

# Config Table of Contents

**List of devices we use and links to standard configs and firmware. Serves as a table of contents to easily find config pages.**

**Important:** Note that we use a **Network Number** (or **NN**) from now on to configure devices. The **Network Number** is not the Install Number (or request number) you received when registering. You can find out your **NN** using your Install Number (request number) received by email when you registered. To find out what is your NN please see [Network Number](#)

## LiteBeam / LiteBeam-LR

All supernode and hub clients use DHCP for the IP address and use WPA password:nycmeshnet

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## LiteBeam client for Supernodes and hubs with sectors

First, download the [WA firmware](#) in case your LiteBeam is running an outdated version. We currently recommend 8.7.11 for new installs in our network. Do not use 8.7.4 or 8.7.5 as there are bugs that break connectivity after several days.

Second, download the config file for either a standard [LiteBeam](#) or [LiteBeam LR](#). You will need your network number which is obtained by entering your Install Number below (you should have received this your email after completing the [join form](#)). If `error: no address for ****` is displayed, please reach out to us on [Slack](#) at #install or via [email](#) to register your installation. If `Sorry, unable to open the file at this time` is displayed, try using Incognito Mode or Private Browsing.

Install Number: [More Information](#)

Plug in LiteBeam to PoE and connect via management wifi- SSID- "LBE-5AC-Gen2:...." or "NBE..." (booting turns on wifi for 15 minutes)

Go to <https://192.168.172.1> in your browser if your device does not automatically redirect you. You may be met with a warning due to a self-signed security certificate, which you can bypass.

At the "Please Set Up Your Device" prompt, select `United States` under Country and `English` under language. Select the Terms of Use checkbox and click `Upload Backup Configuration`. Chose the `.cfg` file you downloaded from Configgen.

You will see a prompt on the top-right corner of the screen saying `Configuration backup file uploaded.` Select `Apply` and wait a minute for the page to reload. Sometimes you will have to refresh the page to get back into the interface.

The username/password will be changed. Please mention your network number and that you're looking for the new credentials on Slack in `#diy-install-support`, and they will be sent to you.

**Please do not share them publicly!**

To pair with the supernode or hub, go to Settings>Wireless and click the SSID "SELECT..." button. This will do a scan. Click the button next to the best AirMac AC signal. (-80 is bad, -50 is good, -62 is typical) Click "SELECT" and then "SAVE CHANGES" (twice if necessary)

**Troubleshooting:** If you are unable to log into the LiteBeam, reset it to factory defaults- press and hold the Reset button for more than 10 seconds while the LiteBeam is already powered on.

What the config file does: The config file sets DHCP for the IP address, WPA password: nycmeshnet, adds the building number to the device name, adds the UNMS key for monitoring and sets the SNMP location and contact to "nycmesh".

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# Standard Omnitik mesh config

## 1. Download Stable Firmware and Generate Configuration

**Don't use version 7** of firmware. It won't work! Use 6.47.x

==> You will need your **Network Number** or **NN**. You can find out your NN using your Install Number (request number) received by email when you registered. To find out what is your NN please see [Network Number](#)

1. Download the latest stable v6 firmware - see [Mikrotik Firmware](#).
2. Generate a configuration file for your Network Number by going to the NYC Mesh configuration generator. [Configgen](#). Type in the network number and click "Download Config". For SXTsq config file [see below](#)

## 2. Connect to the Router

1. To connect to the Omnitik wirelessly, find the router's SSID and connect to it. (For SXTsq connect via cable)
2. To connect with a cable, plug one end of a patch cable into the Omnitik's Port 2 and the other end into your computer's LAN port. Set your computer to DHCP (automatic) and it will get an address like 192.168.88.xxx.
3. Navigate to the default Mikrotik IP [192.168.88.1](#) in your web browser. This will open the Mikrotik GUI. The default username is admin and there is no password.

## 3. Upload Firmware

1. Open the Mikrotik GUI in your browser.

2. Click "Webfig" in the top right corner.
3. Click "Files" in the left side menu.
4. Click "Choose File" at the top.
5. Navigate to where you saved the firmware, select the file and click "Open". You will see the file appear in the interface.
6. Wait for the firmware to fully upload (you will see the upload progress in the bottom left corner). This firmware will automatically be installed when you reboot with the new configuration (see next section).

