

# Updating The TP-Link CPE210 With AREDN Firmware

The first thing you'll want to do is to download the AREDN firmware for your device which is available here:

<http://downloads.arednmesh.org/firmware/html/stable.html>

Note: when you click on the link above the table below will appear on your screen.

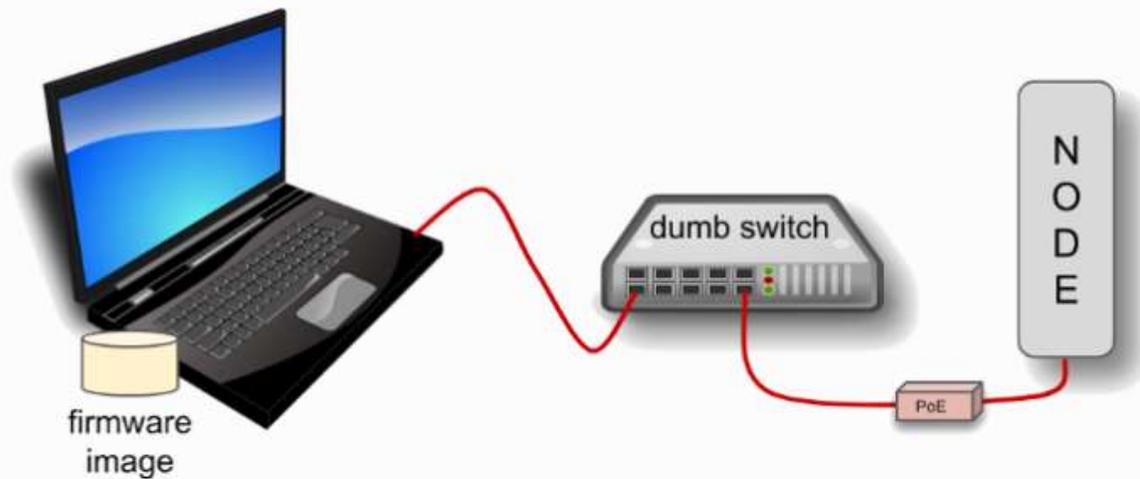
Since this is a first install, download the factory version for your CPE210. Most of us have the v2.8 model. We are using the factory install since we are using PharOS and not the AREDN UI. If there is an upgrade in the future for the CPE210, you would download the sysupgrade file since you would now be using the AREDN UI.

AREDN™ Firmware for TP-Link	NOT Loading from AREDN UI	Loading from AREDN UI
CPE210 v1.0 CPE210 v1.1	<a href="#">factory</a> File: aredn-3.21.4.0-ath79-tplink_cpe210-v1-factory.bin md5sum: f8919f97679c7b6f07ed293553984b49 Size: 6.2M	<a href="#">sysupgrade</a> File: aredn-3.21.4.0-ath79-tplink_cpe210-v1-sysupgrade.bin md5sum: 2afaa9e2ba9a2b1b97d899e5d44f363a Size: 7.5M
CPE210 v2.0	<a href="#">factory</a> File: aredn-3.21.4.0-ath79-tplink_cpe210-v2-factory.bin md5sum: c8bb957bea8eca004d14bcce590a454c Size: 6.2M	<a href="#">sysupgrade</a> File: aredn-3.21.4.0-ath79-tplink_cpe210-v2-sysupgrade.bin md5sum: 6eb3684c9c0d0369acedf2b134be8ecb Size: 7.5M
CPE210 v3.0	<a href="#">factory</a> File: aredn-3.21.4.0-ath79-tplink_cpe210-v3-factory.bin md5sum: d69d66a1921a2c4e2188fb0cf2e9293e Size: 6.2M	<a href="#">sysupgrade</a> File: aredn-3.21.4.0-ath79-tplink_cpe210-v3-sysupgrade.bin md5sum: 237696e7c20d065d14d93ce0844b3634 Size: 7.5M

The beauty of updating the CP210 is that it has its own operating system (PharOS). Before installing the firmware check out the computer and CP210 setup here:

[https://arednmesh.readthedocs.io/en/latest/arednGettingStarted/installing\\_firmware.html](https://arednmesh.readthedocs.io/en/latest/arednGettingStarted/installing_firmware.html)

It is recommended by AREDN to use an ethernet switch, but it's possible to plug directly into the CPE210. The reason they recommend the switch is that the switch will maintain the computer's network link while the node is rebooting.



## TP-LINK First Install Process

TP-LINK devices may or may not allow you to use the manufacturer's pre-installed *PharOS* web browser interface to apply new firmware images. If available, this is the most user-friendly way to install AREDN® firmware. Navigate to the system setup menu to select and upload new firmware. Check the TP-LINK documentation for your device if you have questions about using their built-in user interface. If this process works then you will have AREDN® firmware installed on your device and you do not need to follow any of the steps described below.

Assign an IP address to your computer 192.168.0.10. Next, using Chrome enter 192.168.0.254 in the address field and hit enter. This will log you in to PharOS. The user and password is **admin**. Once you've signed in, select the system tab and upload the file you downloaded earlier.

The screenshot shows the TP-Link PHAROS web interface with the 'SYSTEM' tab selected. The interface is divided into several sections:

- Device:** Device Name: CPE210, Language: English. An 'Apply' button is present.
- Location:** Longitude: 0, Latitude: 0. An 'Apply' button is present.
- User Account:** Current User Name: admin, Current Password: [password], New User Name: [input], New Password: [password], Confirm New Password: [password]. 'Show' checkboxes are visible. An 'Apply' button is present.
- Time Setting:** Time Zone: (GMT+08:00) Beijing, Urumqi, Hong, Date: 2015/01/02, Time: 02:04:53, NTP Server 1: [input], NTP Server 2: [input]. Buttons for 'Get GMT', 'Synchronize with PC's Clock', and 'Daylight Saving Time: Setting' are present. An 'Apply' button is present.
- Firmware Update:** Firmware Version: 2.1.6 Build 20170908 Rel. 45233 (0000). Upload Firmware: [input] Browse Upload. A red arrow points to the 'Upload' button.
- Configuration:** Backup Configuration: Backup, Upload Configuration: [input] Browse Upload, Reset to Factory Defaults: Reset, Reboot Device: Reboot.

You will see a progress bar while the firmware is loading. Once done, the unit will reboot. This is where I did something a little different. I went back to my computer and changed TCP/IPv4 to obtain an IP address automatically. I then signed into the CPE210. The default sign in for AREDN is **root** for username and **hsmm** for the password. The setup screen is pretty much self-explanatory. Be sure to write down the LAN IP address that you see on the AREDN screen. If <http://localnode.local.mesh/> doesn't work to login down the road, you'll need the LAN address.

There's also a 15 minute YouTube video that steps you through the process of loading firmware to the CPE210:

<https://www.youtube.com/watch?v=Q1ZISuKyAn8&t=5s>

Once AREDN is setup, you'll want to install MeshChat. Installation information can be found here:

<http://www.trevorsbench.com/meshchat-messaging-for-mesh-networks/>

All the curl packages are already installed, so just download and install mesh chat.

[https://s3.amazonaws.com/aredn/meshchat\\_1.02\\_all.ipk](https://s3.amazonaws.com/aredn/meshchat_1.02_all.ipk)

That's about it. This is the process I used for the 2 units I programmed.

If I missed something, email me.

Steve/N7LNX

N7LNX@westseattlearc.org