Pre Client Node Configuration

**BE SURE YOU ALWAYS HAVE AN ANTENNA PLUGGED IN WHEN THE MODEM IS POWERED ON**

# Quick read

<http://wiki.mikrotik.com/wiki/First_time_startup>

If the router has been previously configured, 192.168.88.1 may not be available. And you will have to download Winbox from the internet.

# Download Winbox

Down load the latest version of Winbox from link on the website above. The link is under the Winbox section “Latest winbox version can be downloaded from our demo router.”

I liked using the downloaded version of Winbox on my computer better than the one at 192.168.88.1. There should be no functional differences but I liked the screen resolution better.

[Client Node Configuration](https://www.hamwan.org/t/tiki-index.php?page=Client+Node+Configuration)

Source

[HamWAN](https://www.hamwan.org/t/tiki-index.php?page=HamWAN&structure=HamWAN) » [Wiki Home Page](https://www.hamwan.org/t/tiki-index.php?page=Wiki+Home+Page&structure=HamWAN) » [Network Engineering](https://www.hamwan.org/t/tiki-index.php?page=Network+Engineering&structure=HamWAN) » [Client Node Configuration](https://www.hamwan.org/t/tiki-index.php?page=Client+Node+Configuration&structure=HamWAN)

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# -1. Upgrade your modem to the latest RouterOS v6.

1. [Download area](http://www.mikrotik.com/download)(external link) or [RouterOS 6.7 direct link](http://download2.mikrotik.com/routeros/6.7/routeros-mipsbe-6.7.npk)(external link). *(note: my computer would not let me access the internet using the wireless modem when the 5shpn was connected. I downed loaded the latest Router OS and saved it in a temp folder.)*
2. Connect to the router using [winbox](http://download2.mikrotik.com/winbox.exe)(external link). The WinBox application above is a GUI tool for configuring the router. To auto-discover your modem, click the **[...]** button and then double click on the MAC address (not the 192.168.88.1 IP address) that comes up. This will force Winbox to use a Layer 2 protocol, not dependent on IP settings. If you double click on the IP address, Winbox will use a Layer 3 protocol, and any IP changes you make might disconnect you. Default login = admin and password is blank.
3. Click on "Files".
4. Drag and drop the file you downloaded in step 1 above into the Files window.
5. After the transfer is done, simply reboot the router by clicking System -> Reboot. (I had to recycle power to get it to take.)

**The instructions below are meant to be entered from the command line interface to the router. You can open a command line in WinBox by clicking on "New Terminal"**. I used copy and paste because my typing is bad. I used ctrl-C to copy the commands in this document but in Winbox I had to use right-click-paste.

# -2. Give your modem an identity, and describe where it's linking to. For example:

Site locations can be found at HamWAN->Radio Frequency Engineering->sites.

Identity of AE7SJ's modem linked to the Paine Field cell site.

/system identity

set name=AE7SJ-Paine *(change to your identity)*

# -3. Set a password for the admin user using winbox.

**NOTE: NEVER** type passwords using the command line interface (SSH/Terminal/Telnet). There is a known security breach here.

Click System -> Users -> Users tab -> double click admin -> Password...

# -4. To support shared administration,

Add the following HamWAN Network Administration accounts into the "full" group using winbox. Usernames are case sensitive. For the passwords, pick whatever secure password you like. Password authentication will never be used when HamWAN accesses your modem.

eo

NQ1E

nigel

osburn

monitoring (Read ONLY! group=read)

# -5. To support shared administration,

add SSH keys for the HamWAN Network Administration accounts.

Download and save each key attached to the bottom on this page.

Drag and drop it into the Files window on your modem.

