

## Advanced Router Configuration – Linksys



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This presentation shows how to do some of the advanced configuration using a Linksys router as an example. These techniques apply to any brand of router, although the screens and techniques may be different

## Part 1: Turn off wireless



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First, we'll turn off the wireless feature in the router. This will turn off the router's wireless access point. You can also choose to just change the channel and leave the wireless access point on.

On the router web interface, go to  
“Wireless” tab

The screenshot shows the Linksys web interface for a WRT54GS router. The page is titled "Wireless" and is part of the "Wireless-G Broadband Router with SpeedBooster" configuration. The "Wireless" tab is selected, and the "Basic Wireless Settings" sub-tab is active. The settings are as follows:

- Wireless Network Mode: Mixed
- Wireless Network Name (SSID): AE6GS-LS
- Wireless Channel: 3 - 2.422GHz
- Wireless SSID Broadcast:  Enable  Disable

Below the settings, there is a green wireless signal icon and the text "Status : SES Security Parameters Configured" with a "Reset Security" button. On the right side, there is a help box for "Wireless Network Mode" with instructions on how to choose between Mixed and B-Only modes. At the bottom of the page, there are "Save Settings" and "Cancel Changes" buttons.

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First, on a computer that is connected to the router (either via Ethernet or wireless connection), start a browser and go to the router's address (usually at 192.168.1.1 for Linksys routers). Select the “Wireless” option tab.

In Wireless, click on Mode, select  
“Disabled”



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Click on the “Wireless Mode” and select “Disable”

You can also click on the “Channel” button and select either channel 1 or channel 11 (assuming the AyrMesh network is on channel 6) if you want to leave the wireless feature on and ensure it doesn't interfere with the AyrMesh network..

## Click on “Save Settings”

LINKSYS®  
A Division of Cisco Systems, Inc. Firmware Version: v1.02.2

Wireless-G Broadband Router with SpeedBooster WRT54GS

**Wireless**

Setup | **Wireless** | Security | Access Restrictions | Applications & Gaming | Administration | Status

Basic Wireless Settings | Wireless Security | Wireless MAC Filter | Advanced Wireless Settings

**Wireless Network**

Wireless Network Mode:

Wireless Network Name (SSID):

Wireless Channel:

Wireless SSID Broadcast:  Enable  Disable



Status : SES Security Parameters Configured

Wireless Network Mode: If you wish to exclude Wireless-G clients, choose B-Only Mode. If you would like to disable wireless access, choose Disable. More...

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Finally, when you have disabled the wireless or set the channel, press the “Save Settings” button.

Part 2: Give the AyrMesh Hub a static IP address

(This is not generally possible on Linksys routers – check the instruction manual for your model to see if there is a way to set a “Static DHCP address” or a “DHCP Reservation” for specific devices)



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Unfortunately, there is no way on most Linksys/Cisco consumer routers to ensure a device always gets the same IP address when the router boots. If newer models have this capability, we'll update the instructions.

What this means is that you have to at least check the static route and possibly modify it every time the router reboots, because the IP address of the AyrMesh Hub may change.

## Part 3: Set up a static route



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Setting a static route will allow computers on your router's network (via Ethernet or wireless) to access computers or devices on your AyrMesh network. This is necessary because the AyrMesh network is its own network with IP addresses in the 101.x.y.z range, while your router probably has addresses in the 192.168.x.y range.

Normally, the router would “route” traffic to 101.x.y.z (or any address outside of its normal 192.168.x.y range) out the WAN port on the assumption it is going to the Internet. This Static Route will tell it instead to route that traffic to the AyrMesh Gateway Hub, which will route it in the AyrMesh network

# Go to the "Status" tab

The screenshot displays the Linksys WRT54GS web interface. At the top, the Linksys logo and "A Division of Cisco Systems, Inc." are on the left, and "Firmware Version: v1.52.2" is on the right. Below this is a navigation bar with "Status" selected. The main content area is divided into "Router Information" and "Internet Configuration Type".

