

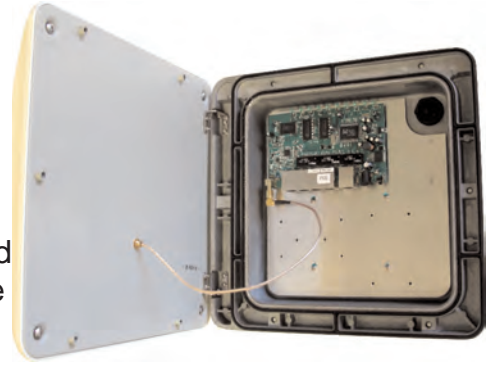


RadioLabs Point to Point Bridge Instructions for the GS 2000



Your GS2000 Bridge System allows you to extend the size of your wireless network by connecting two GS1000 units as a bridge. In this simple example, we'll connect two GS1000 antennas to create an extended wireless bridge. You may use these same steps to add additional bridges for greater coverage.* For easy configuration, we recommend configuring all components in close proximity before deploying them to their final positions.

You will be powering the antenna with a Cat5 cable and a POE injector. You can connect the POE injector to the antenna via the Cat 5 cable now, either connect it to the port listed POE or if you only have 2 ports you want the one closest to the antenna jack. Now plug in the power supply to the injector and connect your computer to the injector as well. You will use this setup to configure the settings for each GS100 unit.



***Note: For multiple client application please see the settings in the advanced users manual. Remember that each layer of bridges takes about half of your total network speed, so avoid configuring daisy-chains more than 4 bridges long. A star-pattern is always better, with a central router serving multiple bridges.**

Your first step will be to make sure that your PC is configured to “Use The Following IP Address” i.e. 192.168.1.10.

For Windows XP:

1. Disable internal WiFi Card, go to....
 - a. Control Panel
 - b. Network Connections
 - c. Wireless connection
 - d. Right Click on your wireless card and Select Disable
2. To set a Static IP on your PCs LAN connection, go to....
 - a. Control Panel
 - b. Network Connections
 - c. LAN connection
 - d. Right Click your LAN port that the RJ-45(cat5) Ethernet cable is plugged into, select Properties
 - e. Select Internet Protocol TCP/IP, then select Properties
3. Use following IP Address[192.168.1.10] Subnet mask 255.255.255.0. Do not use the IP Address 192.168.1.1 as that is the default IP Address of the GS1000

For Windows Vista:

1. Disable internal WiFi Card

- a. Network and Sharing Center
- b. Manage Network Connections
- c. Wireless Network Connection
- d. Right Click on your wireless card
- e. Select Disable

2. To set a Static IP on your PCs LAN connection Control Panel

- a. Network and Sharing Center
- b. Manage Network Connections
- c. Select your LAN connection then Right Click
- d. Select Properties
- e. Select Internet Protocol Version 4 (TCP/IPv4), then select Properties

3. Use following IP Address[192.168.1.10] Subnet mask 255.255.255.0. Do not use the IP Address 192.168.1.1 as that is the default IP Address of the GS1000

To set up your static IP address for MAC:

1.From the Apple menu, select System Preferences.

a.Click the Network icon.

2.Configure your network settings.

•In Mac OS X v10.5:

A. Select Ethernet.

B. From the Configure drop-down list, select Manually.

•In Mac OS X v10.4:

A. Select Built-in Ethernet.

B. Click the Configure button.

C. Select the TCP/IP tab.

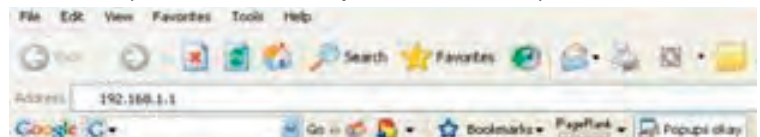
D. From the Configure IPv4 drop-down list, select Manually.

