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Use a standalone router with DSL service

Many ISPs will either sell or rent you a modem and router combo box. It includes both a DSL modem and a wireless router, all in one box.

These little combo boxes are usually okay, but you might want to upgrade to a better router that supports 5 GHz, has a better firewall, and has more features.

We don't want to simply connect a new router to this one via ethernet, because then we'd have two NAT's and two firewalls, which could cause connection problems for some applications. Basically, it would be sloppy networking, and we don't want that.

Instead, we need our modem to be just a modem, and our new router to handle all of the routing. This was pretty common back in the day, but it isn't common anymore.

To make the modem be just a modem, we need to put it in **Transparent Bridging Mode**. That way, the modem will handle talking to your ISP, and the router will route all of the traffic on your network. Two boxes that are each dedicated to doing their own job.

In this case, we are using a CenturyLink modem and router combo and an Apple AirPort Extreme, but you can apply these concepts to most other DSL modems and home routers.

The Basics: Why is my WiFi so slow and how do I fix it?

- Why Channels 1, 6, and 11? (/training/resources/why-channels-1-6-11.html)
- WiFi Signal Strength Basics (/training/resources/wifi-signal-strength-basics.html)
- Understanding RSSI (/training/resources/understanding-rssi.html)
- New Router with DSL (/training/resources/use-router-with-dsl.html)
- Change Router Settings (/training/resources/change-wireless-router-settings.html)



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Configure the Modem

1. Before you get started, obtain your PPPoE username and password from CenturyLink.

Note: You may be able to log into your current router and copy it out into a text file, but if the password is hidden, you might need to give CenturyLink a call. Just say, "I need my PPPoE username and password" and they should know what you are talking about.

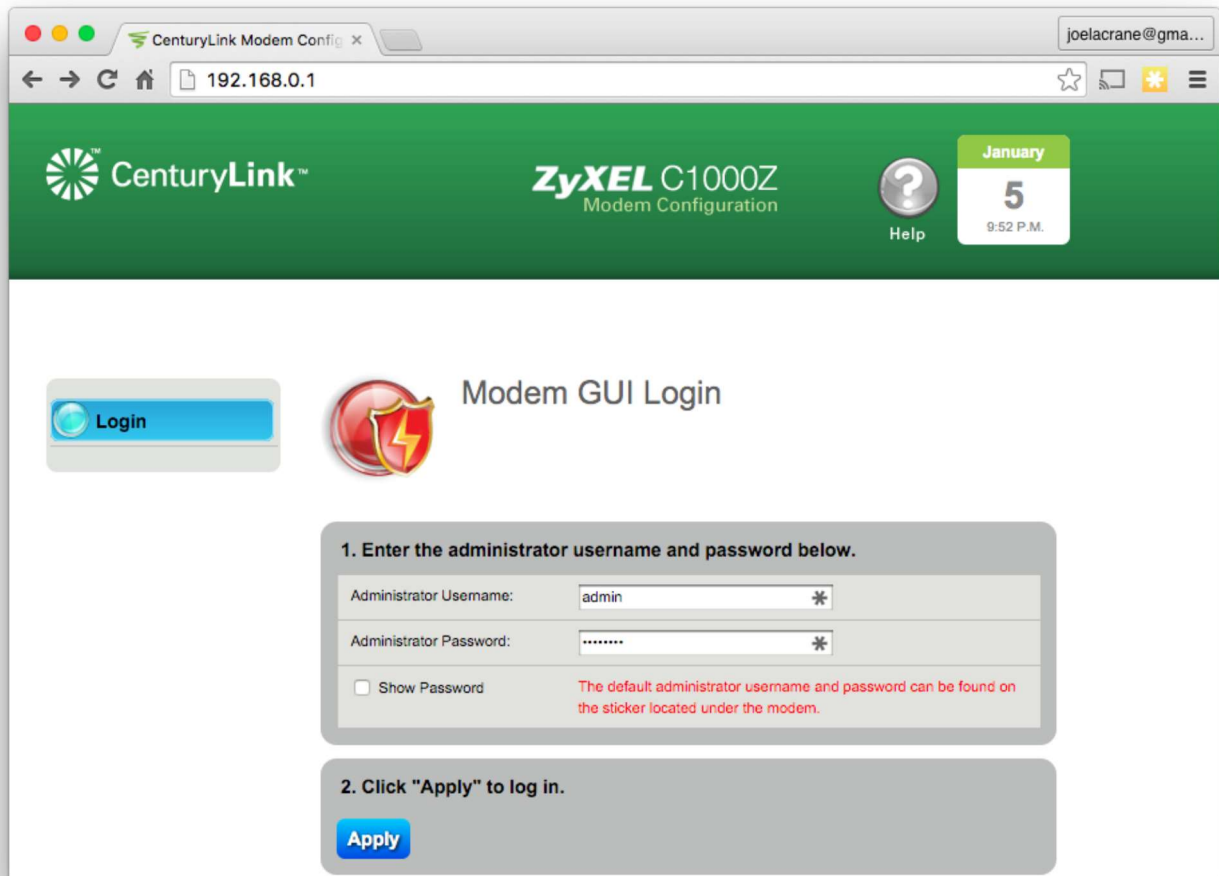
2. Connect to your modem via ethernet. If you're already connected via WiFi, that's fine.

