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FreeRadius3

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IPv6 PD/IPv4 DHCP-server Dual-stack

Leo De Geer

TR0003

Consultant/Trainer/Riga Bootcamp Trainer

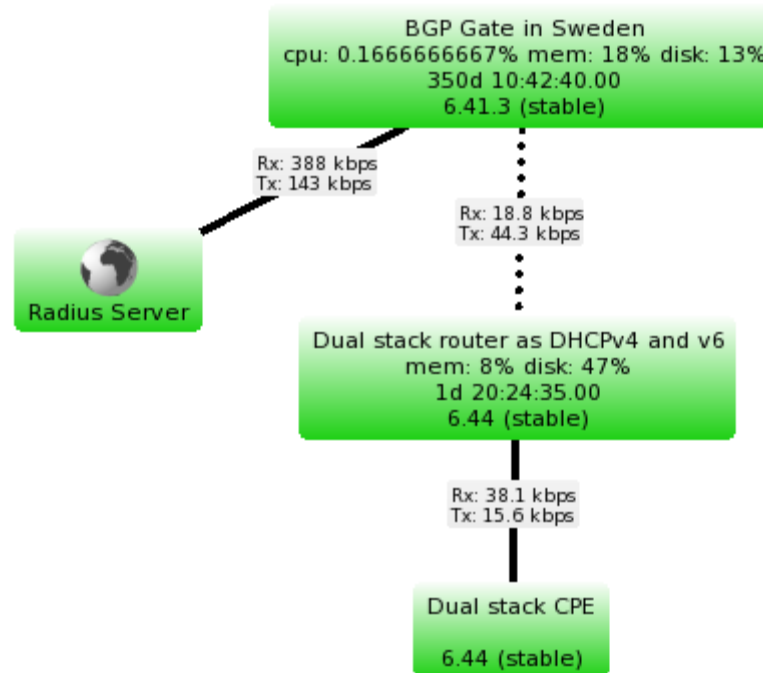
Objective

- To get Dual-stack implementation with FreeRADIUS3
- To get a Dual-stack bandwidth-limit
- To get at the same time admin accounts for the routers on FreeRADIUS

First Dual stack network

- If you have BGP and upstream IPv6 you are done!
- Or use IPv4 to IPv6 tunnel
- You can look at my presentation from MUM2016
- <https://mum.mikrotik.com/2016/EU/agenda/EN>
- http://mum.mikrotik.com/presentations/EU16/presentation_2957_1456473375.pdf

My network in live lab



RouterOS Radius client

The screenshot shows the 'RADIUS Server <91.202.156.9>' configuration window in RouterOS. The window has two tabs: 'General' and 'Status'. The 'General' tab is active and contains the following fields and options:

- Service:** A group of checkboxes including ppp, login, hotspot, wireless, dhcp, and ipsec.
- Called ID:** A dropdown menu.
- Domain:** A dropdown menu.
- Address:** A text field containing '91.202.xxx.xxx'.
- Protocol:** A dropdown menu set to 'udp'.
- Secret:** A password field with masked characters.
- Authentication Port:** A text field containing '1812'.
- Accounting Port:** A text field containing '1813'.
- Timeout:** A text field containing '3000' with 'ms' as a unit.
- Accounting Backup:** An unchecked checkbox.
- Realm:** A dropdown menu.
- Certificate:** A dropdown menu set to 'none'.
- Src. Address:** A text field containing '10.104.0.254'.

On the right side of the window, there is a vertical stack of buttons: OK, Cancel, Apply, Disable, Comment, Copy, Remove, and Reset Status. At the bottom left of the window, the status 'enabled' is displayed.

