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Device Photos



Hardware

- **Platform:** Broadcom MIPS
- **CPU:** Broadcom BCM5452 at 200 MHz (130nm construction) [Broadcom Product Page](#)
 - ◆ overclocking support in DD-WRT (verified in v24 SP1)
 - ◆ `/proc/cpuinfo` output

```
system type      : Broadcom BCM947XX
processor        : 0
cpu model        : BCM3302 V0.8
BogoMIPS         : 199.47
wait instruction : no
microsecond timers : yes
tlb_entries      : 32
extra interrupt vector : no
hardware watchpoint : no
```

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```
VCED exceptions      : not available
VCEI exceptions      : not available
unaligned_instructions : 1501948
dcache hits          : 3604983805
dcache misses        : 1069308396
icache hits          : 1669945160
icache misses        : 616661321
instructions          : 0
```

- **Flash:** 4 MB NAND, single chip
- **System Memory:** 16 MB 16-bit DDR SDRAM
- **USB:** None
- **Wireless Radio:** Broadcom BCM43xx 802.11b/g
- **Antenna:** Dual folding, removable, rotating antennas (NOTE: it has been reported as of September 26, 2009, that for up to a year and a half ago until the present, the version of the WRT54GL you have acquired in that time period may have molded antennas which are NOT REMOVABLE)
- **Network Switch:** (4) 10/100 LAN + (1) 10/100 WAN, Auto MDX/MDI-X (Integrated in CPU)
- **Serial pinout:** Yes
- **JTAG pinout:** Yes

Firmware

Put the MICRO or MINI build on this router first if you're upgrading from the stock Linksys firmware -- the consequences of not following this advice can be **VERY GRAVE!** Then you can upgrade to a STANDARD, VOIP or VPN build, according to your needs. **DO NOT try to load a MEGA build on this router. MEGA builds are too large for this router!**

Q: Why can't I directly upgrade from a stock Linksys firmware to DD-WRT versions other than MICRO or MINI? A: The stock firmware from Linksys on the WRT54GL v1 and 1.1 won't accept a firmware image over 3MB in size (you will get the error: "Upgrade are failed! [sic]" if you try). So you will need to flash the micro or mini versions of DD-WRT onto the router BEFORE flashing the standard, voip, and vpn versions. Be sure to hard reset your router to restore firmware defaults both BEFORE AND AFTER you upgrade even to the micro or mini DD-WRT.

Q: Why can't I load a MEGA build? A: The WRT54GL has only 4MB for flashing firmware, which is not enough space for a mega build. If you try to load a mega build onto this router anyway, you may turn your router into a brick! I don't know if you can recover your router using TFTP or other methods if you do this, because it's never happened to me.

NOTE: Check the [Peacock thread](#) for recommended build numbers if unsure.

Also check the [Firmware Recommendations](#). Look for NEWD builds (as opposed to NEWD2 or VINT). Builds without NEWD2/VINT in the filename are NEWD.

Installation process from a stock Linksys firmware

Before starting, READ the peacock announcement linked above.

1. Do a hard reset

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- ◆ Full directions are in the peacock announcement - follow those instructions. Briefly, though: hold down the reset button for 30 seconds, continue holding the button and unplug the router and keep unplugged for 30 seconds, finally continue holding the button and plug the router in for another 30 seconds. You will have held the the reset button for 90 seconds without releasing when this is done. Now release the reset button and wait for the router to finish initializing.
- 2. Download the [NEWD MINI build generic 12548 Eko Build](#)
 - ◆ You should check the MD5 HASH of the firmware after downloading - a bad hash can mean a bad firmware download (and flashing a bad firmware can brick your device). See [Hashes & Checksums](#).
- 3. Turn off and disable any firewall or antivirus software and sign into your linksys router with your webbrowser.
- 4. Use the firmware upgrade web interface to update your router with dd-wrt. **DO NOT** close your browser or interrupt the process until you are sure it has completed.
- 5. Eventually (~3 minutes later) the WLAN light will turn on - try to open the dd-wrt configuration in your browser at <http://192.168.1.1>. If it opens, the process is complete and you will be asked to reset the password.
- 6. Decide which router build version you want. Read about the different versions' features here: [What is DD-WRT?#File Versions](#). If you won't be needing the features in the larger versions such as standard, you may be able to increase the responsiveness of your router by getting the smallest version that includes the features you need. Also, you can always update to a larger version later if down the line you need the extra features.
 - ◆ **MINI** - you're done, congratulations!