#### 4. Upload Configuration

1. If you are using a Mac or Linux operating system, go into Terminal, navigate to the folder where you've saved the config and enter the following command:

```
scp -o StrictHostKeyChecking=no rooftop-ospf.rsc admin@192.168.88.1: flash/
```

2. If you are using a Windows operating system, go into Command Prompt, navigate to the folder where you've saved the config and enter the following command. You must download pscp.exe from [PuTTY](#) (64-bit or 32-bit) to the same folder then run:

```
pscp -scp rooftop-ospf.rsc admin@192.168.88.1: flash/
```

3. If asked "Dangerous Reset anyway?" type in Y and return/enter.
4. Reopen the Mikrotik GUI in your web browser and navigate back to "Files" as described in section 3 above. You should see the config file you just uploaded.
5. Click "System" in the left side menu.
6. Click "Reset Configuration" in the left side menu dropdown. Select:
  - No Default Configuration
  - Run After Reset: flash/rooftop-ospf.rsc (click the popup on the right to select this)
7. Click "Reset Configuration"
8. The Omnitik will now reboot (and install new firmware if you uploaded it). If it plays some beeps, ending with a short tune [Kernkraft 400](#), the configuration was a success!

The Omnitik IP address has changed to a 10.69.x.x address. This is generated from the network number, e.g. for network number 1234 the IP address will be 10.69.12.34

#### 5. Change the Password

1. Click "System" in the left side menu.
2. Click "Password" in the left side menu dropdown.
3. Type in the standard NYC Mesh password.

## 6. Force on POE for a LiteBeam

A typical install also has a LiteBeam on port 5 that is powered from the OmniTik. To do this you must-

1. Go to Webfig>interfaces>ether5
2. Change "POE Out" to "forced on"

Other devices can be powered from other ports if you change this setting

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# OmniTik mesh config with WinBox

You can configure OmniTik routers and all MikroTik equipment with their WinBox software and associated app.

## 1. Download WinBox and other files

First you will need to download a WinBox-compatible client to configure the OmniTik.

### Windows

On the [MikroTik website](#), you can navigate to the WinBox button to download the version of WinBox that suits your computer.

### macOS

Joshaven Potter has compiled a version of WinBox with Wine which you can download [from their website](#) and run without any additional configuration.

### Android

The MikroTik Pro app uses the same WinBox protocol to upload files and configure your router without a computer. You can download it from the [Play Store](#).

### iOS

The MikroTik app uses the same WinBox protocol to upload files and configure your router without a computer. You can download it from the [App Store](#).

Next you need to download new firmware from the [MikroTik website](https://mikrotik.com/download). In the RouterOS table, find the `MIPSBE` section and click on the floppy icon that corresponds with the "Main package" and "Stable" categories. You should see the downloaded file named `routeros-mipsbe-\*\*\*.npk`.

Lastly you will need to download the network configuration specific to your location. After completing the [join form](#) you should have received an email containing your Install Number. Enter this number below. If `error: no address for ****` is displayed, please reach out to us on [Slack](#) at #install or via [email](#) to register your installation. If `Sorry, unable to open the file at this time` is displayed, try using Incognito Mode or Private Browsing.

Install Number: [More Information](#)

Once you have your Network Number, go to the [Configgen utility](https://configgen.nycmesh.net/?device=Omnitik5AC&template=rooftop-ospf.rsc.tmpl) and enter the number into the "network\\_number" field and click "Download Config". You should see the downloaded file named `rooftop-ospf.rsc`. If the file has a `.csv` extension, rename the file to remove the extension so that it ends in `.rsc`.

## 2. Connect to the router

You can connect to the router using an Ethernet cable or through Wi-Fi. There are caveats to both, but configuring wirelessly is the easiest to do when doing the install outside.

### Wired

Assuming your Ethernet adapter is setup to get an IP from the router using DHCP (probably default), all you have to do is plug an Ethernet cable from your computer to a Port 2-4 on the router.

Do NOT plug the computer into the PoE injector (Port 1) as the default configuration blocks all inbound connections to this port, including WinBox.

Do NOT plug the computer into Port 5, as we may be configuring this later to do PoE-Out which will damage any devices plugged in here that are not expecting power.

### Wireless

Assuming your Wi-Fi adapter is setup to get an IP from the router using DHCP (probably default), all you have to do is look for a network in your Wi-Fi settings named `MikroTik-xxxxx`. This network will only appear after the router has fully powered on (two short beeps).

If you are on a phone, sometimes you will have to turn off your Mobile data/turn on airplane mode in order to reach the router that technically does not have any internet yet.

Make sure any VPN software you have is disabled at this point, as it will likely block any connections to the router.

From your WinBox software, find the "Neighbors" tab on the lower-half of the screen. On the MikroTik app, click on the "Discover" tab. You should see an entry on the list with Identity `MikroTik`. If you do not see anything, click "Refresh" or swipe down to rescan for devices. Double-check your connections and confirm you are getting an IP from the router (will be in the `192.168.88.xxx` range).

