

Advanced Router Configuration – D-Link



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This presentation shows how to do some of the advanced configuration using a D-Link 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

(Note: most D-Link routers have automatic channel scanning, so you may not have to do this part – the router should automatically shift channels to avoid interference)



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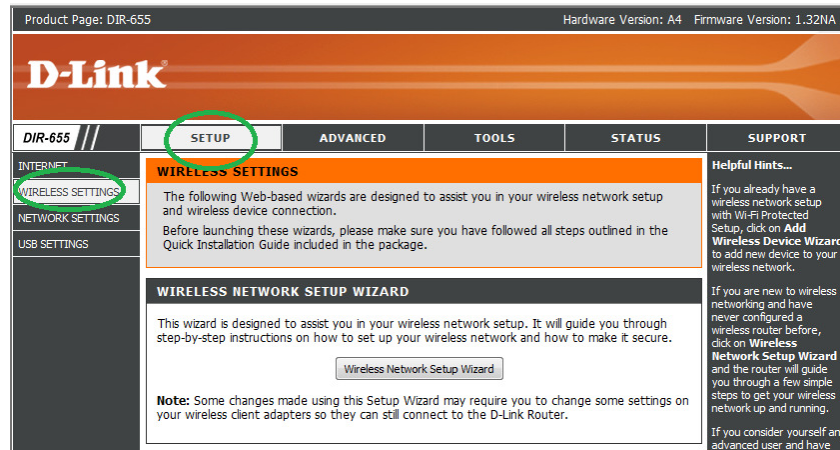
First, we'll turn off the wireless feature in the router.

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, but the router's automatic channel scanning should actually do this for you.

This is an optional step – you may want to move directly to Part 2.

On the router web interface, press the “Setup” tab at the top and the “Wireless Settings” button on the left



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 192.168.0.1 for D-Link routers). Select the “Setup” Tab on top and the “Wireless Settings” button on the left.

Click “Manual Wireless Network Setup” at the bottom of the page

WIRELESS NETWORK SETUP WIZARD

This wizard is designed to assist you in your wireless network setup. It will guide you through step-by-step instructions on how to set up your wireless network and how to make it secure.

[Wireless Network Setup Wizard](#)

Note: Some changes made using this Setup Wizard may require you to change some settings on your wireless client adapters so they can still connect to the D-Link Router.

ADD WIRELESS DEVICE WITH WPS (WI-FI PROTECTED SETUP) WIZARD

This wizard is designed to assist you in connecting your wireless device to your wireless router. It will guide you through step-by-step instructions on how to get your wireless device connected. Click the button below to begin.

[Add Wireless Device with WPS](#)

MANUAL WIRELESS NETWORK SETUP

If your wireless network is already set up with Wi-Fi Protected Setup, manual configuration of the wireless network will destroy the existing wireless network. If you would like to configure the wireless settings of your new D-Link Systems Router manually, then click on the Manual Wireless Network Setup button below.

[Manual Wireless Network Setup](#)

WIRELESS

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**AYRSTONE
PRODUCTIVITY**

Select the “Manual Wireless Network Setup” button at the bottom of the page

Turn off Wi-Fi or force a different channel

Product Page: DIR-655 Hardware Version: A4 Firmware Version: 1.32NA

D-Link

DIR-655 // SETUP ADVANCED TOOLS STATUS SUPPORT

INTERNET

WIRELESS SETTINGS

NETWORK SETTINGS

USB SETTINGS

WIRELESS

Use this section to configure the wireless settings for your D-Link Router. Please note that changes made on this section may also need to be duplicated on your Wireless Client.

Save Settings Don't Save Settings

WIRELESS NETWORK SETTINGS

Enable Wireless: Always

Wireless Network Name: dlink (Also called the SSID)

802.11 Mode: Mixed 802.11n, 802.11g and 802.11b

Enable Auto Channel Scan:

Wireless Channel: 2.437 GHz - CH 6

Transmission Rate: Best (automatic) (Mbit/s)

Helpful Hints...

Changing your Wireless Network Name is the first step in securing your wireless network. Change it to a familiar name that does not contain any personal information.

Enable Auto Channel Scan the router can select the best possible channel for your wireless network to operate on.

Enabling Hidden Mode is another way to secure your network. With this option enabled, no wireless clients will be able to see your wireless network when they scan to see



You can turn off the wireless feature of the router altogether by unchecking the “Enable Wireless” box, or you can disable the channel scanning feature and set a channel manually by unchecking the “Enable Auto Channel Scan” box and selecting a channel manually from the pull-down below.

