

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](#) (using a chromium browser).
- Install the Meshcore app on your phone. ([Android](#), [iOS](#), [Web App](#), [NodeJS](#), [Python](#))
- Pair the device with your phone.
- Turn off Auto-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:

```
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
- 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.
 - Under Progress click Start

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](#)