IPv4 DHCP-server

DHCP Server <default>

Name: default

Interface: cap

Relay:

Lease Time: 00:10:00

Bootp Lease Time: forever

Address Pool: dhcp_pool1

DHCP Option Set:

Src. Address:

Delay Threshold:

Authoritative: yes

Bootp Support: static

Always Broadcast

Insert Queue Before: first

Allow Dual Stack Queue

Add ARP For Leases

Conflict Detection

Use RADIUS: yes

Lease Script:

enabled

OK
Cancel
Apply
Disable
Copy
Remove

IPv6 PD server

DHCPv6 Server <default>

Name: default

Interface: cap

Address Pool6: pool1

Lease Time: 01:00:00

DHCP Options:

Allow Dual Stack Queue

enabled

OK
Cancel
Apply
Disable
Comment
Copy
Remove

```
Terminal

MMM      MMM      KKK      TTTTTTTTTT      KKK
MMMM     MMMM     KKK      TTTTTTTTTT      KKK
MMM MMMM MMM III KKK KKK RRRRRR 000000 TTT III KKK KKK
MMM MM  MMM III KKKKKK RRR RRR 000 000 TTT III KKKKK
MMM     MMM III KKK KKK RRRRRR 000 000 TTT III KKK KKK
MMM     MMM III KKK KKK RRR RRR 000000 TTT III KKK KKK

MikroTik RouterOS 6.44 (c) 1999-2019 http://www.mikrotik.com/

[?] 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
[leo@GW Leo hemma RB1100AH] > ipv6 dhcp-server print detail
Flags: D - dynamic, X - disabled, I - invalid
 0 name="default" interface=cap address-pool=pool1 lease-time=1h rapid-commit=yes use-radius=yes preference=255
  dhcp-option="" duid="0x0003000164d154f1603d"
[leo@GW Leo hemma RB1100AH] > ipv6 dhcp-server set 0 allow-dual-stack-queue=yes
[leo@GW Leo hemma RB1100AH] >
```

FreeRADIUS3 IPv6

- We need to edit the dictionary.mikrotik
- 2 new ATTRIBUTES as of 6.43
- ***Delegated-IPv6-Prefix*** - IPv6 Prefix
- ***Delegated-IPv6-Prefix-Pool*** - IPv6 Prefix pool used for Prefix Delegation

FreeRADIUS3 IPv6

```
INSERT INTO `radcheck` (`username`, `attribute`, `op`, `value`) VALUES
('000c4200d464', 'Auth-Type', ':=', 'Accept'),

INSERT INTO `radreply` (`username`, `attribute`, `op`, `value`) VALUES
('000c4200d464', 'Delegated-IPv6-Prefix', '=', 'fdb4:4de7:a3f8:418c::/66'),
('000c4200d464', 'Mikrotik-Rate-Limit', '=', '10M');
```

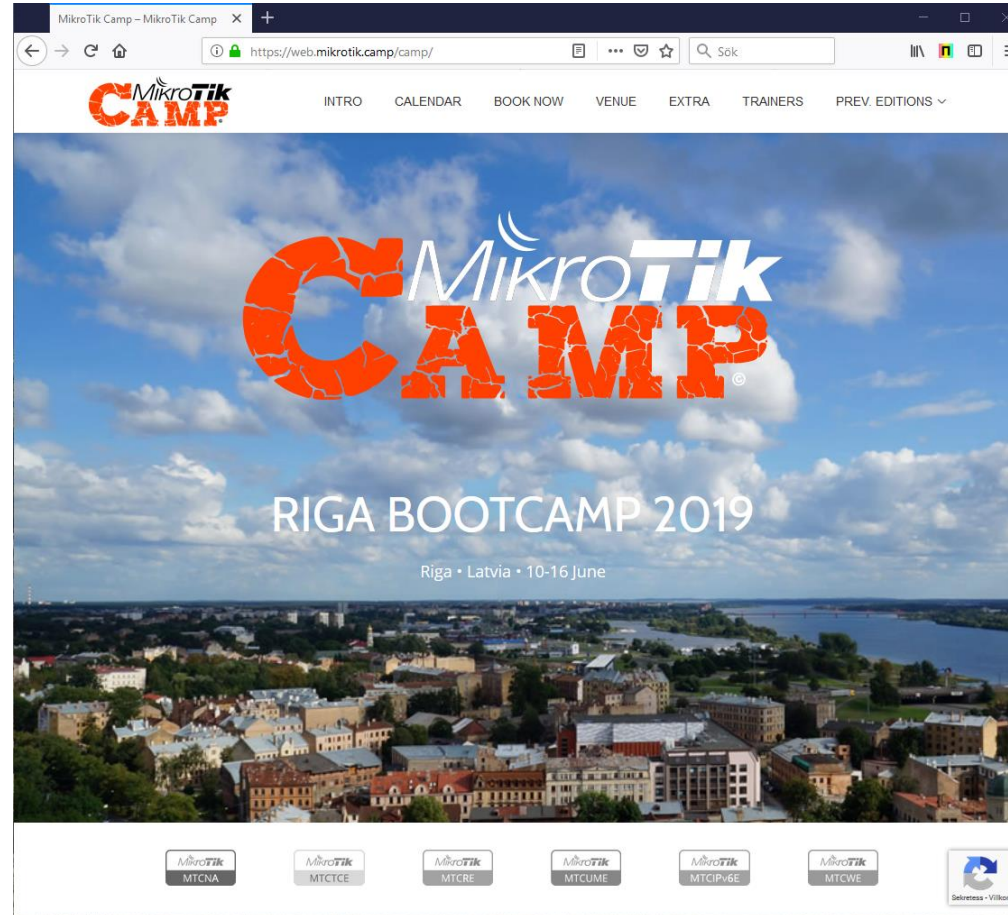
This is if you use FreeRADIUS with MYSQL