Save the settings

The screenshot shows the D-Link DIR-655 web interface. At the top, it displays 'Product Page: DIR-655', 'Hardware Version: A4', and 'Firmware Version: 1.32NA'. The D-Link logo is prominently displayed. Below the logo is a navigation menu with tabs for 'DIR-655', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'SETUP' tab is selected, and the 'WIRELESS' sub-tab is active. The main content area is titled 'WIRELESS' and contains the following text: 'Use this section to configure the wireless settings for your D-Link Router. Please note that changes made on this section may also need to be duplicated on your Wireless Client.' Below this text are two buttons: 'Save Settings' (circled in green) and 'Don't Save Settings'. The 'WIRELESS NETWORK SETTINGS' section includes the following configuration options: 'Enable Wireless' (checked, 'Always' selected, 'New Schedule' button), 'Wireless Network Name' (text input 'dlink', '(Also called the SSID)'), '802.11 Mode' (dropdown menu 'Mixed 802.11n, 802.11g and 802.11b'), 'Enable Auto Channel Scan' (checked checkbox), 'Wireless Channel' (dropdown menu '2.437 GHz - CH 6'), and 'Transmission Rate' (dropdown menu 'Best (automatic)', '(Mbit/s)'). On the right side, there is a 'Helpful Hints...' section with several paragraphs of text providing additional information and warnings.

Click on the “Save Settings” button to save the settings.

Part 2: Set up a static DHCP address for the AyrMesh Hub



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The AyrMesh Hub gets an IP address on the network via Dynamic Host Configuration Protocol (DHCP). On D-Link routers, you can ensure that the Hub always gets the same IP address by setting a “Static” DHCP address.

Select the top “Status” tab and the
“Device Info” button on the left

The screenshot displays the D-Link DIR-655 web interface. At the top, it shows 'Product Page: DIR-655', 'Hardware Version: A4', and 'Firmware Version: 1.32NA'. The D-Link logo is prominently displayed. Below the logo is a navigation menu with tabs for 'DIR-655', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'STATUS' tab is highlighted with a green circle. On the left side, there is a sidebar menu with options: 'DEVICE INFO', 'LOGS', 'STATISTICS', 'INTERNET SESSIONS', 'WIRELESS', and 'WISH SESSIONS'. The 'DEVICE INFO' option is also highlighted with a green circle. The main content area is titled 'DEVICE INFORMATION' and contains the following text: 'All of your Internet and network connection details are displayed on this page. The firmware version is also displayed here.' Below this, there are sections for 'GENERAL' and 'WAN'. The 'GENERAL' section shows 'Time : Sunday, January 25, 2004 3:04:27 AM' and 'Firmware Version : 1.32NA, 2009/08/27'. The 'WAN' section shows 'Connection Type : DHCP Client', 'QoS Engine : Active', and 'Cable Status : Disconnected'. On the right side, there is a 'Helpful Hints...' section with a 'More...' link.

First, click on the “DHCP” button in the router's web interface.

Scroll down the page for “LAN computers” -
get Hub's IP & MAC addresses

The screenshot shows a network configuration interface. At the top, it says "DHCP Server : Enabled". Below that is a section for "WIRELESS LAN" with settings: "Wireless Radio : Enabled", "802.11 Mode : Mixed 802.11n, 802.11g and 802.11b", "Channel Width : 20MHz", "Channel : 11", "WISH : Active", and "Wi-Fi Protected Setup : Enabled/Not Configured". Underneath is an "SSID List" table with one entry: "dlink" with "Guest" set to "No", "MAC Address" "00:21:91:ff:44:d1", and "Security Mode" "Disabled". Below the SSID list is a "LAN COMPUTERS" section with a table header: "IP Address", "Name (if any)", and "MAC". A yellow arrow points to the "IP Address" column header with the text "Address should be right here".

Network Name (SSID)	Guest	MAC Address	Security Mode
dlink	No	00:21:91:ff:44:d1	Disabled

IP Address	Name (if any)	MAC
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NOTE: This MAC address will be slightly different from the MAC address printed on the front of the Hub



Scroll down the page, and you'll see the list of “LAN computers. The Hub will be listed there (sorry, we weren't able to get a D-Link router with a Hub attached to it for the picture) – it will have a MAC address that starts with 00:15:6D:.

Copy the IP address and the MAC address of the Hub (you should be able to drag across it and copy it to your computer's clipboard, then paste it to a Notepad document, or just write it down on a piece of paper).