Import SSH keys and associate them with the right accounts

/user ssh-keys

importimport public-key-file=key-dsa-eo.txt user=eo

import public-key-file=key-dsa-NQ1E.txt user=NQ1E

import public-key-file=key-dsa-nigel.txt user=nigel

import public-key-file=key-dsa-osburn.txt user=osburn

import public-key-file=key-dsa-monitoring.txt user=monitoring

*I had problems because I had inadvertently copied the link and not the file.*

# -6.Remote Logging

/system logging action set 3 bsd-syslog=no name=remote remote=44.24.255.4 remote-port=514 src-address=0.0.0.0 syslog-facility=daemon syslog-severity=auto target=remote

/system logging add action=remote disabled=no prefix="" topics=!debug,!snmp

# -7. SNMP Monitoring

/snmp set enabled=yes contact="#HamWAN on irc.freenode.org"

/snmp community set name=hamwan addresses=44.24.255.0/25 read-access=yes write-access=no numbers=0

# -8. Clear firewall filter rules

/ip firewall filter

remove [find]

# -9. Set the HamWAN Maximum Transmission Unit (MTU) policy

/ip firewall mangle

add action=change-mss chain=output new-mss=1378 protocol=tcp tcp-flags=syn tcp-mss=!0-1378

add action=change-mss chain=forward new-mss=1378 protocol=tcp tcp-flags=syn tcp-mss=!0-1378

# -10. Remove local DHCP server

/ip dhcp-server

remove [find]

/ip dhcp-server network

remove [find]

# -11 Remove local IP address

If you are connect to 192.168.88.1 the next commands will disconnect from the router

/ip address

remove [find]

# -12. Disable DNS service

/ip dns

set allow-remote-requests=no

# -13. Add HamWAN sector channels

/interface wireless channels

add band=5ghz-onlyn comment="Cell sites radiate this at 0 degrees (north)" frequency=5920 list=HamWAN name=Sector1 width=5

add band=5ghz-onlyn comment="Cell sites radiate this at 120 degrees (south-east)" frequency=5905 list=HamWAN name=Sector2 width=5

add band=5ghz-onlyn comment="Cell sites radiate this at 240 degrees (south-west)" frequency=5890 list=HamWAN name=Sector3 width=5

# -14. Configure the modem to announce your callsign and location

/interface wireless

set 0 radio-name="KE7JL/RosePoint-Kirkland-Capitol-Parkl"

# For example, set 0 radio-name="AE7SJ/Monroe-Paine"

# -15. Configure the wireless card to use HamWAN

/interface wireless

set 0 disabled=no frequency-mode=superchannel scan-list=HamWAN ssid=HamWAN wireless-protocol=nv2

If you get an error of "input does not match any value of name", re-run the set command WITHOUT the scan-list=HamWAN parameter. Use winbox to set the scan-list to HamWAN instead. This is a suspected bug.

# -16. Tell your modem to pull DHCP, including default gateway, from HamWAN

/ip dhcp-client

add add-default-route=yes dhcp-options=hostname,clientid disabled=no interface=wlan1

ERROR *[admin@KE7JL-Capitol-Park] /ip dhcp-client>> add add-default-route=yes dhcp-options=hostname,clientid disabled=no interface=wlan1*

*failure: dhcp-client on that interface already exists*

# -17 OPTIONAL: Tell your modem to pull DHCP without default gateway or DNS from your LAN as well

/ip dhcp-client

add add-default-route=no use-peer-dns=no dhcp-options=hostname,clientid disabled=no interface=ether1

# -18. Point your dish at any cell site and look for beacons. Optimize for best signal.

/interface wireless scan 0

# -19. When signal is optimized, stop scanning and verify you have an association with the cell site

/interface wireless monitor 0

# -20. Verify you can reach the Internet using HamWAN/

/tool traceroute 8.8.8.8

# -21. Verify you can resolve DNS

/ping google.com

# -22. OPTIONAL: Integrate HamWAN routing into your LAN

Configure a Windows workstation to use your new modem

route ADD 44.0.0.0 MASK 255.0.0.0 <ether1 IP of your modem>

# -23.OPTIONAL: Work around a RouterOS route cache bug until it's fixed upstream

Set the router to auto-reboot when route cache gets to 70% of capacity

/system script

add name=route-cache-fix policy=ftp,reboot,read,write,policy,test,winbox,password,sniff,sensitive,api source=":l\

ocal percentused ((100 \* [/ip route cache get cache-size]) / [/ip route cache get max-cache-size])\

\n:log info \"RouteCacheUsed: \$percentused %\";\

\n:if (\$percentused > 70) do={ log info \"Route Cache Above Threshold. Rebooting.\"; /system reboot; };"