3. Go to 192.168.0.1 in your web browser to open up the settings page for the modem.



4. Log in to your modem with the credentials on the bottom.

It's usually "admin" and a random password.



The screenshot shows a web browser window with the address bar displaying "192.168.0.1". The page title is "CenturyLink Modem Config". The header features the CenturyLink logo, the ZyXEL C1000Z Modem Configuration title, a help icon, and a calendar showing January 5, 9:52 P.M. Below the header, there is a "Login" button and a "Modem GUI Login" section. The login section contains a form with the following fields:

- Administrator Username: admin
- Administrator Password: [masked]
- Show Password: ☐

A red note states: "The default administrator username and password can be found on the sticker located under the modem." Below the form, there is a "2. Click 'Apply' to log in." instruction and an "Apply" button.

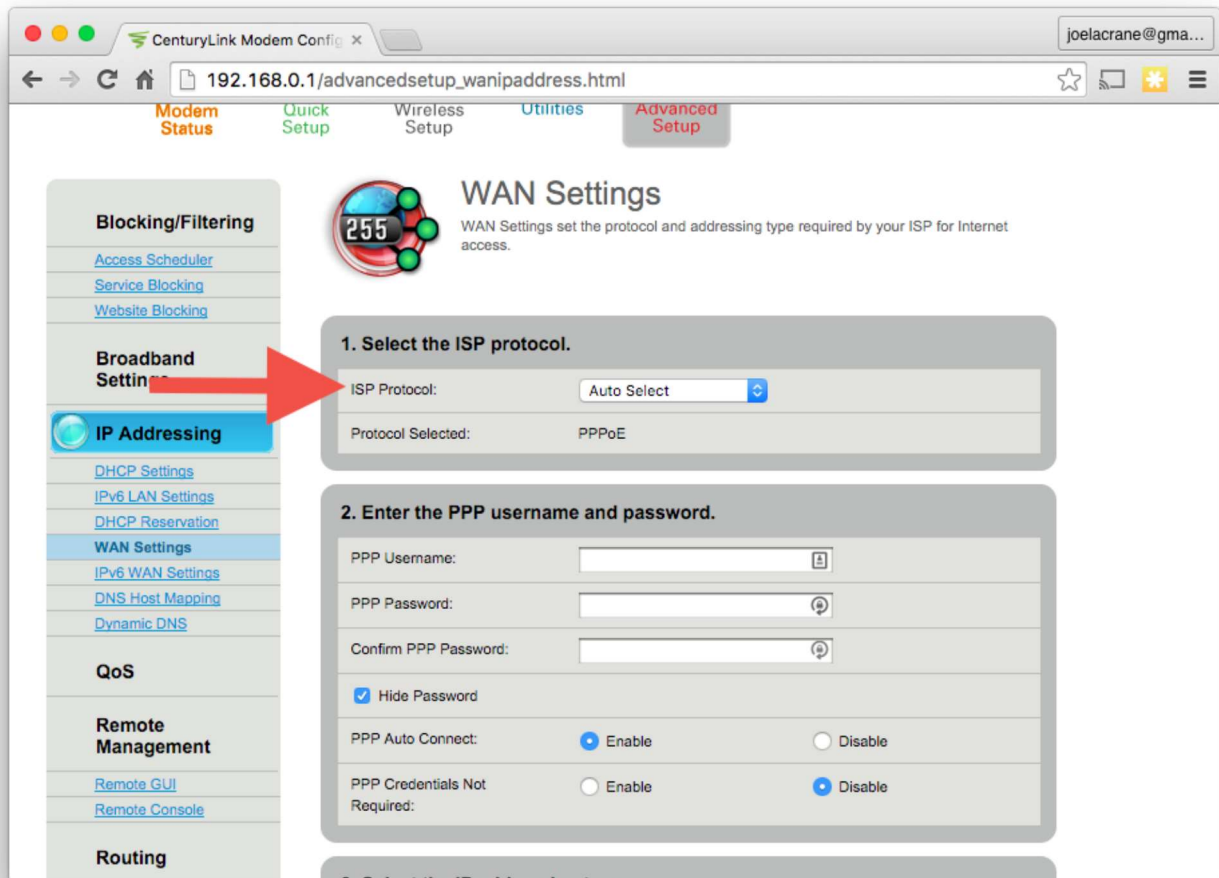
5. Click on **Advanced Setup**.



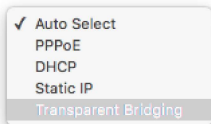
6. On the menu on the left, click on the WAN Settings link.

The screenshot shows a web browser window with the address bar displaying "192.168.0.1/advancedsetup_wanipaddress.html". The browser's address bar also shows "CenturyLink Modem Config" and a user email "joelacrane@gma...". The