Tutorial on DD-WRT - Part 5: Wireless repeater

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Setting up a WDS was introduced in the previous sections of this series. However, WDS is still an obscure thing. The reason is because, in order to promote its strengths, each router in your network must support WDS. And to get the best results, each router needs to have the same model running the same software.

In the real world, you probably only have one router that can run DD-WRT. And what should you do in such a case? In this section, I will show you how to set up a wireless repeater. To get there, we will use the V24 beta firmware, when a DD-WRT router can be set up as a wireless repeater. Unlike the WDS, DD-WRT routers can receive and redistribute wireless signals from an AP of the same type.

In essence, you will use the wireless repeater mode to broadcast the signal too weak to wireless clients - of course, assuming that the DD-WRT router can still receive the host AP. . During the test, we successfully repeated a host AP with a signal strength of only 9% using the DD-WRT router - so low that the laptop cannot detect the host AP.

Wireless repeater mode also groups local clients into a subnet - a potential feature for privacy and routing in the LAN, depending on your needs.

Some issues to note in advance

Because the wireless repeater mode is a new feature during the time of the author's writing, it is still in beta. So you may experience some limitations of wireless repeater mode, and this is one of them.

At that time, wireless repeat mode has not been active in bridging mode. This means that, as noted above, clients connected to the DD-WRT repeater must be in their own subnet, avoiding being detected by other clients connected to the host AP.

For example, if your host AP assigns clients to the 192.168.0.x subnet, your wireless repeater will have to assign its clients to a separate subnet to avoid overlap, term as 10.0.0.x. While clients on both subnets can access the Internet (assuming the host AP has Internet access), they won't be able to see each other. For some LAN configurations this is an undesirable problem and you will have to consider WDS or wireless bridge scenarios as alternatives, each with their own limitations.

To set up a wireless repeater yourself, the first thing you need to do is upgrade your DD-WRT compatible router to the V24 beta. If you are running the DD-WRT installation, take some time to backup its settings before experimenting with the new version V24 (*Administration / Backup*) to prevent a bad situation from happening. can be restored to the original configuration.

Install the router

Write down any wireless security information available in your home router. If you are using WEP, write down the password and key length (64-bit, 128-bit, .). If you are using WPA or WPA2, write down your password. Later you will need to use that information to set up your repeater. Note that the DD-WRT V24 is still in beta, and there will definitely be some minor changes until the final release.

You also need to write the SSID of the host AP you want to repeat. Alternatively, you can scan for available APs from within the router's administration interface.

Also need to access the administration interface of the DD-WRT router that you will set up as a repeater. Connect a wired computer to the DD-WRT router. Be sure to disable wireless adapters on that computer now, and plug the Ethernet cable into one of the ALN ports on your DD-WRT router.

Wall steps taken

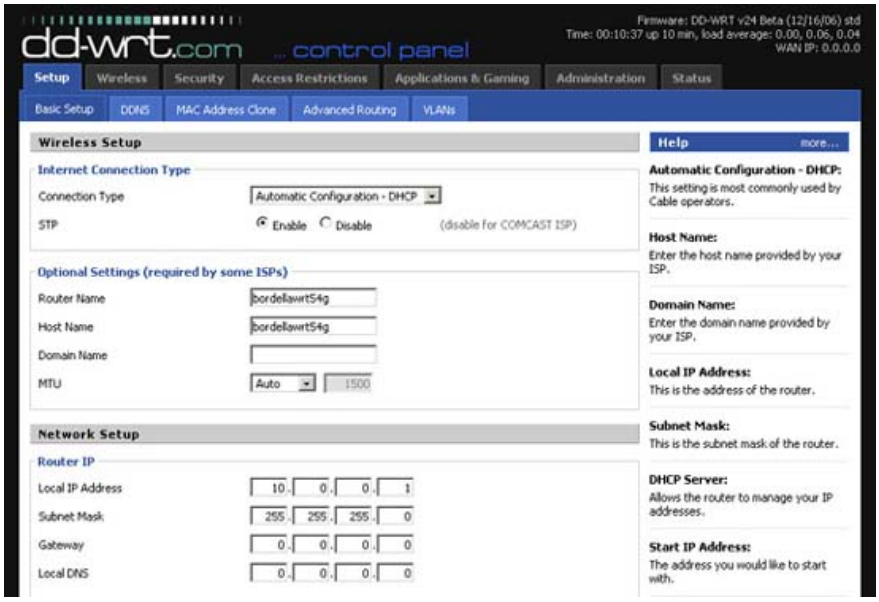
Assuming DD-WRT is set to factory defaults, its IP address will then be 192.168.1.1. If your client computer is configured to receive IP automatically, it will be assigned an address by the router.