3. In the IP Address text box, type the IP address [192.168.1.10]

4. In the Subnet Mask text box, type your subnet mask 255.255.255.0

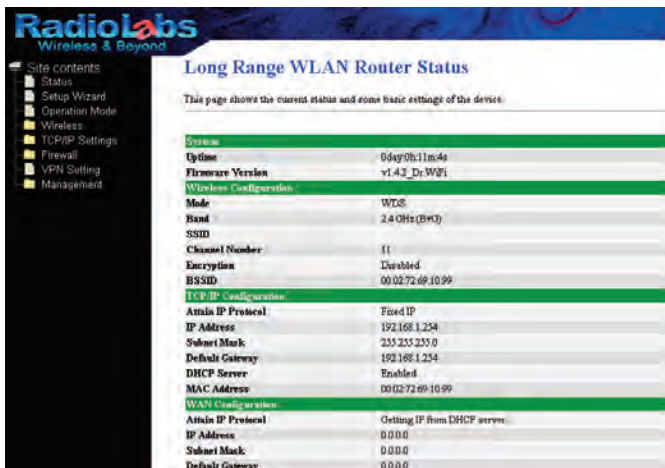
Do not use the IP Address 192.168.1.1 as that is the default IP Address of the GS1000

Once this is done you may open a web browser (i.e. Internet Explorer, Mozilla) and in the address field, enter 192.168.1.1. This is the default IP address of your GS1000.



Note: No administrative log in will appear, you may set the GS1000 to require a log in name and password later in the configuration.

The Web-Based Configuration Utility for the GS1000 will open. Click on the wireless tab on the left side menu, and then select Basic Settings. Set the Mode to WDS. Change the Wireless Channel from Auto to a channel 1-11 you choose. Make a note of the channel that you've chosen, because the other end of the bridge will need to be on the same channel. **DO NOT** Enable Universal Repeater Mode (Acting as AP and client simultaneously). Click Apply Changes. Your GS1000 will reboot in 30-60 seconds (keep an eye on the WiFi light when it starts blinking again your GS1000 is reset).



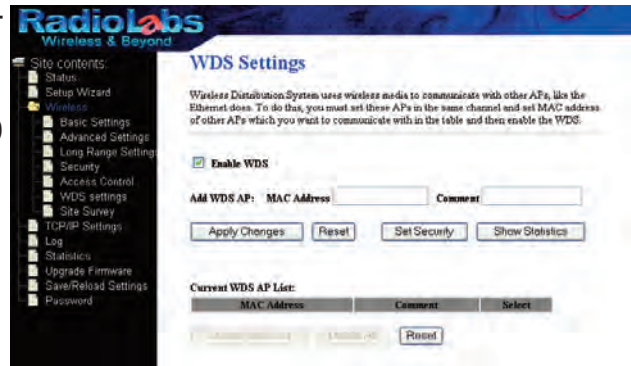
On the left-side menu, click on Wireless, and then WDS Settings. WDS must be set to Enable. If it is not, check the box for Enable WDS



Under Add WDS enter the LAN MAC address of the other GS1000, the one that you want to form a bridge with. You can get this from the sticker inside the second unit, or from the Status page of

the unit. The LAN MAC Address is under TCP/IP Configuration

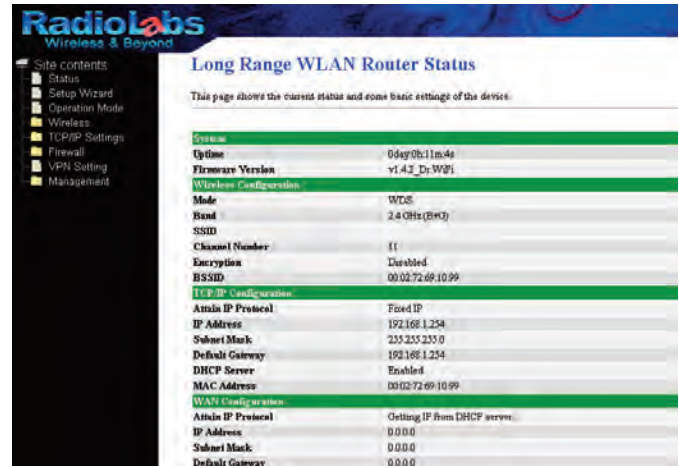
Press Apply Changes when done. The GS1000 will reboot, and when the screen refreshes, the second GS1000's MAC address will be listed under the Current WDS List



Note: In the comments box, to the right of the MAC address box, you may add comments or names for the device. It is recommended that you associate a name with each address. Example: 0002726e810 comment: Access Point 1 or LAN MAC Address etc...