Router Information	Internet Configuration Type
Firmware Version: v1.52.2, Jun. 7, 2007	Login Type: PPPoE
Current Time: Not Available	Login Status: Disconnected <input type="button" value="Connect"/>
MAC Address: 00:A0:D1:50:74:3C	IP Address: 0.0.0.0
Router Name: WRT54GS	Subnet Mask: 0.0.0.0
Host Name: AE6GS-router	Default Gateway: 0.0.0.0
Domain Name: latte	

Helpful information on the right side of the interface:

- Firmware Version:** This is the Router's current firmware.
- Current Time:** This shows the time, as you set on the Setup Tab.
- MAC Address:** This is the Router's MAC Address, as seen by your ISP.
- Router Name:** This is the specific name for the Router, which you set on the Setup Tab. [More...](#)
- Configuration Type:** This shows the information required by your ISP for connection to the Internet. This information was entered on the Setup Tab. You can Connect or



First, click on the "Status" tab in the router's web interface.

Click the “Local Network” sub-tab, push  
“DHCP Clients Table”

The screenshot shows the Linksys WRT54GS router configuration interface. The top navigation bar includes 'Status', 'Setup', 'Wireless', 'Security', 'Access Restrictions', 'Applications & Gaming', 'Administration', and 'Status'. The 'Local Network' sub-tab is selected. The main content area displays the following settings:

MAC Address:	00:18:F8:7C:A4:AB
IP Address:	192.168.1.1
Subnet Mask:	255.255.255.0
DHCP Server:	Enable
Start IP Address:	192.168.1.100
End IP Address:	192.168.1.149

Below the settings is a button labeled 'DHCP Clients Table'. To the right of the settings is a help section with the following text:

**MAC Address.** This is the Router's MAC Address, as seen on your local, Ethernet network.

**IP Address.** This shows the Router's IP Address, as it appears on your local, Ethernet network.

**Subnet Mask.** When the Router is using a Subnet Mask, it is shown here.

**DHCP Server.** If you are using the Router as a DHCP server, that will be displayed here. More...

At the bottom right of the configuration area is a 'Refresh' button.

From here, click on the “Local Network” sub-tab, and then click on the “DHCP Clients Table” button (On other brands of routers, this may be on the main menu)

# Find the IP address for your Hub

## DHCP Active IP Table

DHCP Server IP Address: **192.168.1.1**

Refresh

Client Host Name	IP Address	MAC Address	Expires	Delete
LilPunkin	192.168.1.101	00:26:b6:eb:f3:c8	23:52:56	<input type="checkbox"/>
	192.168.1.100	00:15:6d:db:d2:13	23:51:39	<input type="checkbox"/>
Bills-iPhone-2	192.168.1.107	00:25:bc:18:ab:12	22:12:18	<input type="checkbox"/>

Close



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This is the DHCP table for my router. I can tell which entry is the AyrMesh Hub because of the MAC address, which I wrote down and kept handy as per the installation instructions. The IP address for the AyrMesh Hub is 192.168.1.100

On some brands of routers, you can set a “static” DHCP address, so a particular device always gets the same DHCP address from the router. Unfortunately, Linksys routers do not have this feature. If your router has it, though, we strongly advise you set a “static” DHCP address for your AyrMesh Hub. That way, you won't have to do this again.

If your router cannot set a “static” DHCP address, you will have to check the static route every time your router is rebooted, because the IP address of your Hub may change.

## Close the DHCP window, go to the “Setup” tab

The screenshot shows the Linksys WRT54GS router's web interface. The top navigation bar includes the Linksys logo, "A Division of Cisco Systems, Inc.", and "Firmware Version: v1.52.2". Below this is a secondary navigation bar with "Wireless-G Broadband Router with SpeedBooster" and "WRT54GS". The main navigation menu has tabs for "Setup", "Wireless", "Security", "Access Restrictions", "Applications & Gaming", "Administration", and "Status". Under the "Setup" tab, there are sub-tabs for "Basic Setup", "DDNS", "MAC Address Clone", and "Advanced Routing". The "Internet Setup" section is active, showing "Internet Connection Type" set to "PPPoE". The "User Name" field contains "bill.moffitt@sbcglobal.net" and the "Password" field is masked with asterisks. There are radio buttons for "Connect on Demand: Max Idle Time 5 Min." and "Keep Alive: Redial Period 30 Sec.", with the latter selected. Below these are fields for "Router Name" (WRT54GS) and "Host Name" (AE6GS-router). A blue sidebar on the right contains instructions for PPPoE, Password, Host Name, and Domain Name.

LINKSYS®  
A Division of Cisco Systems, Inc. Firmware Version: v1.52.2

Wireless-G Broadband Router with SpeedBooster WRT54GS

Setup Wireless Security Access Restrictions Applications & Gaming Administration Status

Basic Setup DDNS MAC Address Clone Advanced Routing

Internet Setup

Internet Connection Type

PPPoE

User Name: bill.moffitt@sbcglobal.net

Password: .....