Step 1 : Open the browser on your computer and connect to the DD-WRT router - its default address is http://192.168.1.1. The default login is *root* and the password is *admin* . Obviously, you need to change these after setting up.

Step 2 : Click **Setup / Basic Setup** . You can leave *Connection Type to* accept the default option, 'Automatic Configuration - DHCP'. You can leave the router and host name fields by default if you like, or you can customize them as we do.

The most important setting here is *Local IP Address* . This internal IP address must be in a different subnet than the subnet with the host AP. Our host AP is on 192.168.1.1, it is also the default value for this DD-WRT router. Therefore, we changed the DD-WRT router to 10.0.0.1.

It is possible to leave the remaining settings - DHCP is enabled, . and click *Save Settings* at the bottom of the page. Your router will restart.

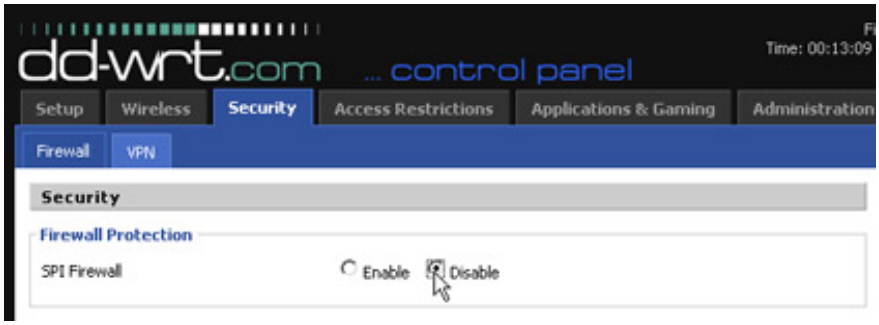


Because the router will restart with a new IP address, you need to edit the client connection at the computer to join the new subnet (Otherwise the admin page cannot be accessed).

In Windows XP, navigate to Control Panel / Network Connections, right-click Local Area Network, and select 'Repair' from the menu that appears.

When reconnecting to the router, you need to open your browser with its new address - in this example, http://10.0.0.1.

Step 3 : Click **Security / Firewall** and click *Disable* in the SPI Firewall section. If you want specific firewall settings, you can configure them on the host router.



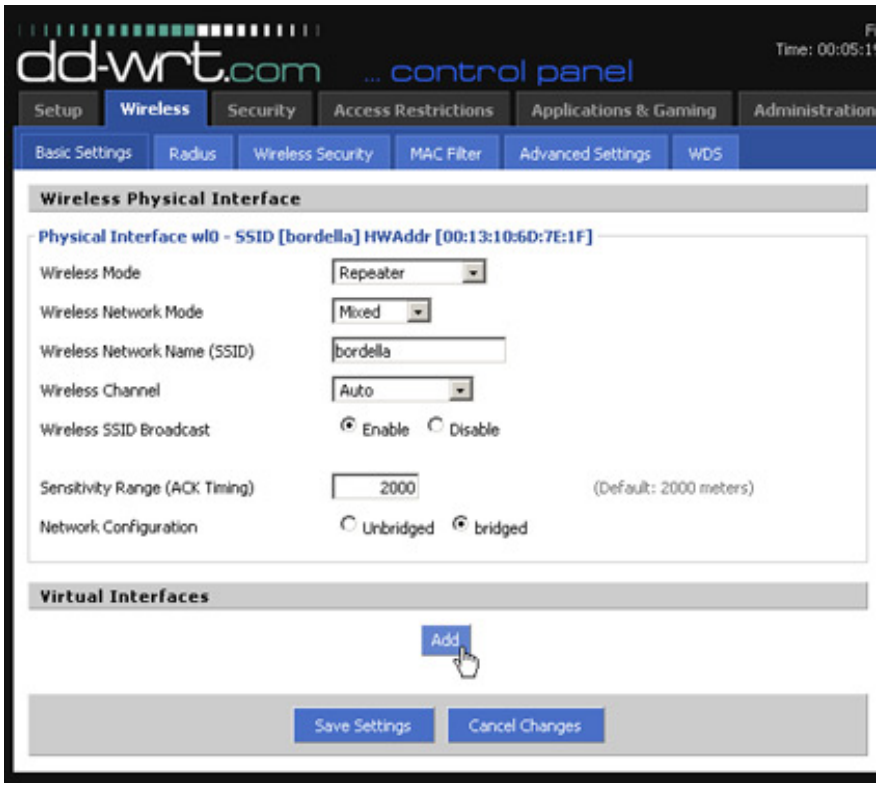
Step 4 : Click **Wireless / Basic Settings** . With *Wireless Mode,* change the selection from its default 'AP' to 'Repeater'.