daloRADIUS

- One of many php frontend to FreeRADIUS
- Makes life easy

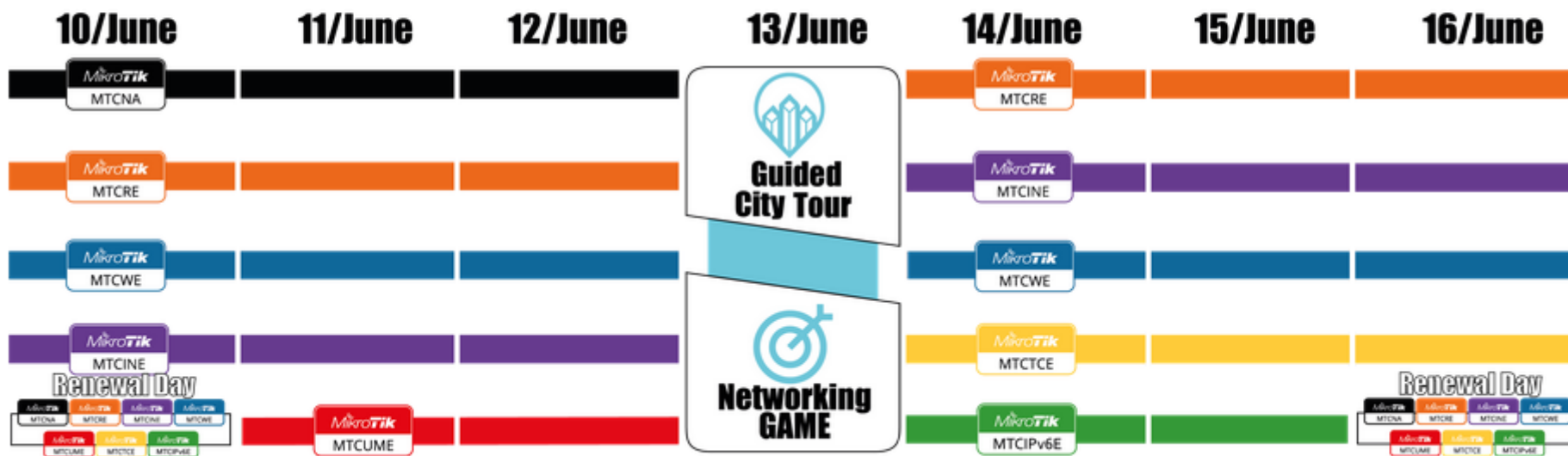
Lets look at it running live

Riga Bootcamp



The full schedule of the Riga Bootcamp 2019,

10-16 June – in English language:





Q&A

Leo De Geer leo@shlab.se

+46 (0)705-91 59 87

TR0003

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