page has a navigation bar with tabs: "Modem Status", "Quick Setup", "Wireless Setup", "Utilities", and "Advanced Setup". The "Advanced Setup" tab is selected. On the left side, there is a sidebar menu with categories: "Blocking/Filtering" (containing "Access Scheduler", "Service Blocking", "Website Blocking"), "Broadband Settings" (containing "IP Addressing" which is highlighted with a blue bar and a red arrow, "DHCP Settings", "IPv6 LAN Settings", "DHCP Reservation", "WAN Settings", "IPv6 WAN Settings", "DNS Host Mapping", "Dynamic DNS"), "QoS", "Remote Management" (containing "Remote GUI", "Remote Console"), and "Routing". The main content area is titled "WAN Settings" with a sub-header "WAN Settings set the protocol and addressing type required by your ISP for Internet access." Below this, there are three sections: "1. Select the ISP protocol." with a dropdown menu for "ISP Protocol" set to "Auto Select" and "Protocol Selected" showing "PPPoE"; "2. Enter the PPP username and password." with fields for "PPP Username", "PPP Password", and "Confirm PPP Password", a checked "Hide Password" checkbox, and radio buttons for "PPP Auto Connect" (set to "Enable") and "PPP Credentials Not Required" (set to "Disable"); and "3. Select the IP addressing type" which is partially visible at the bottom.