Connect on Demand: Max Idle Time 5 Min.

Keep Alive: Redial Period 30 Sec.

Router Name: WRT54GS

Host Name: AE6GS-router

PPPoE: This setting is most commonly used by DSL providers.

Password: Enter the password provided by your ISP. More...

Host Name: Enter the host name provided by your ISP.

Domain Name: Enter the domain name provided by your ISP.

Now that you know the IP address of your AyrMesh Hub, close the DHCP table and go to the “Setup” tab

## Select “Advanced Routing” sub-tab

The screenshot shows the Linksys WRT54GS configuration interface. The top navigation bar includes 'Setup', 'Wireless', 'Security', 'Access Restrictions', 'Applications & Gaming', 'Administration', and 'Status'. The 'Advanced Routing' sub-tab is selected under the 'Setup' menu. The main content area is divided into 'Operating Mode' (set to 'Gateway') and 'Static Routing'. The 'Static Routing' section contains fields for 'Select set number' (10), 'Enter Route Name', 'Destination LAN IP', 'Subnet Mask', 'Default Gateway', and 'Interface' (LAN & Wireless). A 'Show Routing Table' button is located below these fields. On the right side, there is a help panel with instructions for 'Operating Mode', 'Select Set Number', 'Route Name', 'Destination LAN IP', and 'Subnet Mask'. The bottom of the page features 'Save Settings' and 'Cancel Changes' buttons, along with the Cisco Systems logo and the number 12.

Under “Setup,” choose the “Advanced Routing” sub-tab. This sounds like you're wading into “deep water,” but don't worry – it's actually very simple.

## Set the route

- Set a route name (I have chosen “AyrMesh”)
- Enter the “Destination LAN IP”
  - Always “101.0.0.0”
- Enter the “Subnet Mask”
  - Always “255.0.0.0”
- Enter the “Default Gateway”
  - The IP address for your Hub from the DHCP table
  - Mine is “192.168.1.100”
- Select “LAN & Wireless” for Interface



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Just fill in the routing table as shown.

The “Destination LAN IP” is the LAN that we are routing to, in this case, the AyrMesh LAN. It is always 101.0.0.0.

The “Subnet Mask” indicates how big that LAN can be. Theoretically, the AyrMesh LAN can be very large, so the subnet mask has three zeros; it is always 255.0.0.0

The “Default Gateway” is the IP address the router knows (one on its network) to which the traffic bound for the AyrMesh network should be routed. It is always the IP address of the AyrMesh Hub.

The “Interface” is just the router port that is being affected – since the AyrMesh Hub is plugged into the “LAN” side, select “LAN & Wireless”

# Set the route; hit “Save Settings”

The screenshot displays the Linksys WRT54GS router's configuration interface. The top navigation bar includes 'Setup', 'Wireless', 'Security', 'Access Restrictions', 'Applications & Gaming', 'Administration', and 'Status'. The 'Advanced Routing' section is active, showing 'Static Routing' options. The 'Gateway' dropdown is set to 'Gateway'. The 'Select set number' dropdown is set to '1(AyrMesh)', with a 'Delete This Entry' button next to it. The 'Enter Route Name' field contains 'AyrMesh'. The 'Destination LAN IP' field is set to '101.0.0.0', the 'Subnet Mask' is '255.0.0.0', and the 'Default Gateway' is '192.168.1.100'. The 'Interface' dropdown is set to 'LAN & Wireless'. A 'Show Routing Table' button is located below the form. On the right side, there is a help panel with the following text: 'Operating Mode: If the router is hosting your Internet connection, select Gateway mode. If another router exists on your network, select Router mode.' 'Select Set Number: This is the unique route number, you may set up to 20 routes.' 'Route Name: Enter the name you would like to assign to this route.' 'Destination LAN IP: This is the remote host to which you would like to assign the static route.' 'Subnet Mask: Determines the host and the network portion. More...'. At the bottom of the page, there are 'Save Settings' and 'Cancel Changes' buttons. The Cisco Systems logo and 'ONE CITY' branding are visible in the bottom right corner.

Once all that is entered, just press the “Save Settings” button on the bottom of the page.

You're Done!  
Congratulations!



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That's all!