

How to configure any wireless router as Access Point

This setup will come in handy where your primary router do not support [WDS](#) (Wireless Distribution system) to expand your wireless network with regular wireless router. In most cases, any user with no experience in networking will plug the secondary wireless router behind the existing routers. Router behind Router is called [NAT](#) over NAT and are not recommend setup. Some basic network skill may need to attempt this setup.

How do you start this setups?

1. In this process, you will need to work on two of you devices individually.

- (1) Main (existing) router.
- (2) Secondary router

2. You will also need to use a single PC on each routers while configuring and secondary router is not connected to your Main (existing) Router. Leave your Main (existing) router connected to your broadband (as is)



3. Now you need to know the "[subnet](#)" of your Main (existing) router

- (1) How do you find out? Login the router interface
 - I. [http:// ip address of router](#) (ex. [http://192.168.0.1](#))
- (2) How do you find out the Router IP?
 - I. Start>run and type cmd. At prompt type ipconfig (for XP)
 - II. Start>search and type cmd. At prompt type ipconfig (for Vista)
 - III. With the result of "ipconfig" on your command prompt, gateway address is more likely to be your "Router's IP"

4. Now you will be required to login to your Main (existing) router to adjust subnet range.

- (1) check default subnet range
ex. 192.168.0.2~192.168.0.254
Router's IP is 192.168.0.1

(2) Quick scenario: You have 10 PC on wired and 5 PC on wireless. This will make total of 15 PC expected plus you may have NAS drive, Print server etc. Let's add 10 more IP available total of 25 IP you need to release by your DHCP server-Main (existing) router



With 25 IP's you need, you can now adjust DHCP server range (under LAN setup on most home end routers) to following"

192.168.0.2~192.168.0.26

Hit apply. you will not see any significant changes at this point

(3) In order to properly install your Secondary wireless router as Access Point, it is recommended to setup outside the DHCP range while any wireless PC will still receive IP from your Main (existing) router. (Secondary Wireless router setup will be followed in #5 ~)

5. Now you will need to setup your secondary wireless router individually. This will also require single PC to Secondary wireless router using ethernet cable. You have already finish setting up your Main (existing) router so unplug the ethernet cable from your Main (existing) router and plug the ethernet cable to to your secondary wireless router. Please do not connect any ethernet cables between



your Main (existing) router and Secondary wireless router. It should be just your PC and secondary wireless router. Please do not use ANY wireless until all the setup procedure is finished

(1) **For Netgear Models-Bypassing "Netgear Smart Wizard"** (This url may behave differently with all the Netgear Router)- Not all models of Netgear router will work with this. If not, you will need to finish "Netgear Smart Wizard " like you would setup as router first.

•<http://router's IP/basicsetting.htm>

•http://www.routerlogin.com/CA_HiddenPage.htm

(2) **For Non-Netgear Models-** You will need to setup your router like you would setup initially

6. If 5-(1) URL did not work for you, do not panic, or if you are using Non-Netgear Models. Most of the routers currently wants you to setup as router. "Netgear Smart Wizard" or other Non-Netgear routers may want to run the wizard to setup your broadband as well. You will also need to know what subnet the Secondary wireless router is running at default. Common subnet is 192.168.0.x, 192.18.1.x, 10.0.0.x

(1) Option 1: take additional ethernet cable and plug ethernet cable to the "Internet port" of your secondary wireless router and to LAN ports of your Main (existing) router. Try finish the wizard and as soon as it's finish, unplug the cable from Internet Port".

(2) Option 2: simple plug your Secondary wireless router to our broadband and finish your wizard. Some Netgear router will not allow duplicate subnet therefore router changes the LAN side of subnet automatically to prevent conflict. Sometimes Option 2 may need to be used.

7. Once you were able to setup your Secondary wireless router with either #5 or #6 instruction, you will need adjust LAN setup on secondary wireless router

(1) Things you should know before continuing the setup on Secondary wireless router.

I. Main (existing) router subnet information

192.168.0.1 (router's IP)

192.168.2-192.168.26 (Subnet range based on 25 Private IP)

II. Secondary router's IP information

Common are 192.168.0.1, 192.168.1.1, 10.0.0.1

(2) These information will make you understand to setup your secondary wireless router. You will find that both router's IP could be same. We will now discuss the changes in next step.

8. Before you change any setting on your secondary wireless router, you may need to set static IP on your PC as same as your Main (existing) router if your secondary wireless router is different subnet range.

Reason for this is that you will require to specify new Secondary wireless router's IP so that it will not duplicate with Main (existing) router's IP. This changes will be able to access Secondary wireless router once setup as Access Point. Below is the typical combination you may find.

- 192.168.0.1- Main (existing) router's Router IP
 - 192.168.1.1- Secondary wireless router's Router IP
- or
- 192.168.0.1- Main (existing) router's Router IP
 - 192.168.0.1- Secondary wireless router's Router IP

In both situation it is smart to setup your PC with static IP

In order to use static IP please follow below. (ex 192.168.1.x is the subnet range Secondary wireless router)

- IP Address: 192.168.1.27
- Subnet Mask: 255.255.255.0
- Gateway: 192.168.1.1
- Primary DNS: 192.168.1.1
- Secondary DNS: 4.2.2.2

9. Now we have basic information laid out. Login the PC to secondary wireless router using ethernet cable. Navigate to LAN Setup or section that you define DHCP server and router's IP on your secondary wireless router

- First adjustments you need to do is to change Secondary wireless router's IP to match the subnet with Main (existing) router.

