This article describes how to manually configure a Linksys Router for broadband DSL that uses PPPoE (Point-to-Point Protocol over Ethernet) for authentication. For automatic configuration options, please try:

1. Linksys Easy Connect (see **Answer ID 1650** for more information), or
2. The Linksys Setup Wizard CD-ROM software that came with your Linksys Router. Simply insert this CD-ROM into an online computer *before* connecting your Linksys Router, and the Wizard will provide step-by-step instructions on how to install and configure your router.

   If you are unable to set up your Linksys Router by using one of the above options, use the steps below to manually configure your router.

NOTE: It is recommended that you print this article for offline reference.

STEP 1: Before You Begin
In order to set up your Linksys Router, be sure to first have the following:

1. A Linksys Router.
2. A DSL modem.
3. A working computer that can be wired in directly to the router for initial configuration and testing.
4. Two (2) standard Ethernet network cables. *Linksys Routers come with one (1) standard network cable that you can use*.
5. The PPPoE DSL username and password assigned by your Internet Service Provider. Depending on the provider, your username format might be similar to **username**, **vzn123456**, or an e-mail address (**username@isp.net**). If you are not sure what your username and password are, contact your Internet Service Provider for more information.

STEP 2: Check Your Internet Connection
Before installing your Linksys Router, it is important to first verify that you can successfully access the Internet by connecting directly to your modem (*__without__* your Linksys Router installed).

1. If you are connecting for the first time, follow the instructions provided by your provider to set up your modem and computer for online access.
2. Verify that you are able to access the Internet without any problems. If you are not able to get a connection, contact your Internet Service Provider for assistance.

When you are able to access the Internet using your modem, continue to Step 3 and proceed with the installation of your Linksys Router.

STEP 3: Connect the Hardware

Follow these steps to connect your Linksys Router to your modem and computer.

1. Shut down your computer and unplug the power cords connected to your modem and Linksys Router if they are currently powered on.
2. Disconnect the network cable that connects to the back of your computer.
3. Connect the network cable that you just removed to the **Internet** port (or **WAN** port) located on the back of your Linksys Router. *Your modem should now be connected to your Linksys Router.*
4. Connect a **second** network cable back into your computer (into the same port that was disconnected in #2).
5. Connect the other end of the second network cable to one of the numbered ports located on the back of your Linksys Router (labeled **1**, **2**, **3**, **4**, etc.). *Your computer should now be connected to your Linksys Router.*

   The following diagram shows how your network should be connected. Verify that your connections are correct, and continue to the next step.
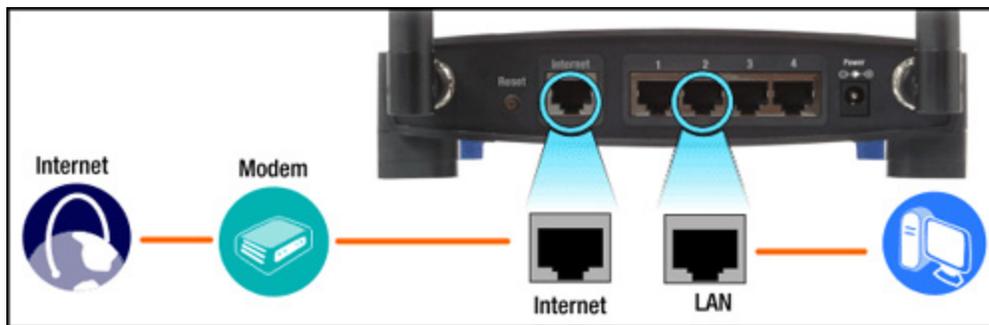
6. Plug the included power adapter into the router's **Power** port. Then, plug the other end of the power adapter into a nearby electrical outlet to supply power to your router.
7. Turn on your computer.

   *Do **not** turn on your modem at this time. Only your router and computer should be turned on for Step 4.*

STEP 4: Configure the Router

Follow these steps to configure your Linksys Router.

