Running Simplemux in a MikroTik RB2011UiAS-IN router

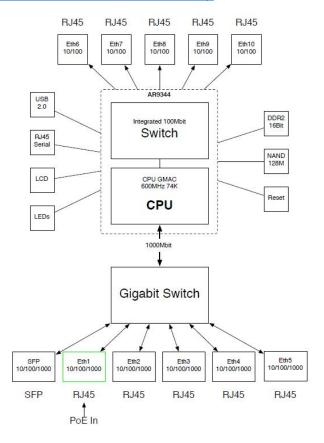
MikroTik RouterOS 6.30.2 (c) 1999-2015 http://www.mikrotik.com/

Version of the RouterOS:

```
[admin@MikroTik] > export
# jan/02/1970 00:37:08 by RouterOS 6.30.2
# software id = 1QGM-D3VP
#
```

Internal structure of the router

http://www.cloudrouterswitches.com/RB2011UiAS-IN.asp



Create a metarouter (a Virtual Machine running in the router)

http://wiki.mikrotik.com/wiki/Manual:Metarouter

They are Virtual Machines (VMs) that can run OSes as e.g. OpenWrt. You can create them with the web interface or with the command interface of the MikroTik router.

You can download an OpenWrt VM from here:

http://www.mikrotik.com/download/metarouter/openwrt-mr-mips-rootfs.tgz

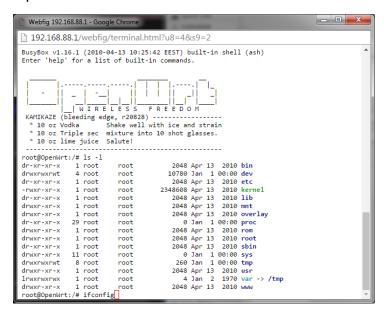
Then, upload the .tgz file to the MikroTik router. You can use WinSCP or any other remote file manager. You can also use the "Files" option in the web interface of the MikroTik router, to select a file of your PC and to upload it.

Start the Virtual Machine

Use the web or the command interface:

```
[admin@MikroTik] > metarouter
[admin@MikroTik] /metarouter> add name=mr0 memory-size=32 disk-size=32000
disabled=no
[admin@MikroTik] /metarouter> print
Flags: X - disabled
#
   NAME
                                         MEMORY-SIZE DISK-SIZE
                                                                     USFD-DTSK
STATE
0
                                               32MiB
                                                        32000kiB
                                                                          5kiB
   mr0
running
[admin@MikroTik] /metarouter>
```

Then, using the "console" button of the web, you can open a console of the OpenWrt VM:



Adding an Eth device to the OpenWrt VM

http://forum.mikrotik.com/viewtopic.php?t=32187&start=250

This command binds the interface eth2 of the MikroTik router as the eth0 interface of the mr2 VM (an OpenWrt machine in this case):

```
[admin@MikroTik] /metarouter> interface
[admin@MikroTik] /metarouter interface> add static-interface=ether2-master-local
virtual-machine=mr2 vm-mac-address=02:97:24:54:0D:20
```

Now, if you connect a wire to the eth2 port of the MikroTik router, you will be able to access the VM via SSH.

Go to the VM (using the console you can open from the web interface of the MikroTik router) and add an IP address to the etho interface:

```
root@metarouter:~# ifconfig eth0 192.168.1.2
```

Installing openvpn in the OpenWrt vm

You need to install these packages for creating a tun device in the OpenWrt VM:

Downloaded from:

http://openwrt.wk.cz/attitude_adjustment/mr-mips/packages/

```
# opkg install /root/kmod-tun_3.3.8-1_mr-mips.ipk
# opkg install /root/liblzo_2.06-1_mr-mips.ipk
# opkg install /root/zlib_1.2.7-1_mr-mips.ipk
# opkg install /root/libopenssl_1.0.1e-1_mr-mips.ipk
# opkg install /root/openvpn_2.2.2-2_mr-mips.ipk
```

Running Simplemux in the OpenWrt vm

Create a tun interface

```
openvpn --mktun --dev tun0 --user root
```

You can get the Simplemux executable, compiled for OpenWrt here:

https://github.com/TCM-TF/simplemux/blob/master/simplemux-mips

Copy the simplemux file and run it normally in the vm:

```
./simplemux-mips -i tun0 -e eth0 -c 192.168.1.17 -M T
```

```
Webfig 192.168.88.1 - Google Chrome
 192.168.88.1/webfig/terminal.html?u8=4&s9=3
 root@metarouter:~#
 root@metarouter:~#
root@metarouter:~#
 root@metarouter:~#
root@metarouter:~#
 root@metarouter:~#
 root@metarouter:~#
 root@metarouter:~#
 root@metarouter:~#
 root@metarouter:~#
 root@metarouter:~#
 root@metarouter:~#
 root@metarouter:~#
 root@metarouter:~#
root@metarouter:~# openvpn --mktun --dev tun0 --user root
Sun Jan 4 17:05:06 1970 TUN/TAP device tun0 opened
Sun Jan 4 17:05:06 1970 Persist state set to: ON
 root@metarouter:~#
 root@metarouter:~#
 root@metarouter:~# ./simplemux-mips -i tun0 -e eth0 -c 192.168.1.17 -M T -d 2 -r
debug level set to 2
Successfully connected to interface for native packets tun0
 Local interface MTU: 1500
                                       Local IP for multiplexing 192.168.1.1
Socket for multiplexing open. Remote IP 192.168.1.17. Port 55555
Socket for feedback open. Remote IP 192.168.1.17. Port 55556
 Multiplexing policies: size threshold: 1472. numpackets: 1. timeout: 0.00. period: 0.00
ROHC Bidirectional Optimistic Mode
ROHC compressor created. Profiles: Uncompressed. IP-only. IP/UDP. IP/UDP-Lite. RTP (UDP ports 1234, 36780
  33238, 5020, 5002). ESP. TCP
 ROHC decompressor created. Profiles: Uncompressed. IP-only. IP/UDP. IP/UDP-Lite. RTP. ESP. TCP.
```