Click on the “Setup” tab, then the “Network Settings” button on the left

The screenshot shows the D-Link DIR-655 web interface. At the top, it displays 'Product Page: DIR-655', 'Hardware Version: A4', and 'Firmware Version: 1.32NA'. Below this is the D-Link logo and a navigation menu with tabs for 'DIR-655', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'SETUP' tab is highlighted with a green circle. On the left side, there is a sidebar with options: 'INTERNET', 'WIRELESS SETTINGS', 'NETWORK SETTINGS', and 'USB SETTINGS'. The 'NETWORK SETTINGS' option is highlighted with a green circle. The main content area is divided into two sections: 'NETWORK SETTINGS' and 'ROUTER SETTINGS'. The 'NETWORK SETTINGS' section contains instructions on configuring the internal network and DHCP server, along with 'Save Settings' and 'Don't Save Settings' buttons. The 'ROUTER SETTINGS' section contains instructions on configuring the router's IP address and a text input field for 'Router IP Address' with the value '192.168.0.1'. A 'Helpful Hints...' section is visible on the right side of the interface.

Click on the “Setup” tab at the top of the page, then on the “Network Setting” button on the left side of the page.

Scroll down to “DHCP Reservation, fill in the values for your Hub, and Save

Mixed-mode (broadcast then Point-to-Point)
Hybrid (Point-to-Point then Broadcast)

Primary WINS IP Address: 0.0.0.0
Secondary WINS IP Address: 0.0.0.0

ADD DHCP RESERVATION

Enable:

Computer Name: AyrMesh << Computer Name

IP Address: 192.168.0.100

MAC Address: 00:15:6D:00:11:22

Copy Your PC's MAC Address

Save Clear

DHCP RESERVATIONS LIST

Enable	Computer Name	MAC Address	IP Address
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NUMBER OF DYNAMIC DHCP CLIENTS: 0

Hardware Address	Assigned IP	Hostname	Expires
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Scroll down to the “DHCP Reservation” section.

Fill in the values for your Hub;

- 1.) The name can be anything you wish; I chose “AyrMesh”
- 2.) The IP address will be the IP address you copied down in the previous step
- 3.) The MAC address will be the MAC address you copied down in the previous step (note that it is a little different from the MAC address on the front of the Hub – this is the MAC address for the Ethernet port, what's on the front of the Hub is the wireless port)
- 4.) Click on “Save” to save the reservation

Finally, click on the “Save Settings” button near the top of the screen

The screenshot shows the D-Link DIR-655 web management interface. At the top, it displays 'Product Page: DIR-655', 'Hardware Version: A4', and 'Firmware Version: 1.32NA'. The D-Link logo is prominently displayed. Below the logo is a navigation menu with tabs for 'DIR-655', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'SETUP' tab is selected, and the 'NETWORK SETTINGS' sub-tab is active. The main content area is divided into two sections: 'NETWORK SETTINGS' and 'ROUTER SETTINGS'. The 'NETWORK SETTINGS' section contains a paragraph of instructions and two buttons: 'Save Settings' (circled in green) and 'Don't Save Settings'. The 'ROUTER SETTINGS' section contains another paragraph of instructions and a text input field for 'Router IP Address' with the value '192.168.0.1'. On the right side, there is a 'Helpful Hints...' section with additional information.

Click on the “Save Settings” button near the top of the screen and you're done.

Part 3: Setting the static route

Unfortunately, most D-Link routers do not have a user interface to help you set a static route to an address on their own LAN.

Please check your router's manual – most can only set a static route to a device on their WAN, not on the LAN, but the AyrMesh Hub must be plugged into the router's LAN port.

The following shows how to do it from a very long URL pasted into a browser.



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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 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.

Unfortunately, most D-Link routers do not have a GUI to do this.

Static route – what you need

- A route name (I use “AyrMesh”)
- The “Destination LAN IP”
 - Always “101.0.0.0”
- The “Subnet Mask”
 - Always “255.0.0.0”
- The “Default Gateway”
 - The IP address for your Hub from the DHCP table
 - Mine is “192.168.0.100”
- The “metric”
 - Always “2”



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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 the router's interface to which this route applies. D-Link routers generally only allow you to use the WAN interface, but you need to apply this route to the LAN interface. Check your router's manual (or online forums) to see if this is possible.

Set the route – building the URL

- [`http://\(IP address of your router – e.g. 192.168.0.1\)/Advanced/Routing.shtml?config.route_table\[0\].enabled=true&config.route_table\[0\].used=1&config.route_table\[0\].entry_name=\(name of the route being created, e.g. AyrMesh\)&config.route_table\[0\].dest_ip=101.0.0.0&config.route_table\[0\].metric=2&config.route_table\[0\].dlink=LAN&config.route_table\[0\].subnet=255.0.0.0&config.route_table\[0\].gw=\(IP address of the Hub; e.g. 192.168.0.100\)`](http://(IP address of your router – e.g. 192.168.0.1)/Advanced/Routing.shtml?config.route_table[0].enabled=true&config.route_table[0].used=1&config.route_table[0].entry_name=(name of the route being created, e.g. AyrMesh)&config.route_table[0].dest_ip=101.0.0.0&config.route_table[0].metric=2&config.route_table[0].dlink=LAN&config.route_table[0].subnet=255.0.0.0&config.route_table[0].gw=(IP address of the Hub; e.g. 192.168.0.100))