Double-click or tap on the entry to load the IP into the software. On the App, you will be prompted to select either MAC or IP; select IP. Now, the default login `admin/[no password]` will be displayed and you can hit "Connect".

You will get a prompt saying "RouterOS Default Configuration". Hit OK to get out of here (do NOT remove configuration or use quick setup). Now for the fun part.

### 3. Upload the configuration

On the sidebar (hamburger menu on mobile), click Files. Here is where we will upload those files from earlier.

From your WinBox software, drag and drop the `routeros-mipsbe-***.npk` file into the blank space in the window. You should see the file transfer take a few seconds before it finishes. Next, drag and drop the `rooftop-ospf.rsc` file onto the flash folder. You should see the uploaded file labeled `flash/rooftop-ospf.rsc`.

From your phone, hit the upload arrow button on the bottom-left of the screen and select the `routeros-mipsbe-***.npk` file. You can save as the original name and hit OK. You should see the file transfer take a few seconds before it finishes. Next, do the same with the `rooftop-ospf.rsc` file, but this time make sure you prepend the file name with `flash/` and hit OK. You should see the uploaded file labeled `flash/rooftop-ospf.rsc`.

### 4. Flash the config and party

On the sidebar (back button on mobile), click "System". Find the "Reset Configuration" option. Select the "No Default Configuration" checkbox, and under "Run After Reset", use the arrows to drop down the menu to reveal the files. Select `flash/rooftop-ospf.rsc`, and finally hit "Reset Configuration". The software will now disconnect and nothing will happen for a while; the router is upgrading the firmware. After you hear the two beeps and some music the configuration is complete.

## 5. Confirm settings and configuration

WinBox will inform you that the router has been disconnected. Hit Cancel. If you are connecting wirelessly, look in your Wi-Fi settings for `nycmesh-****-omni`. Connect to that wireless network with the password `nycmeshnet`. If you are connecting via Ethernet, you can test this on another device to make sure the Wi-Fi is working correctly. If you are not planning on adding devices or changing the configuration further, you are done! ☐☐

If you are planning on connecting a LiteBeam to your router or just want to learn about the configuration, go back to "Neighbors" or "Discover" depending on your platform; you should see an entry on the list with Identity "nycmesh-\*\*\*\*-omni". Login to it like before.

On the sidebar (hamburger on mobile), click "Interfaces" (then "Ethernet" on mobile). Double-click or tap on `ether5`. Click on the PoE tab, and change the "PoE Out" drop-down from `auto on` to `forced on`. Hit OK or the checkmark button on mobile. This improves reliability for connected PoE devices.

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# LiteAP 120 sector

Connect to the LiteAP GUI. Upgrade the firmware

In Wireless set:

- Wireless mode to **Access Point PtMP airmax AC**
- SSID "nycmesh-xxxx-direction" (for exemple: nycmesh-1635-east)
- channel width 40 Mhz
- Control Freq. ON
- Select all freq. and uncheck from 5565 to 5705 (5565 and 5705 included), as well as some other assorted frequencies.
  - Just paste in the following, rather than doing manual checkbox selection:  
`5220, 5225, 5230, 5240, 5260, 5265, 5270, 5275, 5280, 5285, 5290, 5295, 5300, 5305, 5310, 5315, 5320, 5325, 5330, 5485, 5490, 5500, 5505, 5510, 5515, 5520, 5525, 5530, 5535, 5540, 5545, 5550, 5555, 5560, 5710, 5740, 5745, 5750, 5755, 5760, 5765, 5770, 5775, 5780, 5785, 5790, 5795, 5800, 5805, 5810, 5815, 5820, 5825, 5830, 5835`
  - (This is **extremely important**. Due to FCC regulations in NY, we need to make sure to not use any channel overlapping 5590 - 5677)
- choose a center freq. different then other local antenna (sector, litebeam, powerbeam, etc ...)
- Wireless Security: WPA security personal / Preshared key: nycmeshnet
- TDD framing: Flexible (or Flexibe (new) depending on firmware)
- ReSE ON
- Advanced: Isolation ON
- Advanced: Automatic Power Control (APC) should be enabled if available and set to Reliable (Minimal and Maximum are the other options). This setting may only be available in newer firmwares (8.7.13 from 2024 for example, but not 8.5.12 from 2019)



In Network set:

- DHCP and fallback IP 192.168.1.20

In Services:

- Add UNMS key

In System set:

- Device name: same as SSID
  - turn NTP server ON
  - Set the time zone
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