

Contents

- [1 CFE Downgrade is necessary to enable flashing firmware](#)
- [2 Links: verified firmware](#)
- [3 Links to tools and other files](#)
- [4 Links: verified CFEs](#)
- [5 Procedure](#)
- [6 Entware Installation](#)
- [7 Tests to perform after installing DD-WRT firmware](#)

CFE Downgrade is necessary to enable flashing firmware

This upgrade is a little trickier than most because the procedure involves not only navigating DD-WRT firmware, but navigating the [CFE](#). The newsgroups document that CFEs are able to control / deny firmware upgrades, which is the reason for 'downgrading' to firmware that does not prevent firmware changes.

*****Updated guide to CFE Mod ***** here but doesn't mention flashing firmware

Version 2827 is firmware locked to only T-Mobile branded firmwares. Not only is the firmware locked (disabled Telnet), it installs CFE 2.1.2.2, which locks the router from any non T-Mobile branded firmware via recovery mode and GUI mode. The only way to change firmwares is to downgrade to an older T-Mobile firmware (1703 for example), enable Telnet, and then replace the CFE (preferably with an Asus RT-AC68U version - such as 1.0.2.0).

Many details in this guide including links to the older 1703 firmware and all CFE's and utilities needed

if you're on CFE 2.1.2.1, which is not locked, and try to use the latest Asus branded firmwares, it will update your CFE and, lockout out all non T-Mobile firmware's again. Once you get to DD-WRT, doesn't matter anymore unless you decide to go (back) to Asus stock RT-AC68U firmware, latest copies.

For more information see UKEE's post here.

Links: verified firmware

There are numerous choices each with its strengths. DD-WRT / Kong are filled with features. Merlin to stay as close to the original firmware to ensure maximum performance.

- **DD-WRT** builds: FIRST flash a **.trx** build from the **asus ac68u folder**, to upgrade use the **.bin** file.
[Beta downloads](#)
- **Merlin** and **Tomato** Builds: can be found in the [tmo2ac68u package](#)

[Merlin Changelog documents newest updates and firmware candidates](#)

Links to tools and other files

Asus tools to revert FW ("Engineer" or UKEE to verify this).

Links: verified CFEs

Verified: 1.0.2.0 from the tmo2ac68u package.

CFE ASUS RT-AC68U 1.0.2.0 (US).txt

CFE ASUS RT-AC68U 2.1.2.1 (US).txt (??? user to verify)

Procedure

Before starting the process, obtain the tmo2ac68u package. Tools and Firmware used in this process must be obtained and unzipped. Copy the mtdwrite utility and the target CFE to a flash drive. Fortunately, there is a (lengthy) YouTube video that demonstrates the different processes below. gatorback: because it is lengthy I skimmed through it ONLY when I was stuck. After you have installed \ downgraded T-Mobile's software, you will want to change the firmware: there is a good article discussing the various versions of firmware here.

High Level Steps:

- * Gain Telnet Access: flash TMO 1703 firmware via CFE webserver
- * Copy original CFE to USB memory stick
- * Copy data from original CFE to target CFE
- * MTD-write target CFE to boot sector
- * mtd-erase2 nvram
- * nvram get bl_version
- * Flash final target firmware via CFE Webserver

1) Enable Telnet: Place router in recovery mode and upload TMobile firmware xxx.1703 (found in tmo2ac68u package) through the CFE web UI. Enable telnet by navigating: Administration -> System -> Enable Telnet=Yes -> click 'Apply'

Alternative method: An alternative to flashing 1703 to enable Telnet Caution: If you enable telnet, then erasing the NVRAM may disable efforts that enable Telnet.

Asus_T-Mobile_Cellspot

Always perform a NVRAM reset after flashing firmware, reboot and allow 5 minutes to rebuild NVRAM variables.

* **HARDWARE NVRAM RESET:**

** Power off the router

** Hold the **WPS Button**

** Power on the router and keep the WPS pressed for 10-15 seconds

** Reboot as necessary

2) Check your CFE Version via telnet and change the CFE to 1.0.2.0. PRINT THE INSTRUCTIONS FROM THIS LINK AND CHECK OFF EACH STEP PERFORMED:

```
nvramp get bl_version
```

This process involves telnetting and copying the existing CFE to retrieve data to USB stick, paste this data into the target downgrade CFE file, and writing the modified target CFE file back to the router.

3) Place router in recovery mode and install Merlin firmware via through the CFE Webserver recovery mode (easier).

4) Perform NVRAM reset

5) Flash DD-WRT and perform NVRAM reset

6) Go to your fridge and reward yourself with your favorite beverage and add your username here:

gatorback

Entware Installation

OTRW / Optware does not work on ARM CPUs. Entware is compiled for ARM. Links are provided to Optware articles because SOME of the information may be useful.

Entware for Merlin Firmware in 3 steps:

1. Mount the ext4 formatted disk;

2. Go to router's web interface -> USB Application and install Download Master

3. Once successfully installed, uninstall it (not disable). The Optware package will remain installed

OTHER RESOURCES

- [R7000 Install Entware-ARM opkg succceccfully!](#)
- [Optware Installation Wiki](#)

- [OPTWARE per Merlin](#)
- [Install Transmission on Optware via SSH Commandline](#)
- [OTRW Package Tutorial](#)
- [Ad Blocking Script](#)

Tests to perform after installing DD-WRT firmware

- NVRAM available immediately after install
- Speed Test measurements in 2.4 and 5 Ghz bands
- Verify USB 3.0 speed measurement
- Optware (OTRW) compatibility
- Please update any other meaningful or useful test metrics / measurements