1. On the computer that is connected to the Linksys Router, open a web browser such as **Internet Explorer** or **Netscape**.
2. Type http://192.168.1.1 into your browser's Address or Location bar and click **Go** or press the [**Enter**] key on your keyboard. *The IP address 192.168.1.1 is the default IP address of Linksys Routers.*

3. A user name and password prompt will appear. Leave the user name field blank (empty), and type in **admin** (lowercase) for the password. *The password <u>admin</u> is the default password of Linksys Routers.*

   NOTE: The following username/password prompt screen will vary by operating system.
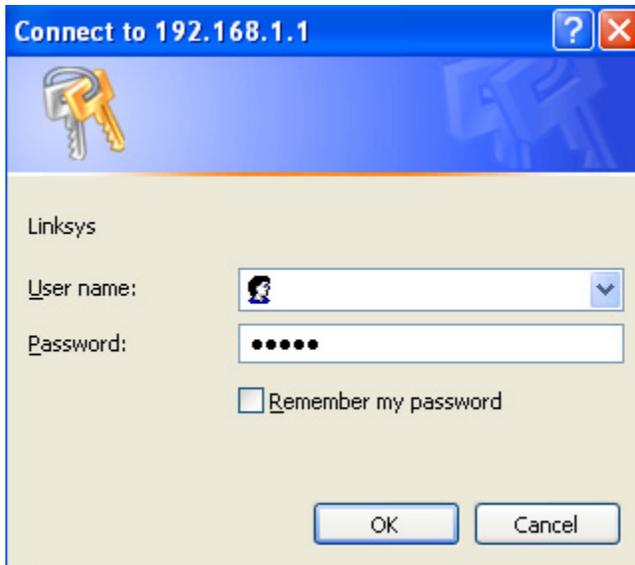
4. Once logged in, the router's web-based Setup utility should load. In the section labeled **Internet Connection Type,** or **WAN Connection Type** depending on router model and firmware version, select the **PPPoE** option on the drop down list.
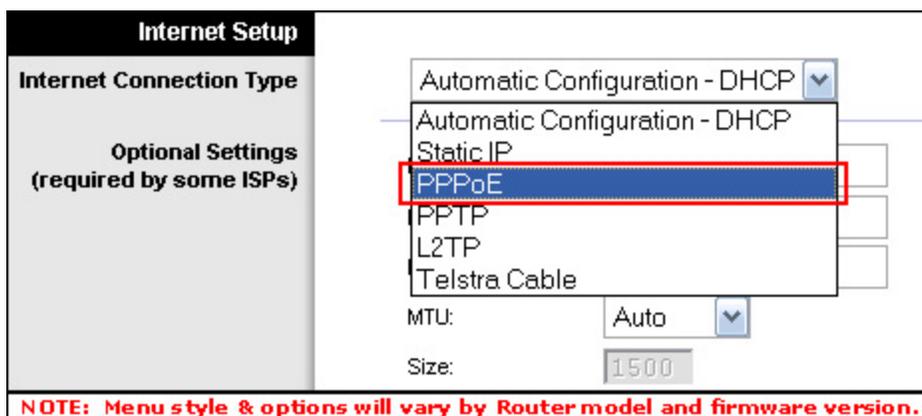
Click <u>here</u> to view what an older Linksys router interface looks like.

5. Once PPPoE is selected, enter your PPPoE DSL username and password provided by your Internet Service Provider into the router's **User Name** and **Password** fields. Depending on the provider, your username format might be similar to **username**, **vzn123456**, or an e-mail address (**username@isp.net**). *If you are not sure what your username and password are, contact your Internet Service Provider for more information.*

   NOTE: Be sure to clear the 'Password' field **before** entering your account password.

6. If the **Keep Alive** option is not selected, be sure to select it instead of the 'Connect on Demand' option. The 'Keep Alive' option will ensure that your connection stays connected even when it is not in use.
7. Scroll down to the bottom of the page and click on the **Save Settings**, or **Apply** button depending on router model, to save your changes.
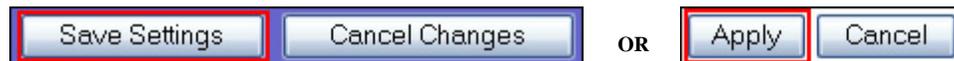
8. Once your changes are saved, you will be presented with a button to return or you will be returned to the previous page automatically. If prompted, press **Continue** to return to the router's Setup page.
9. Close and exit the web browser.

STEP 5: Power Cycle
Follow these steps to power on and off your devices in the correct order.