7. Find the **ISP Protocol** drop-down menu.



8. Select Transparent Bridging from the ISP Protocol menu.



9. Click the **Apply** button to save settings and reboot the rout... I mean, modem, since now it's really just a modem.

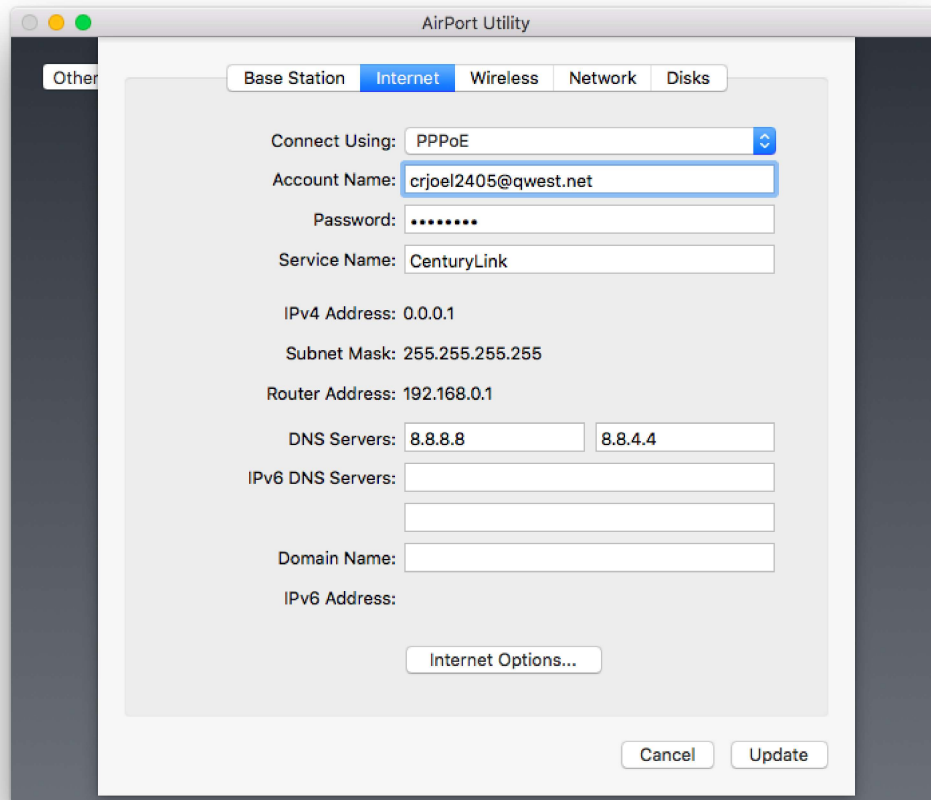
Configure the Router

Now that the modem/router combo is in "Transparent Bridging" mode, it's no longer functioning as a router, and is only functioning as a DSL modem. We are now ready to go configure our new router, which in our case is an Apple AirPort Extreme (but you can apply these concepts to any consumer wireless router).

11. Unplug your ethernet cable from the modem, and plug it into one of the LAN ports on your new router.

12. Open the AirPort utility, and click on the **Internet** tab.

13. Change **Connect Using** to PPPoE, and using the CenturyLink account info we looked up earlier, fill in the **Account Name** and **Password** fields.



14. As a bonus step, change the DNS servers to 8.8.8.8 and 8.8.4.4, and configure your wireless network. Be sure to give it a name you like and enable 5 GHz.

Note: When you are done with this guide, be sure to use inSSIDer to pick the best channel for your new router!

15. Click the **Update** button to save the changes.

16. Connect an ethernet cable from the AirPort Extreme's **WAN port** and **port 1** on the modem.

17. The AirPort Extreme will tell the modem to dial in, and the light on the AirPort Extreme will turn green to say that everything is working. Connect via WiFi, and enjoy your new router!

Next Lesson...

Change Wireless Router Settings (change-wireless-router-settings.html)

Work-From-Home WiFi

With the spread of COVID-19 throughout the world, working from home is no longer a luxury — it's a necessity. That's why we've put together the tutorials and tools to ensure your home WiFi is ready for your next important video conference or work project.

**Because you need more than just
Netflix and Grumpy Cats from your home WiFi.**

[Read Tutorials \(/work-from-home-wifi\)](#)

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