

Advanced Router Configuration – NetGear



1

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

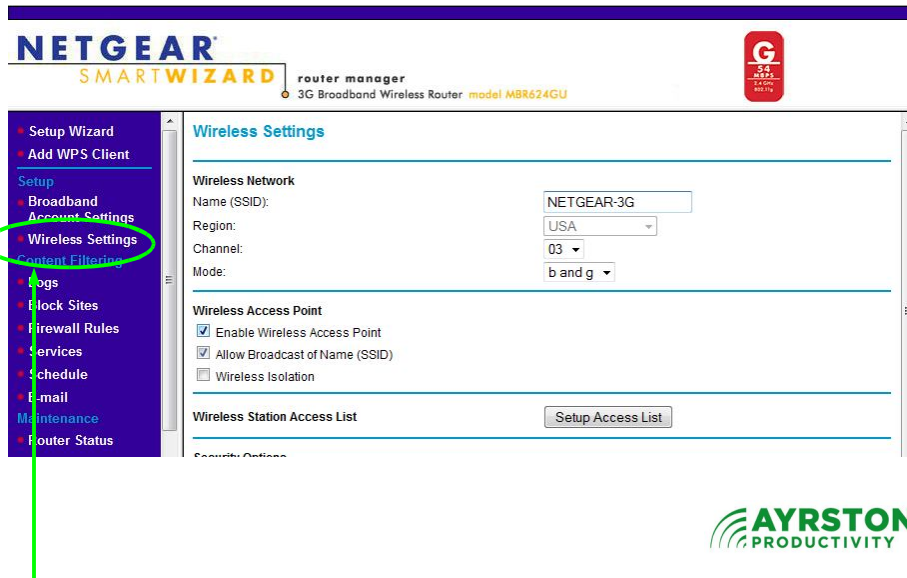
Part 1: Turn off wireless



2

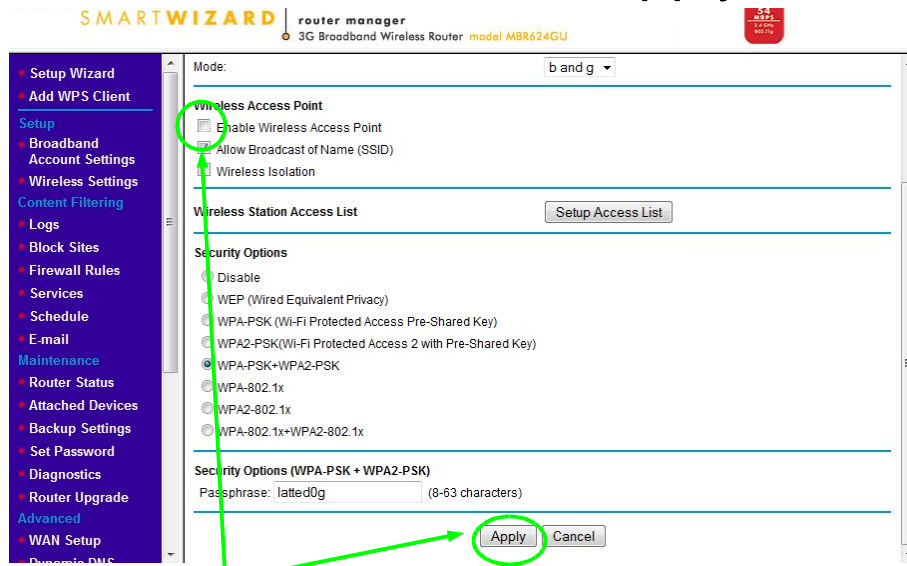
First, we'll turn off the wireless feature in the router. This will turn off the router's wireless access point. You can also choose to just change the channel and leave the wireless access point on.

On the router web interface, click on
“Wireless Settings”



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 and other routers, 192.168.0.1 for NetGear and some other routers). Select the “Wireless Setting” option under “Setup”.

Click off “Enable Wireless Access Point” and click “Apply”



You might also choose to just change the channel – pull down the menu after “Channel” and choose either channel 1 or channel 11 (assuming your AyrMesh Hub is on channel 6). For wi-fi, only use channels 1, 6, and 11 – they are the only channels that do not interfere with one another.

Part 2: Make the IP address of the AyrMesh Hub “Static”



5

This will ensure that your AyrMesh hub gets the same IP address every time the router reboots, so you don't have to check and possibly reset the static route.

