



This is only for v1 (MIPS) hardware, which has "R6300" printed on the bottom label. The R6300v2 has an *ARM SoC* and is not covered here.

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## Hardware Specs v1

<b>CPU</b>	<u>Broadcom BCM4706</u>
<b>CPU Speed</b>	600 MHz

<b>Flash ROM</b>	128 MB
<b>RAM</b>	128 MB
<b>Radios</b>	BCM4360 5 GHz & BCM4331 2.4 GHz
<b>WLAN Support</b>	a/n+ac 3x3:3 & b/g/n 3x3:3
<b>WLAN Max Speed</b>	450 Mbps on 2.4Ghz and 1300 Mbps on 5Ghz
<b>Antenna Location</b>	Internal
<b>Switch</b>	4x GigE LAN + 1 GigE WAN
<b>USB</b>	2x USB 2.0
<b>Power Adapter</b>	12VDC 5A

## Flashing Instructions

Read the [Firmware FAQ](#) (and [Peacock Announcement](#) for historical reference on Broadcom devices and related procedures).

### Initial DD-WRT Installation

NOTE: Read the entirety of this page before installation, especially the Build Info section. Builds marked as "recommended" may be outdated, and newer builds can be used once their "New Build" thread is reviewed. See [Where do I download firmware?](#) for links.

To go from stock Netgear firmware on the R6300 to DD-WRT:

1. Download trailed initial flash (**.chk**) R6300 firmware.
  1.  $\diamond$  tested 2021 build [47911](#) can be directly flashed from last OEM (V1.0.2.80\_1.0.59).  
 $\diamond$  Do not consider this a build recommendation!
2. Reset router:
  1. Turn on router, wait for Power light to go solid green.
  2. Press & hold Reset button for 20sec, or until Power light starts flashing.
  3. Release Reset button, and router should reboot with much flashing of lights.
  4. Wait for Power light to go solid green again.
3. Disconnect PC from any network (wired or wireless).
4. Connect PC Ethernet port to a router Ethernet port (*not the yellow Internet port*) with a cable, and wait for PC to be configured by router DHCP (which can take up to a full minute).
5. Open Web browser and clear cache. (Initiate by holding down Shift and Ctrl while pressing Delete.)
6. In Web browser, go to <http://192.168.1.1> or <http://www.routerlogin.net>
7. At *Configuring the Internet Connection* select *No, I want to configure the Internet connection myself.*
  - $\diamond$  Proceed through the confirmation.
8. Click on Advanced > Administration > Router Update
9. Browse to the downloaded initial trailed (.chk) build, and proceed.
  - $\diamond$  **Ignore any message that the update is older than the existing firmware, and proceed to update.**
10. After router says it is done, wait until it fully reboots and the power light is solid green again.
  - $\diamond$  **This may take several additional minutes.**
11. In Web browser, go to <http://192.168.1.1> and verify DD-WRT successfully installed.

12. Reset router (as described above), and wait for Power light to go solid green again.
13. In web browser, again go to <http://192.168.1.1> and you should see the DD-WRT create password screen.
14. Set a strong password, login, and configure DD-WRT.

## DD-WRT Upgrade

To upgrade from DD-WRT to another version of DD-WRT:

- Read forum build threads before downloading firmware and see [Where do I download firmware?](#) for links.
1. Reset router as described in [Initial DD-WRT Installation](#).
  2. Disconnect PC from any network (wired or wireless).
  3. Connect PC Ethernet port to a router Ethernet port (*not the yellow Internet port*) with a cable, and wait for PC to be configured by router DHCP (which can take up to a full minute).
  4. Open Web browser and clear cache. (Initiate by holding down Shift and Ctrl while pressing Delete.)
  5. In Web browser, go to <http://192.168.1.1> and login.
  6. Click on Administration > Firmware Upgrade
  7. Choose File to select firmware downloaded in Step 1 above, and proceed.
  8. After router says it is done, wait until it has fully rebooted and Power light has gone solid green again. (*This may take several additional minutes.*)
  9. In Web browser, go to <http://192.168.1.1> and verify DD-WRT successfully upgraded.
  10. Reset router (as described above), and wait for Power light to go solid green again.
  11. In web browser, again go to <http://192.168.1.1> and you should see the DD-WRT create password screen.
  12. Set a strong Password, Login, and configure DD-WRT.

## Return to Stock

Flashing back to stock Netgear firmware is supported. Use the DD-WRT Web interface to upload Netgear firmware using the [DD-WRT Upgrade procedure](#), and be sure to then *reset the router* as described in [Initial DD-WRT Installation](#).