Unless your host router is set to 'G-only' mode, otherwise leave *Wireless Network Mode* set to 'Mixed' mode. If the host router is set to G-only, you can leave 'G-Only' here.

Set up *Wireless Network Name (SSID) to* receive the SSID of the host router. If you don't know it and for some reason can't figure it out, we'll show you how to scan it later.

Leave the remaining settings at the default values. Some require setting *Sensitivity Range (ACK Timing)* to 0 to improve performance, which you can experience when the test is tested and working.
Important : Now click *Save Settings.* The page will be *refreshed* .

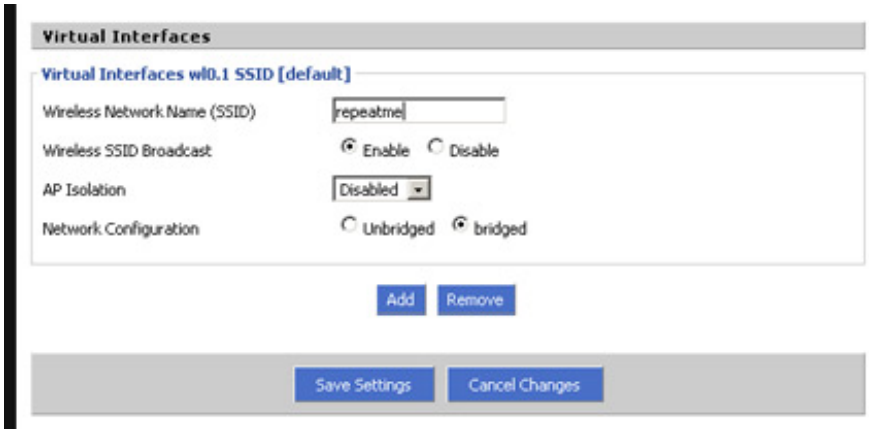
Here, you basically set up the DD-WRT router in wireless guest mode. The computer that is wired to the router will have Internet access, assuming that the host router can connect to the Internet.



The next step is to activate the DD-WRT router so that it acts as a wireless AP plus a wireless client. That's why we call it a repeater.

To do this, you need to create a virtual Virtual Interface interface. The interface will work as a software AP, promote its own SSID and perform bridge connecting external wireless clients to the router, itself as a wireless client for the host router in this configuration.

Click the *Add* button and the page will be refreshed again, with new fields for configuring the Virtual Interface virtual interface.