Now, you need to configure the Second GS1000 with the LAN MAC address of the first GS1000. Disconnect from the First GS1000's POE injector and hardwire your computer to the second GS1000. In your browser's address field, enter "192.168.1.1". This will take you into the Web-Based Configuration Utility for the GS1000.

Your first step will be to change the IP address of the second GS1000 so you do not get an IP Address conflict as they are both set to 192.168.1.1.

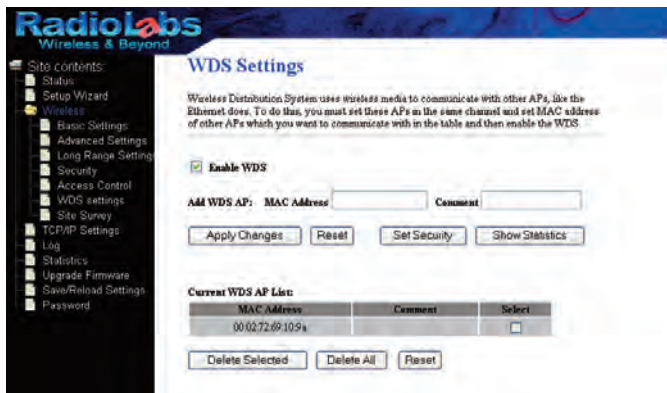


In the Web-Based Configuration Utility, click TCP/IP then LAN, in the IP Address field change the IP address to 192.168.1.2 and Disable the DHCP. Click Apply. Your GS1000 will reboot in 30-60 seconds.



Now the GS1000's IP Address is 192.168.1.2, enter that into the Address Field at the top of your web browser and hit enter. Now click on the Wireless tab, and select Basic Settings. Change the wireless channel to match the one you set for the first GS1000. Also make sure the Mode is set to WDS. Click Apply. Your GS1000 will reboot in 30-60 seconds.

Now, under Wireless choose WDS Settings. Confirm that "Enable WDS" is Checked. Under Add WDS, enter the LAN MAC address of the first GS1000 (available on sticker inside the second unit.) Click Apply changes when done. The GS1000 will now reboot, and when the screen refreshes, the first GS1000's LAN MAC address will be listed under the Current WDS List.

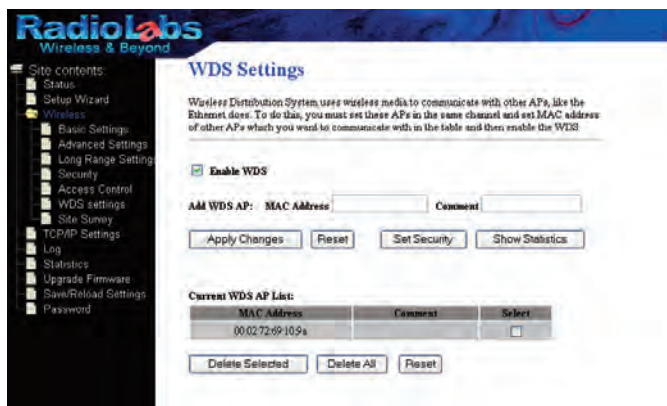


The two GS1000 Bridge units are now linked by a wireless bridge. Open your browser and enter the first GS1000's IP address in the address bar (192.168.1.1) You now should be able to access the Web-Based Configuration Utility of the first GS1000 wirelessly via the Second GS1000. If you have an

internet source plugged into the first GS1000's Wan Port you should now be able to access the internet from the bridged GS1000. However before you do that you will need to set the IP Address of you computer back to automatic.