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This is the URL that sets a static route (route “0”) on a D-Link router. The parts in RED are the bits you need to fill in before pasting this to your browser:

- 1.) The IP address of your router – the default for Dlink routers is 192.168.0.1 or sometimes 192.168.0.254, unless you have changed it.
- 2.) The name of the route – I like “AyrMesh” but you might choose another name
- 3.) The IP address ON THE ROUTER'S NETWORK of the AyrMesh Hub – the first three numbers will be the same as the IP address of the router; e.g. 192.168.0.x (the “x” number will probably be different)

Set the route – sample URL

- `http://192.168.0.1/Advanced/Routing.shtml?config.route_table[0].enabled=true&config.route_table[0].used=1&config.route_table[0].entry_name=AyrMesh&config.route_table[0].dest_ip=101.0.0.0&config.route_table[0].metric=2&config.route_table[0].dlink=LAN&config.route_table[0].subnet=255.0.0.0&config.route_table[0].gw=192.168.0.100`
- Enter this in the URL bar of a browser and click “Enter” or the “Go” button on the browser

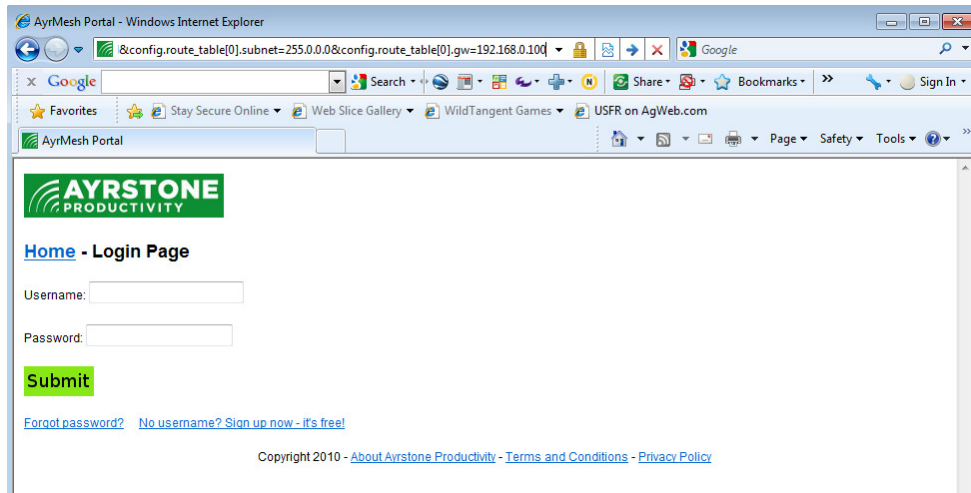


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This is a sample URL you can copy and edit for your router. If your router is at 192.168.0.1 and you're happy with “AyrMesh” as the name of the route, all you have to do is edit the last three digits of the URL.

Copy it from here, paste it into the URL bar of your browser, and press “return” or “Enter” on the keyboard

Editing the URL in the URL bar



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This shows Internet Explorer – I have pasted the URL to the URL bar and am just about to press “Enter” or the “Go” button (the right arrow to the right of the URL bar)

This is what the routing table looks like after configuration

Product Page: DIR-655 Hardware Version: A4 Firmware Version: 1.21

D-Link

DIR-655

SETUP ADVANCED TOOLS STATUS SUPPORT

ROUTING

This Routing page allows you to specify custom routes that determine how data is moved around your network.

Save Settings Don't Save Settings

32--ROUTE LIST

	Name	Destination IP	Metric	Interface
<input checked="" type="checkbox"/>	AyrMesh	101.0.0.0	2	
	Netmask	Gateway		
	255.0.0.0	192.168.100.245		
<input type="checkbox"/>	Name	Destination IP	Metric	Interface
		0.0.0.0	1	WAN
	Netmask	Gateway		
	0.0.0.0	0.0.0.0		

Helpful Hints...

Each route has a check box next to it; check this box if you want the route to be enabled.

The name field allows you to specify a name for identification of this route, e.g. 'Network 2'.

The destination IP address is the address of the host or network you wish to reach.

The netmask field identifies the portion of the destination IP in use.

The gateway IP address is the IP address of the router, if any, used to reach the specified destination.

This is what the “route” page on the router should look like when you're done – note the first entry is a route called “AyrMesh” with the correct parameters, but the “interface” box is blank.

Huge Thanks to loyal AyrMesh user Doug Steinschneider in Fairfield, CT for getting and debugging these directions and sending them to us at AyrMesh!

You're Done!
Congratulations!



That's all!