1. Shut down your computer.
2. Verify that your modem is turned off (either by unplugging the power cord or by using a power switch on the modem).
3. Unplug the power cord from the back of your router and confirm that the front panel lights turn off.

   At this stage, all devices (your modem, router, and computer) should be powered off.

4. Wait for about 30 seconds.
5. Plug in the modem's power cord. If there is an additional power switch required to power on your modem, be sure to use it to apply power and turn on the modem.
6. Observe the indicator lights located on the modem and wait for the lights to stop blinking. A light indicating **Power** as well as **DSL** (or **Internet**, **Online**, **Ready**, etc.) should become solid to indicate a connection to your Internet Service Provider. *The names of modem lights will vary depending on modem brand and model*.
7. Next, plug in the router's power cord. After a few seconds, the **Internet** light (or **WAN** lights) on the front of the router as well as additional lights on your modem should turn on to indicate a connection.
8. Turn on your computer.

STEP 6: Check the Connection
Follow these steps to check your connection to your Internet Service Provider.

1. On the computer that is connected to the Linksys Router, open a web browser such as **Internet Explorer** or **Netscape**.
2. Type http://192.168.1.1 into your browser's Address or Location bar and click **Go** or press the [**Enter**] key on your keyboard. *The IP address 192.168.1.1 is the default IP address of Linksys Routers.*

3. A user name and password prompt will appear. Leave the user name field blank (empty), and type in **admin** (lowercase) for the password. *The password admin is the default password of Linksys Routers.*
4. Once logged in, the router's web-based Setup utility should load. Click on the **Status** tab to load the router's Status page.

   NOTE: *The location of the Status tab will vary depending on router model and firmware version:*
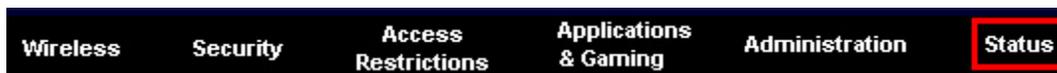
OR

5. In the Status page, look for a section labeled **Login Status** (or **PPPoE Status** depending on router model and firmware version). This will indicate the status of the connection.

One of the following statuses may appear:

- **Connecting**
  If the status repeats with **Connecting**, your Linksys Router is having problems connecting to your Internet Service provider. Repeat the 'Power Cycle' steps in Step 5 and try again. Be sure to check for solid status and activity lights on the modem and the **Internet** light (or **WAN** lights) on the router. If these lights do not turn on or show any activity, try using different network cables, power cycle all devices as described in Step 5, and try again.

- **Disconnected**
  If the status shows **Disconnected**, your Linksys Router was not able to establish a connection to your Internet Service provider. Repeat the 'Power Cycle' steps in Step 5 and try again. Be sure to check for solid status and activity lights on the modem and the **Internet** light (or **WAN** lights) on the router. If these lights do not turn on or show any activity, try using different network cables, power cycle all devices as described in Step 5, and try again.

- **Connected**
  If the status is **Connected**, your Linksys Router successfully established a connection to your Internet Service provider and you should be able to **access the Internet** !

OR

> **NOTE:** *If you are not able to access the Internet even with a **Connected** status, restart your computer and try to access the Internet again.*

<u>**Troubleshooting**</u>
In the router's Status page, you may be prompted with one of the following error messages:

- **PPPoE Authentication Failed**
  The PPPoE user name and password you used is incorrect. Repeat the router configuration steps found in Step 4 and verify the spelling and/or format of your login or use another user name and password. Then, perform the 'Power Cycle' steps in Step 5 and try again.

- **Cannot Connect to PPPoE Server**
  The router was unable to connect to your Internet Service Provider. Repeat the

'Power Cycle' steps in Step 5 and try again. Be sure to check for solid status and activity lights on the modem and the **Internet** (or **WAN**) lights on the router. If these lights do not turn on or show any activity, try using different network cables, power cycle all devices as described in Step 5, and try again.

- **PPPoE LCP Negotiation Failed**
  The router was unable to make a connection to your Internet Service Provider. Repeat the router configuration steps found in Step 4 and verify the spelling and/or format of your login or use another user name and password. Then, perform the 'Power Cycle' steps in Step 5 and try again.