

Meshcore

Introduction

From  [Wikipedia](#):

MeshCore is an open-source mesh networking protocol and software platform designed for off-grid, low-power text communication using LoRa (Long Range) radio technology. The system enables decentralized, multi-hop wireless messaging without reliance on cellular networks or internet infrastructure.

Use cases include emergency and disaster communications, outdoor and remote activities, [...] and experimental and educational deployments of low-power mesh networking.

[It] is designed to [...] operate in unlicensed  [ISM frequency bands](#) such as 868 MHz and 915 MHz, depending on regional regulations.

The basic idea is that you get a small *companion device* that you pair to your cell phone via bluetooth, and via that device, you can text others or post public messages using the 915 MHz band, all without a special license.

Getting Started: Companions

- Get a companion device like:
 - the *Wio Tracker L1 Pro* from [seeed studio](#) or from [Robot Shop](#)



- : add other options here
- Flash the device with the latest Meshcore Firmware.
- Pair the device with your phone.
- Set up your device and add contacts.

- On linux, you may have to add the dialout group to your user. To do that, type the following in the terminal replacing USER with your username and reboot your computer:

```
sudo usermod -a -G dialout USER
```

- You should also use a Chromium based web browser.

If you already have Meshcore installed , download your current settings:

- Open the MeshCore app ([Android](#), [iOS](#), [Web App](#), [NodeJS](#), [Python](#))
- Navigate to the Settings (the gear in the top right corner)
- Scroll down to the Extra Tools section and select Export Config
- Select All and click on the check mark in the top right corner to save the .json file to your phone.

Flash the Meshcore Firmware:

- Connect the companion device to your computer via USB.
- Go to <https://meshcore.io/flasher> (using a Chromium Browser).
- Select your device
- Select Companion Bluetooth
- Select Enter DFU Mode
- Select Erase Flash
- Select Flash

To re-load the config file:

- Open the MeshCore App
- Connect to the companion device, but it probably had a different bluetooth name now
- The PIN might be listed on your companion's screen
- Skip Setup
- Navigate to the Settings (the gear in the top right corner)
- Scroll down to the Extra Tools section and select Import Config
- Click on Select File
- Select the *.json file
- Select All and click on the check mark in the top right corner.

See [Scott Baker's article](#) for more information.

Next Step: Repeaters

- Install a repeater like the *SenseCAP Solar Node P1-Pro* from [seeed studio](#) or [RobotShop](#)
- Use an antenna like [this one](#), [this one](#) or [one of these](#).

If you already have Meshcore installed (but not the bootloader), download your current settings:

- Go to <https://config.meshcore.io/>
- Connect your device to your computer with a USB cable.
- Click on Connect
- Click on Export
- Click on Disconnect
- Locate the .json file (probably in your Downloads folder).

Download the bootloader:

- Go to <https://meshcore.io/flasher>
- Select your device
- Select Repeater (or Room Server)

- Click on Download
- Select the *bootloader-x.x.x-0TAFIXx.x.uf2 file
- Locate the .uf2 file (probably in your Downloads folder).

Copy the bootloader over to your device:

- Connect your device to your computer with a USB cable.
- Double click on the reset button.
- Open the drive that just mounted on your computer
- Copy the .uf2 file to the drive.
- The drive may close on its own right away. This is normal.

Flash the Meshcore Firmware:

- Go to <https://meshcore.io/flasher>
- Select your device
- Select Repeater (or Room Server)
- Select Enter DFU Mode
- Select Erase Flash
- Select Flash

Re-upload your settings:

- Select Configure via USB from the previous page, or navigate to <https://config.meshcore.io/>
- Select Connect
- Select Import
- Select your .json file
- Scroll down to the Access section and retype your New Admin password (it doesn't remember it)
- Scroll down and select Save settings
- Select Disconnect

Setup the Over the Air (OTA) update app (first time only):

- Download the “nRF Device Firmware Update” app by “Nordic Semiconductor ASA” ([Android](#), [Apple](#))
- Open the DFU app
- In the settings, check Packet receipt notification

Perform an OTA update:

- Using your phone's browser, navigate to <https://meshcore.io/flasher>
 - Select your device
 - Select Repeater (or Room Server)
 - Select Download
 - Select the firmware zip file (**not** the bootloader file)
- Using the Meshcore app, login to your repeater (or room server) using the admin password.
 - For Room Servers: go to Remote Management

- Go to the Command Line
- Type `start_ota`, you should get a message that says: `OK - mac: xx:xx:xx:xx:xx:xx`
- Open the DFU app
 - Under File click Select to chose the firmware .zip file
 - Under Device click Select and chose the device that has DFU in the name. If there are no device with DFU in the name select the device with OTA in the name.
 - Under Progress click Start
 - If you selected a device with OTA, the process will fail at DFU initialization. Not to worry, go back to the previous step and now you should be able to select a device with DFU in the name.

See [Scott Baker's article](#) for more information.

More Advanced: Sensors

- Install [sensors](#).

Maps

- [Official MeshCore Node map](#)
- [Community generated map](#)
- [SWBC Map with links](#) by VE7KOD



Here's how to use MeshCore's Antenna Coverage tool to model line of sight coverage:

- Navigate to the [web version of the MeshCore App](#)
- You don't need to connect to an actual Meshcore device.
- Click on `\$ \quad \vdots \quad \$` on the top right corner and then select Tools
- Enter the Antenna Coverage tool
- Where it says `0 Coverage Layers` click on `\$ \quad \vdots \quad \$` and select Import JSON

- Import

this file

Tools

- [MeshCore Analyser](#)
- [Path Profiler](#)

Resources

- Official MeshCore [Website](#) and [Github](#)
- [Youtube Presentation by Liam Cottle](#)
- [Scott Baker's Website](#)
- [Vancouver Island Amateur Radio Discord Meshcore tips & Tricks](#) **NEW**
- [Salish Mesh Website](#)
- [Forum](#)
- [MeshCore vs Meshtastic](#)
- [Channels vs Rooms vs DMs](#)