Just to recap what we have done: on the GS2000 (two GS1000) under “Wireless” then “Basic Settings” we changed the Operation Mode to WDS and set a Channel. Then under “WDS Settings” we have swapped LAN Mac Addresses between the two units. We have also Changed the IP address of one unit and disabled the DHCP on one of them as well.

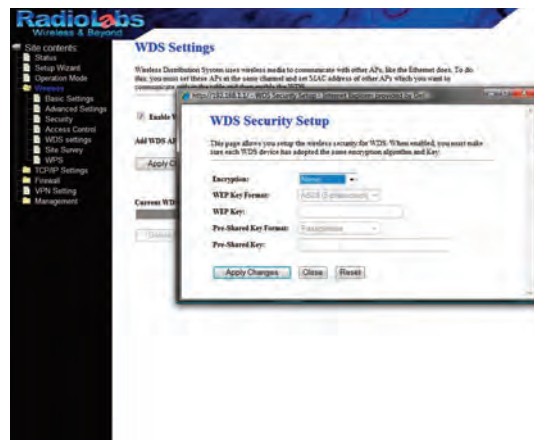
As a side note if you are not using an amp you can increase the RF Output of both units from 5% up to 100%. You will find the power settings under “Wireless” then “Advanced Settings”, just select the power setting you need to create a good connection.



Your wireless bridge is invisible, and cannot be detected by wireless devices. But to further secure your bridge you may now set the bridge with Encryption. In the web based configuration, select WDS Settings then Select the “Set Security tab.”

the security settings window will open. From here you may select which type of security you would like to use on your bridge. The following page will have an example of setting WEP security settings. See the user’s manual on the CD for advance details of the encryption options.

Once you have selected the Set Security tab



Below is an example of setting WEP security settings. Change wireless encryption from “none” to “WEP”. WEP keys may be any of 4 different types choose one of the following types by selecting the “Set WEP Key” button:

Character Input - 13 characters (ASCII WEP128 104 bit, key should contain 13 alphanumeric characters a-z, A-Z, 0-9)

Character Input - 5 characters (ASCII WEP64 40 bit, key should contain 5 alphanumeric characters a-z, A-Z, 0-9)

Hexadecimal Input - 26 digits (Hex WEP128 104 bit, key should contain 26 characters A-F, 0-9)

Hexadecimal Input - 10 digits (Hex WEP64 40 bit, key should contain 10 characters A-F, 0-9)

Enter at least one encryption key in the first encryption key space. The key should match the format of the chosen WEP encryption type. Additional keys may be entered in boxes 2, 3, and 4. Click Apply changes when finished!

Note: You may select any of the listed Encryption for your bridge. The above procedure is an example of setting WEP type Encryption. Each wireless client that will connect to the Bridge must also be configured with the exact same WEP encryption key type and encryption key. Consult your wireless client's documentation for more information on configuring its WEP settings.

Troubleshooting:

Most problems with setting up WDS are caused by incorrectly entering the MAC addresses into the GS1000's Web-Based Configuration Utility. If you're having problems, check the MAC address settings in both devices under the WDS settings.

Confirm that all bridges are set to the same wireless channel. Check the Packet Log (Advanced/Diagnostic/Packet Info) in each unit's Web-Based Configuration Utility to confirm communication between them. The “WDS” entries should show packets both sent and received.

If you can not log on to the GS1000 you will want to make sure that it is in factory default configuration. On the inside of the GS1000, hold down the reset button located on the far right for 15 to 30 seconds. This will reset them to factory defaults. They will take 30-60 seconds to reboot afterwards

(keep an eye on the WiFi light when it starts blinking again your GS1000 is reset). While the GS1000 reboots make sure that your PC is configured to “Use The Following IP Address” i.e. 192.168.1.10. If after resetting the unit, the WiFi light does not begin to blink, unplug the power and wait 30 seconds then plug the power back in. After 30 to 60 seconds you should see the WiFi light start blinking.