Go to “LAN IP Setup” in the “Advanced” group

The screenshot displays the Netgear SmartWizard router manager interface. The top navigation bar includes the Netgear logo, 'SMARTWIZARD' branding, and 'router manager' text. Below this, it identifies the device as a '3G Broadband Wireless Router model MBR624GU'. A red 'G' logo is visible in the top right corner. The left sidebar contains a menu with categories: 'E-mail', 'Maintenance', 'Router Status', 'Attached Devices', 'Backup Settings', 'Set Password', 'Diagnostics', 'Router Upgrade', 'Advanced', 'WAN Setup', 'Dynamic DNS', 'LAN IP Setup' (highlighted with a green circle and a green arrow), 'Wireless Settings', 'QoS Setup', 'Remote Management', and 'Management'. The main content area is titled 'LAN IP Setup' and contains the following configuration options:

- LAN TCP/IP Setup**
 - IP Address: 192 . 168 . 0 . 1
 - IP Subnet Mask: 255 . 255 . 255 . 0
- Use Router as DHCP Server**
 - Starting IP Address: 192 . 168 . 0 . 100
 - Ending IP Address: 192 . 168 . 0 . 200
- Address Reservation**

#	IP Address	Device Name	Mac Address

Buttons: Add, Edit, Delete

Buttons: Apply, Cancel

First, click on the “LAN IP Setup” under “Advanced” in the router's web interface.

Under “Address Reservation,” click
“Add”

The screenshot shows the Netgear SmartWizard router manager interface for a 3G Broadband Wireless Router (model MBR624GU). The page is titled "LAN IP Setup" and includes a sidebar with navigation options like "E-mail", "Maintenance", "Router Status", "Attached Devices", "Backup Settings", "Set Password", "Diagnostics", "Router Upgrade", "Advanced", "WAN Setup", "Dynamic DNS", "LAN IP Setup", "Wireless Settings", "QoS Setup", "Remote Management", and "Management". The main content area is divided into sections: "LAN TCP/IP Setup" with fields for IP Address (192.168.0.1) and IP Subnet Mask (255.255.255.0); "Use Router as DHCP Server" (checked) with fields for Starting IP Address (192.168.0.100) and Ending IP Address (192.168.0.200); and "Address Reservation" which contains a table with columns for #, IP Address, Device Name, and Mac Address. Below the table are buttons for "Add", "Edit", and "Delete". A green circle highlights the "Add" button, and a green arrow points to it from the text above. At the bottom right, there is a logo for "AYRSTONE PRODUCTIVITY" and the number "7".

One of the sections is called “Address Reservation” -
click on the “Add” button below it.

Click on the AyrMesh Hub entry and click “Add”

NETGEAR
SMARTWIZARD router manager
3G Broadband Wireless Router model MBR624GU

Address Reservation

Address Reservation Table

#	IP Address	Device Name	MAC Address
1	192.168.0.100	--	00:15:6d:f0:e4
2	192.168.0.101	LILPUNKIN	88:ae:1d:4a:ca:6c

IP Address: 192 . 168 . 0 . 199
MAC Address: 00:15:6d:f0:e4
Device Name: --

Add Cancel Refresh

AYRSTONE
PRODUCTIVITY

8

This brings up a list of devices getting DHCP addresses from the router. Click on the bubble to the left of the one that corresponds to your AyrMesh Hub and click the “Add” button.

Note: As a practice, I fill in a different IP address for my Hubs – in this case, I am changing “192.168.0.100” to “192.168.0.199” - this is a personal preference; you can assign any IP address within your router's DHCP range.

(side note: Yes, I really call my netbook “Lilpunkin.” Is that wrong?)

And that's it – the reservation is here

The screenshot shows the Netgear SmartWizard router manager interface for a 3G Broadband Wireless Router (model MBR624GU). The interface is divided into a left sidebar with navigation options and a main content area. The main content area is titled "LAN IP Setup" and includes sections for "LAN TCP/IP Setup" and "Address Reservation".

LAN TCP/IP Setup

IP Address: 192 . 168 . 0 . 1
IP Subnet Mask: 255 . 255 . 255 . 0

Use Router as DHCP Server

Starting IP Address: 192 . 168 . 0 . 100
Ending IP Address: 192 . 168 . 0 . 200

Address Reservation

	#	IP Address	Device Name	Mac Address
<input type="radio"/>	1	192.168.0.199	--	00:15:6D:F0:F9:E4

Buttons: Add, Edit, Delete

After you click the “Add” button, the router shows you that the reservation has been entered. Remember the address you have given it (192.168.0.199 in this case).