/system scheduler

add interval=1d name=route-cache-fix on-event=route-cache-fix policy=\

ftp,reboot,read,write,policy,test,winbox,password,sniff,sensitive,api start-time=startup

[Source](https://www.hamwan.org/t/tiki-pagehistory.php?page=Client+Node+Configuration&source=0)[5 files attached (Hide)](https://www.hamwan.org/t/tiki-index.php?page=Client+Node+Configuration&structure=HamWAN#attachments)

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| List of attached files | | | | | | |
| [ID](https://www.hamwan.org/t/tiki-index.php?page=Client%20Node%20Configuration&offset=&sort_mode=attId_desc&atts_show=y#attachments) | [Name](https://www.hamwan.org/t/tiki-index.php?page=Client%20Node%20Configuration&offset=&sort_mode=filename_desc&atts_show=y#attachments) | [desc](https://www.hamwan.org/t/tiki-index.php?page=Client%20Node%20Configuration&offset=&sort_mode=comment_desc&atts_show=y#attachments) | [uploaded](https://www.hamwan.org/t/tiki-index.php?page=Client%20Node%20Configuration&offset=&sort_mode=created_asc&atts_show=y#attachments) | [Size](https://www.hamwan.org/t/tiki-index.php?page=Client%20Node%20Configuration&offset=&sort_mode=size_desc&atts_show=y#attachments) | [Downloads](https://www.hamwan.org/t/tiki-index.php?page=Client%20Node%20Configuration&offset=&sort_mode=hits_desc&atts_show=y#attachments) | Actions |
| 148 | txt[key-dsa-monitoring.txt](https://www.hamwan.org/t/tiki-download_wiki_attachment.php?attId=148&page=Client%20Node%20Configuration&download=y) | HamWAN Monitoring DSA SSH key | 2013-12-04 12:41 by [nigelvh](https://www.hamwan.org/t/tiki-user_information.php?userId=295) | 610 b | 55 | [View](https://www.hamwan.org/t/tiki-download_wiki_attachment.php?attId=148)[Download](https://www.hamwan.org/t/tiki-download_wiki_attachment.php?attId=148&download=y) |
| 140 | txt[key-dsa-osburn.txt](https://www.hamwan.org/t/tiki-download_wiki_attachment.php?attId=140&page=Client%20Node%20Configuration&download=y) | W7RSZ DSA SSH key | 2013-09-25 12:59 by BartKus | 607 b | 50 | [View](https://www.hamwan.org/t/tiki-download_wiki_attachment.php?attId=140)[Download](https://www.hamwan.org/t/tiki-download_wiki_attachment.php?attId=140&download=y) |
| 123 | txt[key-dsa-NQ1E.txt](https://www.hamwan.org/t/tiki-download_wiki_attachment.php?attId=123&page=Client%20Node%20Configuration&download=y) | NQ1E DSA SSH key | 2013-08-29 20:15 by BartKus | 597 b | 64 | [View](https://www.hamwan.org/t/tiki-download_wiki_attachment.php?attId=123)[Download](https://www.hamwan.org/t/tiki-download_wiki_attachment.php?attId=123&download=y) |
| 120 | txt[key-dsa-nigel.txt](https://www.hamwan.org/t/tiki-download_wiki_attachment.php?attId=120&page=Client%20Node%20Configuration&download=y) | K7NVH DSA SSH key | 2013-08-29 17:27 by BartKus | 595 b | 64 | [View](https://www.hamwan.org/t/tiki-download_wiki_attachment.php?attId=120)[Download](https://www.hamwan.org/t/tiki-download_wiki_attachment.php?attId=120&download=y) |
| 119 | txt[key-dsa-eo.txt](https://www.hamwan.org/t/tiki-download_wiki_attachment.php?attId=119&page=Client%20Node%20Configuration&download=y) | AE7SJ DSA SSH key | 2013-08-29 17:01 by BartKus | 607 b | 58 | [View](https://www.hamwan.org/t/tiki-download_wiki_attachment.php?attId=119)[Download](https://www.hamwan.org/t/tiki-download_wiki_attachment.php?attId=119&download=y) |