

[Skip to main content](#)

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## Guide to installing OpenWRT on the \$20 Linksys LN1301/MX4300

Two weeks ago, I made a [post](#) about the Linksys LN1301 Tri-Band AX4200 WiFi 6 Wireless Router ([still available](#) on Amazon for \$20, still a great deal!) and, shipping was slow, but people are receiving them in the mail now! This router does not yet have official OpenWRT support merged in yet (we are waiting for [this PR](#) to be merged), so there's a lot of confusion on how to get OpenWRT working using community builds. Luckily, davidlucking made an [excellent post](#) on the OpenWRT forum summarizing everything you need to know about these units, and I've copied it below:

There are two variants of the LN1301 router: Homewrk and MX4300. They have different bootlog, u-boot environments, and mtd maps and requires different OpenWRT builds. DO NOT rely on the labels on your device or shipping box to determine which one you have.

If your original firmware looks like this: [OpenWrt support for Linksys MX4200 - #1332 by wmd](#), then your router is a MX4300.

If your original firmware looks like this: [OpenWrt support for Linksys MX4200 - #1190 by Tour](#), then your router is a Homewrk.

lytr has built OpenWRT images for the MX4300 [here](#) and the HomeWRK [here](#). The file names contain the variant that they support ("homewrk", "mx4300", "mx4200v1", and "mx4200v2"). We are hopeful lytr's changes will be accepted into the main OpenWRT repository.

qosmio has developed a version with NSS, which offloads the network processing from the CPUs onto qualcomm proprietary cores. The NSS code currently only supports the MX4300 variant. arix has set up a repository with releases from both qosmio's NSS code and lytr's MX4300 code: <https://github.com/arix00/openwrt-mx4300/releases> 5. Due to the proprietary nature of the NSS code, we don't expect the changes to be accepted in the main OpenWRT repository.

Finally, installation instructions are:

1. Open Linksys Web UI - <http://192.168.1.1/> or <http://10.65.1.1/> depending on your setup.
2. Login with your admin password. The default password can be found on a sticker under the device.
3. To enter into the support mode, click on the "CA" link and the bottom of the page.
4. Open the "Connectivity" menu and upload the squash-factory image with the "Choose file" button.
5. Click start. Ignore all the prompts and warnings by click "yes" in all the popups.
6. The Wifi radios are turned off by default. To configure the router, you will need to connect your computer to the LAN port of the device.

If you don't have a graphical interface,

1. Connect the router to the internet.
2. SSH into the router: ssh [192.168.1.1](#)

[Skip to main content](#)[+ Create](#)

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partition and you can use that without modifying the second partition. If you want to load the OpenWRT onto the second partition, the instructions are:

1. SSH into the router: ssh [192.168.1.1](#)
2. Check booted partition, by running: fw\_printenv -n boot\_part
3. SCP the squashfs-factory.bin onto the router.
4. If that command returns a "1", then you can install OpenWRT onto the alternate partition by running: mtd -r -e alt\_kernel -n write openwrt-qualcomm-ipq807x-linksys\_mx4300-squashfs-factory.bin alt\_kernel
5. If that command returns a "2", then you can install OpenWRT onto the primary partition by running: mtd -r -e kernel -n write openwrt-qualcomm-ipq807x-linksys\_mx4300-squashfs-factory.bin kernel

If you mess up a partition, you can switch to the other one by power cycling the devices 3 times with less than 5 seconds between each power cycle.

If you want to go back to the original firmware at any point, you can download it here:

<https://linksys.happyfox.com/kb/article/1003-en/3>

([source](#))

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Some additional notes:

- There has been mixed information on whether or not NSS makes a difference. If anyone has tested stock vs. lytr vs. qosmio-nss, let us know if you've seen any difference.
- Unlike OpenWRT, DD-WRT already has official support merged in and apparently includes NSS as well. [Here](#) is their guide.
- If you are not interested in using custom firmware yet, these routers support mesh with the stock firmware, but the USB port is disabled.
- The stock firmware is relatively new, but is speculated to not receive many, if any, updates, so it may be best to wait until custom firmware support is merged and more mature before messing with installing these community builds