Part 3: Set the static route



10

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 192.168.0.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

Click on “Static Routes” under
“Advanced,” then click “Add”

SMARTWIZARD router manager
3G Broadband Wireless Router model MBR624GU

Static Routes

#	Active	Name	Destination	Gateway
---	--------	------	-------------	---------

Buttons: Add, Edit, Delete

Left Sidebar (Management section):
E-mail
Maintenance
Router Status
Attached Devices
Backup Settings
Set Password
Diagnostics
Router Upgrade
Advanced
WAN Setup
Dynamic DNS
LAN IP Setup
Wireless Settings
QoS Setup
Remote Management
Static Routes (circled in green)
UPnP
Web Support
Knowledge Base
Documentation

AYRSTONE PRODUCTIVITY

11

Click on the “Static Routes” option under “Advanced.”
Then click on the “Add” button

Static route interface

The screenshot displays the Netgear SmartWizard router manager interface. At the top, the Netgear logo and 'SMARTWIZARD' branding are visible, along with the text 'router manager' and '3G Broadband Wireless Router model MBR624GU'. A red 'G' logo is also present. On the left, a navigation menu lists various settings categories: E-mail, Maintenance, Router Status, Attached Devices, Backup Settings, Set Password, Diagnostics, Router Upgrade, Advanced, WAN Setup, Dynamic DNS, LAN IP Setup, Wireless Settings, and QoS Setup. The main content area is titled 'Static Routes' and contains the following fields: 'Route Name' (text input), 'Private' (checkbox), 'Active' (checkbox, checked), 'Destination IP Address' (four input boxes), 'IP Subnet Mask' (four input boxes), 'Gateway IP Address' (four input boxes), and 'Metric' (input box). 'Apply' and 'Cancel' buttons are located at the bottom of the form. In the bottom right corner, the 'AYRSTONE PRODUCTIVITY' logo is displayed.

This is what the interface looks like for the static routes. On the next slide, I'll go over what to put in here.

Set the route

- Set a route name (I have chosen “AyrMesh”)
- Enter the “Destination IP Address”
 - Always “101.0.0.0”
- Enter the “IP Subnet Mask”
 - Always “255.0.0.0”
- Enter the “Gateway IP Address”
 - The IP address for your Hub, which you just saved
 - Mine is “192.168.1.199”
- Enter “2” for the Metric



13

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 “Metric” is simply a number used by the routing algorithms.

How mine looks – now click “Apply”

The screenshot shows the Netgear SmartWizard configuration interface for a 3G Broadband Wireless Router (model MBR624GU). The page is titled "Static Routes" and contains the following fields:

- Route Name: AyrMesh
- Private
- Active
- Destination IP Address: 101 . 0 . 0 . 0
- IP Subnet Mask: 255 . 0 . 0 . 0
- Gateway IP Address: 192 . 168 . 0 . 199
- Metric: 2

At the bottom of the form, there are two buttons: "Apply" and "Cancel". The "Apply" button is circled in green, and a green arrow points to it from the bottom left of the screenshot.

NETGEAR
SMARTWIZARD router manager
3G Broadband Wireless Router model MBR624GU

AYRSTONE
PRODUCTIVITY

14

Once you have filled in the right values, click “Apply”

Success – you are done!

The screenshot displays the Netgear SmartWizard router manager interface. At the top, the Netgear logo and 'SMARTWIZARD' are visible, along with 'router manager' and '3G Broadband Wireless Router model MBR624GU'. A red 'G' logo is also present. On the left, a navigation menu includes 'E-mail', 'Maintenance', 'Router Status', 'Attached Devices', 'Backup Settings', 'Set Password', 'Diagnostics', 'Router Upgrade', 'Advanced', 'WAN Setup', 'Dynamic DNS', 'LAN IP Setup', 'Wireless Settings', and 'QoS Setup'. The main content area is titled 'Static Routes' and contains a table with the following data:

#	Active	Name	Destination	Gateway
1	Yes	AyrMesh	101.0.0.0	192.168.0.199

Below the table are three buttons: 'Add', 'Edit', and 'Delete'.

This screen shows that the static route has been saved.

You're Done!
Congratulations!



That's all!