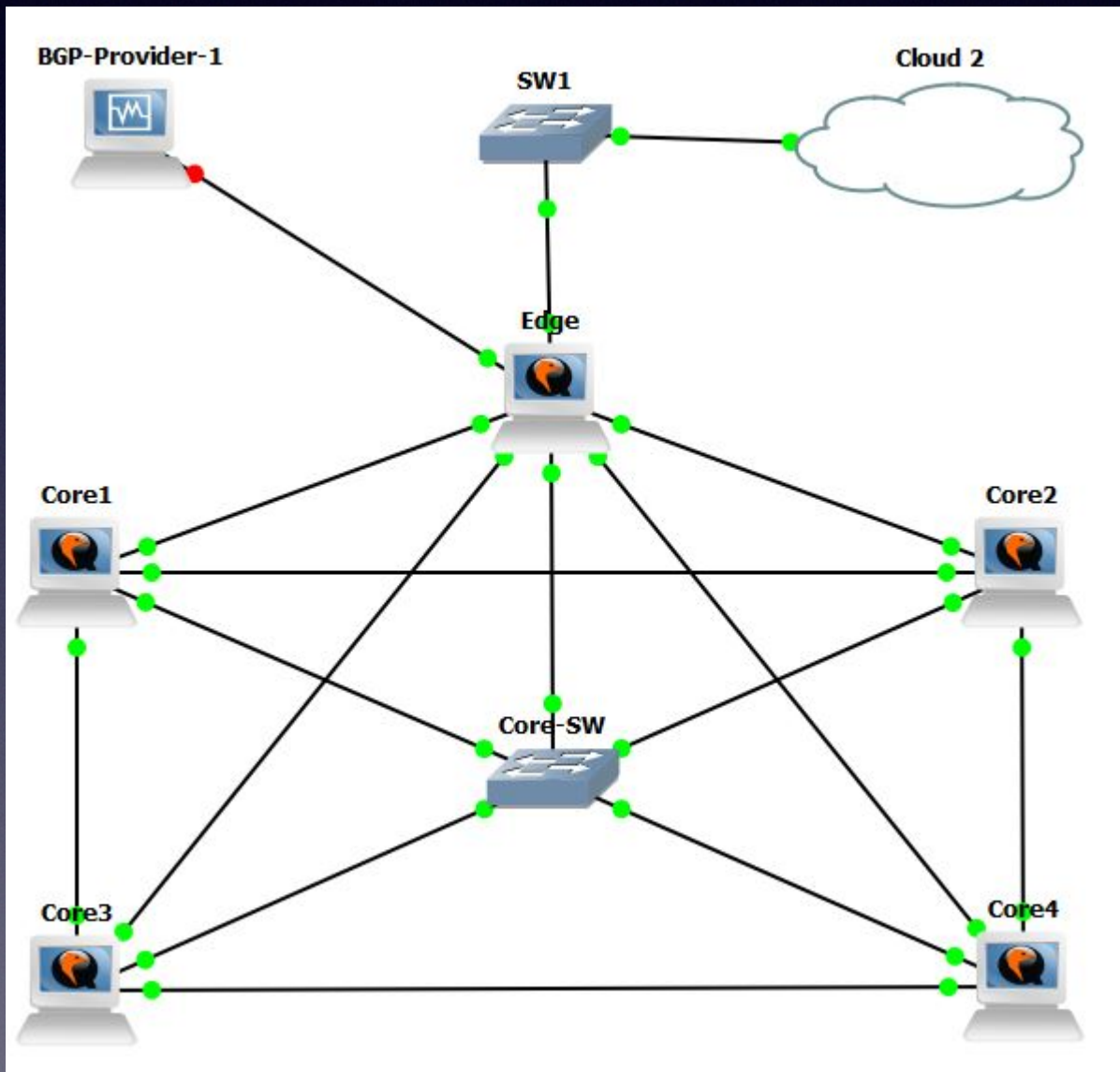
MikroTik RouterOS 6.37.1 (c) 1999-2016      http://www.mikrotik.com/

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 ☐ Open In New Window

Login: admin

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

Using RoMON and CHR with GNS3

Chris Humphreys
@ChrisHumphreys_
Orbital Net

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.