 - ◆ **MEGA** - As stated before on this page, the WRT54GL cannot support MEGA, so don't try.
 - ◆ **MICRO, STANDARD, VOIP, or VPN** versions - continue with the following steps:
 1. Power cycle the router
 2. Do a hard reset
 3. Install the version of dd-wrt you want
 4. Wait again for the process to complete and the lights to return to normal, and the webgui to be accessible at 192.168.1.1 showing the updated firmware. Give it at least 3 to five minutes.
 5. Power cycle the router.
 6. Do a hard reset

Other install notes

If you are upgrading from the web interface, you should use the GENERIC versions. For updating by webgui, EKO build 12548 Newd_Mini.bin is the recommended build for this router. It works well. You can also upgrade to 12548 Newd_Std.bin AFTER you have put on the mini version. Here is a link to the mini version download: ftp://dd-wrt.com/others/eko/V24_TNG/svn12548/dd-wrt.v24-12548_NEWD_mini.bin.

If you are upgrading via TFTP, you need the versions that contain headers with hardware info in them, called a trailed version of the file. This means a file with wrt54g in the name. Here is a great version for this router. ftp://dd-wrt.com/others/eko/BrainSlayer-V24-preSP2/older/09-08-09-r12874/broadcom/dd-wrt.v24_mini_wrt54g.bin

Troubleshooting

If you make the mistake of not upgrading with the MICRO or MINI version first, you will end up with a

router that has a flashing power light. You will be able to ping the router, but will not be able to access the web interface. You will then have to TFTP the **LINKSYS** firmware (**NOT THE DD-WRT FIRMWARE**) back on to the router to rescue it. You can connect your modem directly to your computer, and download the Linksys firmware from their site. Once you have rescued your router by restoring the Linksys firmware, you can then try upgrading to DD-WRT again (if you're still up for it!). **THIS TIME**, use the micro or mini version first!

Instructions on restoring your router are here: [Recover from a Bad Flash](#)

A few quotes from the following link: <http://forums.whirlpool.net.au/forum-replies-archive.cfm/686075.html>

Q: I'm a bit worried about how many times routers can be re-flashed with firmware - is there a limit?? A: There really isn't a limit to number of times you can flash. (within reason) Flash memory does have a life. Like your usb stick, 100,000 times or 10,000 times, I don't remember but it is alot, otherwise they would be useless.

Don't go and flash your router 10,000 times and test this person's assertion literally. But it appears that a few extra flashes here and there are not going to turn your router into a paperweight. So there's no need to worry about switching from micro to mini or mini to standard, or in reverse, as your needs change.

Running NEWD2 and/or K26 on the GL model

WARNING

This is **ONLY** for those that can recover using JTAG, **and is an unnecessary hack for people who want to try the k26 driver. (God only knows why a person would on this router.)** If this goes wrong...you **MUST** use JTAG to recover...you've been warned...you are altering the CFE of the router.

The WRT54GL router must already have dd-wrt installed before you begin this process.

- 1 -First start by backing up your current CFE.BIN file and keep it in a safe place
- 2- Enable ssh services in the dd-wrt configuration at 192.168.1.1. This is **REQUIRED** for WinSCP to work (step9)
- 3- Next you will need to download the "new" CFE for the WRT54GL model located [here](#). This is an altered CFE.BIN from a WRT54G-TM
- 4- Obtain a Hex Editor like [xvi32](#)
- 5- Edit your et0macaddr (located at 10CAh) to match your router's MAC address (exa. currently 00:14:BF:00:00:01)
- 6- Edit your new cfe il0macaddr (located at 1154h) to your router's MAC address plus one (exa. currently 00:14:BF:00:00:02)
- 7- Save your edited file and call it K26-CFE.BIN
- 8- Hard reset your GL router using the [30/30/30](#) method
- 9- Using [WinSCP](#) upload the modified CFE (named K26-CFE.BIN) to the routers /tmp directory.
- 10- Log into your router and issue the following commands on the command line.

```
mtd unlock cfe
mtd write K26-CFE.BIN cfe
```

When it completes it should reboot itself. - there has been a report that it did not reboot itself...if it doesn't

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reboot by itself...manually reboot it.

11- Verify you have the new cfe by backing up the CFE again.

12- verify the original K26-CFE.BIN file and this new cfe.bin file are identical (you can use the "comp" command in windows to compare them)

12- Once you have verified the new CFE.BIN file is on the unit, hard reset the unit again, let it boot up, then load up the a NEWD2_mini.bin build or K26_mini.bin build. (or any other "generic" NEWD2 or K26 build that is under 3.7M in size)