- Main (existing) router subnet is 192.168.0.x and router IP is 192.168.1.x

- Secondary wireless router current subnet is 192.168.1.x and router IP is 192.168.1.1

(1) Disable DHCP on Secondary wireless router. make sure you still able to access router interface

(2) Now change Secondary wireless router's IP

192.168.1.1 ----->192.168.0.100 (read below)

You need to change the secondary wireless router's IP to match the Main (existing) route's subnet and specify outside DHCP range which setup earlier in instruction #4

192.168.0.2~192.168.0.26

You can choose any IP between 192.168.0.27~192.168.0.254 outside of DHCP server range.

After you do this change, you will loose connection to the Secondary wireless router and you have configured as an Access Point.

NOTE: This section is exercise to match the subnet range with both devices.

10. The last thing you do is to connect Main (existing) router and newly setup as Access Point with LAN Port to LAN Ports (DO NOT USE -Internet port on Access Point anymore). Also change your PC's network properties to "obtain automatically" and restart the PC.

11. With this setup you will now access the newly setup Access Point but using your IE browser with <http://192.168.0.100> and access Main (existing) router with IE browser with <http://192.168.0.1>

adjust your wireless setting and you are finish

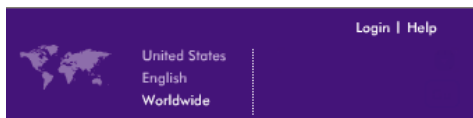
12. Enjoy

Check List

Main (existing) Router Information	Secondary Wireless Router
Model: _____	Model: _____
Routers IP: _____ DHCP Subnet Range: _____ ~ _____	Routers IP: _____
DHCP Server "ON"	DHCP Server "OFF"

Sample Check List

Main (existing) Router Information	Secondary Wireless Router
Model: FVS318V3	Model: WPN824
Routers IP: 192.168.60.1 DHCP Subnet Range: 192.168.60.2 ~ 192.168.60.90	Routers IP: 192.168.60.254
DHCP Server "ON"	DHCP Server "OFF"



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Using WPN824, WGR614, or WGT624 Routers as an Access Point

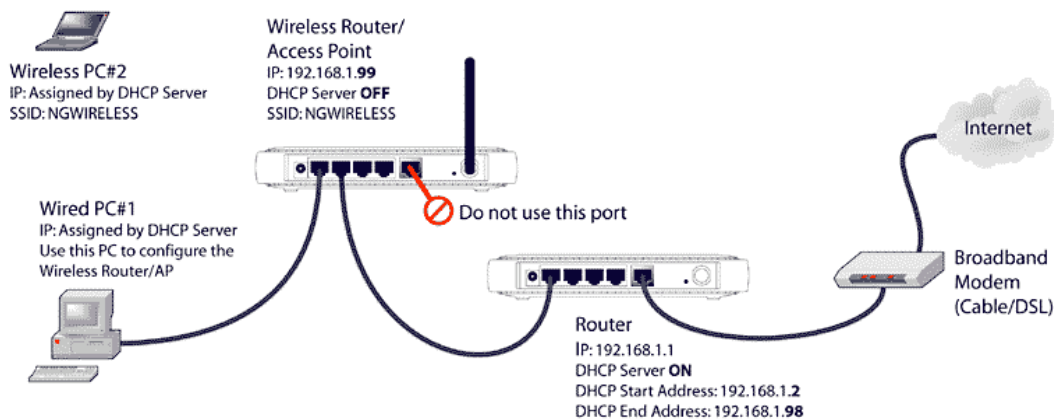
These instructions — for bridging wireless clients to a wired LAN — apply to WGR614v6, WGT624v3, and WPN824. They may also work on other wireless routers.

For FVM318 instructions [click here](#).

To Configure Your Router as an Access Point

Important: Do not connect the *wireless router/access point* to your network yet, as it may have the same IP address as the router that's now connected to the Internet.

- If the *wireless router/access point* is in the default state with the Configuration Assistant running, disable it:
 - Select **Start > Run**, and type http://www.routerlogin.com/CA_HiddenPage.htm
 - Select **Disable Configuration Assistant**.
- If there's a cable on the *wireless router/access point* WAN port, it needs to be disconnected (permanently).
- Configure the *wireless router/access point* with a wired PC, as shown.



- Change the IP address of the *wireless router/access point*.
- Disable the DHCP server of the *wireless router/access point*. Only one DHCP server should be used on the network.
- Connect a LAN port on the *wireless router/access point* to a LAN port on the router, as shown
- Configure SSID on *wireless router/access point* and wireless PCs so that they are the same.