## Build Information

Please note that all DDWRT builds for many years now are "beta" builds, this is due to the fact that development is ongoing. Brainslayer has not made an official "stable" build since about 2009. In most cases beta builds are as stable as and have many more fixes than official releases. Bottom line, use latest build available from [here](#) **More build info:** See [Where do I download firmware?](#)

As of September 2019, Kong has retired from DDWRT and will no longer produce builds for any routers. Kong's support for r6300v1 was dropped years before his retirement.

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## Early Limitation and NAT Acceleration

**Prior to build 33006**, DDWRT did not support accelerated NAT[1] which is required for Gigabit throughput on WAN port for this router. Internet speeds will be capped between 100 and 150 Megabit (depending on transfer type) due to CPU not being able to keep up with traffic.

This is of no concern if your ISP provides less than 100 Megabit throughput. However, even slower connections will benefit from NAT Acceleration as it will allow the router to run cooler, prolonging its life, and leave more CPU resources for other processes. Therefore ddwrt build newer than 33006 is recommended for all situations.

Since end of 2017 DDWRT has implemented "Shortcut Forwarding Engine" (Setup -> Basic Setup page).

**NOTE: After a reset to defaults or fresh DDWRT installation the option may not be there, command a restart of the router for the option to show up (NVRAM has to be re-read on reboot after a fresh factory reset boot).**

r6300v1 supports 2 versions of accelerated NAT. SFE (open source software solution and is the default selection) and CTF (Broadcom's closed source blob). CTF is much more efficient (see benchmarks below), but could cause issues.

### NAT Acceleration issues:

#### CTF

- CTF was not designed for ipv6 use, and should not be used with ipv6.
- Since CTF's addition to r6300v1 (in 2020) up to and including builds made in June 2022 CTF may introduce instability to the router, resulting in kernel panics ([see thread on the topic](#)). This issue can be verified as fixed or still existing by switching SFE to CTF, applying settings, waiting a minute for them to take hold, and switching back. Continue this process back and forth 10 times (make sure not to switch faster than once a minute). If issue is still present the router will crash and reboot.

#### SFE

- SFE is not nearly as efficient as CTF, and will start throttling at around 300 Megabit due to maxing out r6300v1's CPU (see benchmarks below). Overclocking CPU to its maximum 662Mhz does not seem to make any significant improvements.

### **BENCHMARK: NAT Acceleration capabilities of r6300v1 on 300Megabit connection as of build v3.0-r49197 (06/14/22)**

#### *speedtest.net*

- OFF - 100% CPU maximum download ~100Megabit
- SFE - 50% CPU maximum download at least 300Megabit
- CTF - 5% CPU maximum download at least 300Megabit

#### *Steam download saturation (1 minute download)*

- OFF - 190% CPU maximum download ~96 Megabit
- SFE - 130% CPU maximum download ~288 Megabit
- CTF - 20% CPU maximum download ~300 Megabit

*Conclusion:*

Note: speedtest is not representative of actual load on the CPU during large file transfers. So while it may show high speeds, they may be unachievable under sustained download of large files.

For 300Megabit connections or lower, set NAT Acceleration to *SFE*. For faster speeds CTF can be attempted; however, keep an eye on router's stability (up for 1+ month without crashing with CTF enabled is considered good). As last resort, if CTF is unstable and faster than 300 Megabit speeds are desired, you can switch back to stock firmware; however, Netgear dropped support for r6300v1 in 2017, therefore latest release may have vulnerabilities.

For more information about accelerated NAT refer to the article on this topic. As of June 2022, SFE is on by default.

\*[1] Broadcom's proprietary module is called CTF (Cut Through Forwarding), but Qualcomm's SFE (Shortcut Forwarding Engine) was open-sourced, allowing integration including to Broadcom devices (kernel 3.10+).

## Resources

### Alternative Firmware

Please note. As of June 2022 (build 2022.3) FreshTomato MIPS forks do not support SFE or CTF (see details above under Limitations). This means that your router will not be able to achieve faster than 180Megabit speeds on WAN port.

FreshTomato is the latest Tomato branch supporting the R6300v1.

- Downloads: *K26RT-AC* directories at <https://freshtomato.org/downloads/freshtomato-mips/>

Latest stable build of Duxa's mod can be found here.

### Forum Threads

- Support for Netgear R6300 / R6300v2 (CAUTION: this covers v1 and v2)
- Also check "New Build" threads for R6300 results and/or issues.