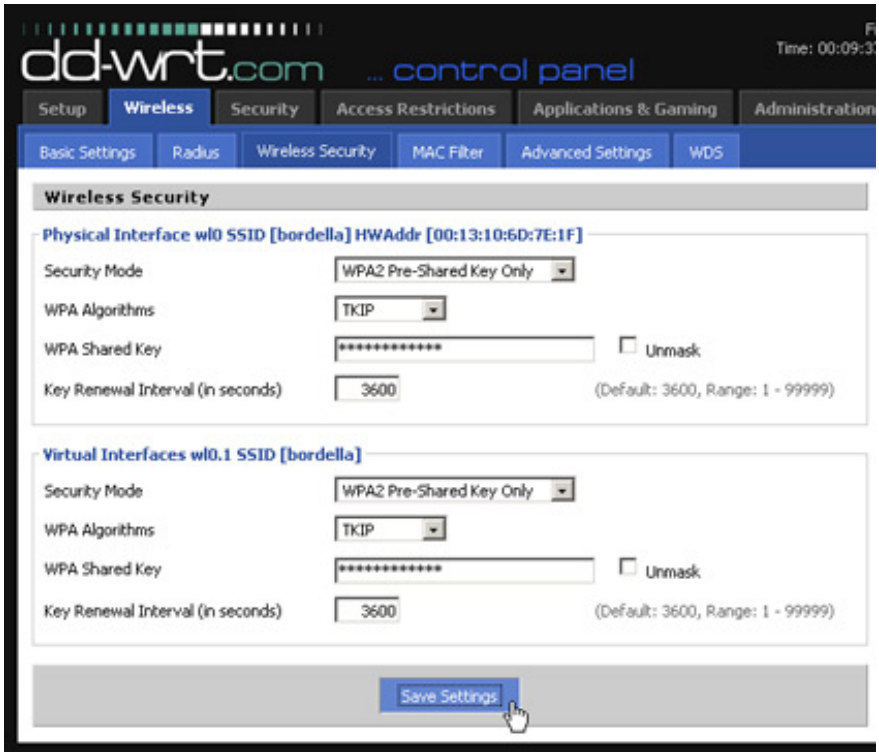
Enter the *Wireless Network Name (SSID)* name you want for the repeating wireless network. Ideally, it should be different from the host router's SSID. You will see this SSID available when wireless clients scan access points.

Leave the remaining fields as their default values ??as you see here, then click *Save Settings* .

Step 5 : Click *Save Settings* . In repeater mode, you need to consider two security aspects:

First, is security enabled on the host router you will repeat? If enabled, you need to configure security on the 'physical interface' of DD-WRT router so that it matches.

Second, do you want to secure the repeater with the internal wireless clients? If you like, you need to configure the type of security you want on the virtual interface of the DD-WRT router, and obviously, on each client linked to the repeater.



In this example, we use WPA2 security to connect to the host router. Obviously, you must enter the correct shared key as configured on the host router.

We also use WPA2 security for repeating signals. Note that on the Virtual Interface, we selected the shared key, which is the key we need to use on each client.

In theory, you can choose another security mode for your repeating network (virtual interface) with the security you are using for the host router. However, it may not be possible to use security on the host router and only secure the repeating network; or you can only use security at the host router and not use it on the repeating network.

Ideally, you should set up your repeater without securing the interface of either. This assumes that you have administrative access to your host router if it is secure. When the verified repeater is working, add each security layer separately to best identify the problem.

Step 6 : Scan the host router to enter the SSID (a different way than manually entering in step 4)

Click **Status / Wireless** and scroll to the bottom of the page. Here you can click *Site Survey* , when you will see a window appear, this window shows the available wireless networks.

In this example, the DD-WRT router has detected a network with SSID *bordella* available. This router is open (not secure), so to loop it, simply click 'Join' to create the link.

Troubleshoot

If you can't access the Internet from the client connected to the repeater, the first thing you need to check is whether the repeater has successfully connected to the host router.

Click **Status / Router** and scroll down to the bottom of the page. Here you will see a summary of the DD-WRT router's WAN connections - has it received the IP address, DNS and gateway from the host router? If IP is 0.0.0.0, that means nothing, and your client connection between the DD-WRT router and the host router is not working.

Some users find it helpful to configure DD-WRT as a wireless client first, before setting it up as a repeater. You can configure DD-WRT as a client on the Wireless / Basic page. As a client, you will not have a virtual interface because the client can only share the host router through wired connections.

If the guest mode does not work, you need to check the security arrangement between the host router and the DD-WRT router. When the client mode works with a wired computer, you can then change DD-WRT from 'client' to 'repeater' and add the virtual interface.

Advanced repeat

If you're adventurous, you can set up your router to dynamically repeat any AP (non-security) nearby AP. The main application to do this is to use your repeater in the mobile configuration.

Click **Wireless / Basic** and set the SSID for Physical Interface to blank. Then click **Administration / Command** and enter the command field:

nvram set wl_ssid = ""

Click *Save Startup* and restart the router. Now DD-WRT will work as a random repeater, repeating the signal of any open AP it finds.

More complex, you can download the DD-WRT script called AutoAP, which is a script that detects and repeats an available AP with the strongest signal, can even be combined with secure APs if You provide multiple keys for it to choose from.