Extra Considerations

- Be careful not to use duplicate IPs within your network.
- The DHCP server used by the router that is *not* the *wireless router/access point* should not have the IP address of the *wireless router/access point* in its DHCP range of IP pool (to avoid accidentally giving out a duplicate IP address).
- If the router that is not *wireless router/access point* is also wireless:
 - Separate the two devices to the edge of their wireless ranges, or else
 - Use different SSIDs.
- If the router with Internet access is also wireless, you should configure different wireless channels on each device. Use the non-overlapping wireless channels 1,6, and 11 to avoid wireless interference.

To Configure the Router with Internet Access

Connect to one of the *wireless router/access point's* LAN Ethernet ports, turn off its DHCP server, and give the wireless router a static IP on your LAN:

- Connect a PC directly to a LAN port on the wireless router with an Ethernet cable.
- Power on the *wireless router/access point*.
- Reboot the PC.
- Log in to the wireless router through a browser. (Usually **192.168.1.1**, with User Name = **admin** and Password = **password**, unless you changed them from the defaults).
- Go to the LAN IP menu and disable the *wireless access point's* DHCP server by unchecking **Use router as DHCP server**.
- Select **LAN IP**, and change the IP to **192.168.1.99**.
- Click **Apply** to save the settings. You will lose the connection to the *wireless router/access point*, since its IP changed.
- Log in to the *wireless router/access point* with the URL: <http://192.168.1.99>
- Connect one of the wireless router's Local (LAN) ports to your existing network.

This completes the *wireless router/access point* configuration.

This is provided as a courtesy for advanced users. Use at your own risk!

This configuration is not supported by NETGEAR, however [ProSupport](#) can help with problems.

Problems, described in detail at the bottom of this article, may include:

- Stopping access point roaming.
- No guarantee of DHCP passthrough.

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- You can now log in to the *wireless router/access point* at its new address of <http://192.168.1.99> and configure wireless features such as WEP and Access Control List
 - UPnP, DMZ, Port Forwarding, and Port Triggering are not used on the *wireless router/access point*, and it doesn't matter how they are configured.
1. Configure the LAN IP address to be within the same subnet as your PCs.
 - Take care not to use an IP address already being used.
 - Limit the number of addresses in the DHCP range and assign an IP address outside of the range to the router you want to use as the Access Point.
 2. Disable DHCP on the *wireless router/access point*.
 3. Connect one of the LAN ports on the *wireless router/access point* to a LAN port on the Router.
 4. Configure the SSID and any security settings on the wireless PCs to match the *wireless router/access point's* SSID and security settings.
 - a. SSIDs must be the same on all wireless devices. (These are case-sensitive: netGEAR is not the same as NETGEAR.)
 - b. Tip: Make sure the wireless PCs can connect before configuring WEP, WPA-PSK, or other wireless encryption.

Potential Issues

1. DHCP configuration may not work reliably because the *wireless router/access point* may not correctly relay DHCP information from the router. Workaround: Use static IPs on the wireless PCs.
2. If your computers use static IPs, make sure the gateway is the IP address of the router connected to the Internet, ie: 192.168.1.1
3. The router's DHCP server's IP range may overlap the statically assigned IP address of the *wireless router/access point*. Workaround: Limit the DHCP range, and set the static IPs outside of the DHCP range.

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ProSafe VPN Summary

All other configuration details should follow the ProSafe Owner's Manual or the ProSafe VPN Client Owner's Manual.

Additional Resources

Here are some additional resources you find useful.

Netgear

The network products manufacturer (<http://www.netgear.com/>)has some tech support notes and White Papers on their VPN/Firewall devices and some tips for achieving basic interoperability. They also host a user support forum (<http://forum1.netgear.com/>)ontheir various products where users can post questions and get answers from their peers.

SafeNet

SafeNet (<http://www.safenet-inc.com/>)is one of the largest OEM providers of VPN client software to VPN/firewall manufacturers. SafeNet has a tech support area (<http://support.safenet-inc.com/>)listing tech notes on their products with various VPN gateways including some individual interoperability examples. SafeNet is the OEM supplier of the Netgear ProSafe VPN Client software.

VPNC

The VPN Consortium (<http://www.vpnc.org/>). VPNC has various writings and White Papers on many manufacturers VPN devices and tips for achieving interoperability.

Practically Networked

Practically Networked (<http://www.practicallynetworked.com/>)has various writings on many manufacturers VPN devices and tips for achieving interoperability. They also have a section dedicated to VPN issues (http://www.practicallynetworked.com/support/VPN_help.htm).

HomeNetHelp

HomeNetHelp (<http://www.homenethelp.com/>)has various writings and White Papers on many manufacturers VPN devices and tips for achieving interoperability. They also host a user support forum on VPN Routers where users can post questions and get answers from their peers.

Disclaimer

Both ProSafe VPN/Firewall Routers and ProSafe VPN Client have several ways of setting up and configuring VPN tunnels. The settings may not be the best for your situation and some settings are situation specific.

This case study is published to guides you to setup your VPN Tunnel and VPNCASESTUDY.COM do not held any responsibility of any mistakes or errors.

Please contact us at info@vpncasestudy.com or visit our site at <http://www.vpncasestudy.com>