

# Wireless Router Lab

Created by Joshua Newell, A+

Create a team of two partners.

Partner closer to the wall/partition will be the *Wired Partner*

Partner closer to the walkway will be the *Wireless Partner*

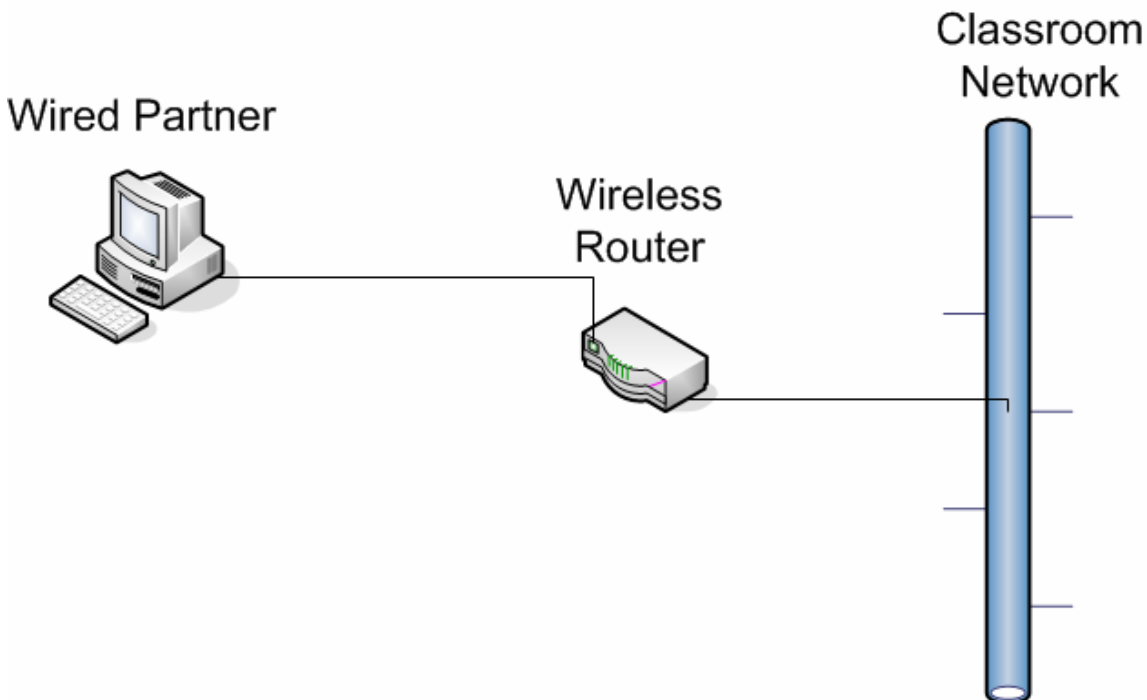
## *Wired Partner:*

- Plug the router into the power socket.

The settings on the router may or may not have been set back to default by the last class.

- Reset the router to the factory defaults by holding down the reset button (you will need a pen or a paper clip) until the all the lights on the router flash simultaneously.
- Remove the CAT 5 cable from the top/built in NIC on your machine.
- Plug the classroom wire RJ 45 into the uplink/internet/wan port on the router.
- Plug the supplied patch cable into one of the switch ports of the router and into the top/built-in NIC.

You have just put a router between the wired machine and classroom, effectively putting the wired machine on a different network. In a home environment, the router is typically connected to the ISP/internet.





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Go to the properties for your NIC (Probably called "Local Area Connection"). Verify that you're using the Intel Gigabit card.

- Configure the TCP/IP settings as follows:
  - Obtain IP Automatically
  - Obtain DNS Automatically
- Perform an `ipconfig /release` and `ipconfig /renew` to get a DHCP address from the router.
- Note the IP address of the default gateway. This is the IP address of your router.
- Open your browser, and disable the use of the proxy server.

Most SOHO routers have a web based configuration application.

- To configure the router, point your browser to `http://the IP address of the router` (example: `http://192.168.1.1`)
  - login: admin
  - Password: password
- **Refuse the setup wizard.** (You are an advanced user aren't you?)

## Basic Settings

- Change Account name to `HLT-N` where `N` is your router # listed on the pink sticker on the bottom of the router.
- Change Domain name to `hyperlearning`
- Change "Internet IP Address" to "Use Static IP Address"
  - Note: have to use TAB to move between address fields
  - IP address `192.168.5.11N`
  - IP Subnet Mask `255.255.255.0`
  - Gateway IP address `192.168.5.254`
- Change "Domain Name Server (DNS) Address"
  - Primary DNS `192.168.5.254`

APPLY...

## Wireless Settings

- Change Name (SSID) to `HLT-N`
- Change channel to 01, 03, 05, 07, 09, or 11 (HLT-1 -> ch 1, HLT-2 -> Ch 3, etc)

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(Note: there are actually only 3 non-overlapping channels when using 802.11g - 1, 6, & 11. In the real world, you could not have wireless WAPs that have overlapping channels within wireless radio distance of each other)

APPLY...

## Set Password

- Change password
- Old Password: password
- New Password: P@ssw0rd (classroom default)

APPLY...

- LOG IN WITH NEW PASSWORD WHEN PROMPTED

## LAN IP Setup

- Change IP Address to 192.168.12N.1

APPLY...

Internet Explorer will fail

- Do an ipconfig /release, ipconfig /renew
- Re-connect to router using its new IP address: http://192.168.12N.1 (etc)  
Login: admin  
Password: P@ssw0rd
- Refuse Firmware upgrade assistant
- Test your connection to the router by pinging 192.168.12N.1
- Test your connection to the outside network by pointing your browser to http://192.168.5.200. You should see a test page.

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## *Wireless Partner:*

**STOP!** Read all the directions first before you do anything else.

You will now setup a wireless NIC on the wireless partner

- First, disable the wired LAN connection on the wireless partner.
- Next, carefully read the manual for the wireless NIC. Also note that we will make some slight changes from what the manual says.

Did you catch the directions in the wireless device setup pamphlet that were **bolded**?

## **Variations from the device manual:**

- Optimize for WIFI.
- Use the Microsoft Zero Configuration Tool, not LevelOne's.
- Accept the unsigned driver and ignore any Microsoft Windows install screens that pop up

The install takes a couple minutes and will appear to be doing nothing for a while. Be patient. The LevelOne wireless configuration tool will appear once the installation is complete.

- Make sure you click finish on the install wizard before you move on (it's hidden behind the LevelOne wireless configuration tool)
- Close the installer.

This install program has a problem. It starts LevelOne's configuration tool which will conflict with the windows Zero Configuration Tool. To fix this:

- Close the LevelOne utility **from the system tray** (Right-click->exit).

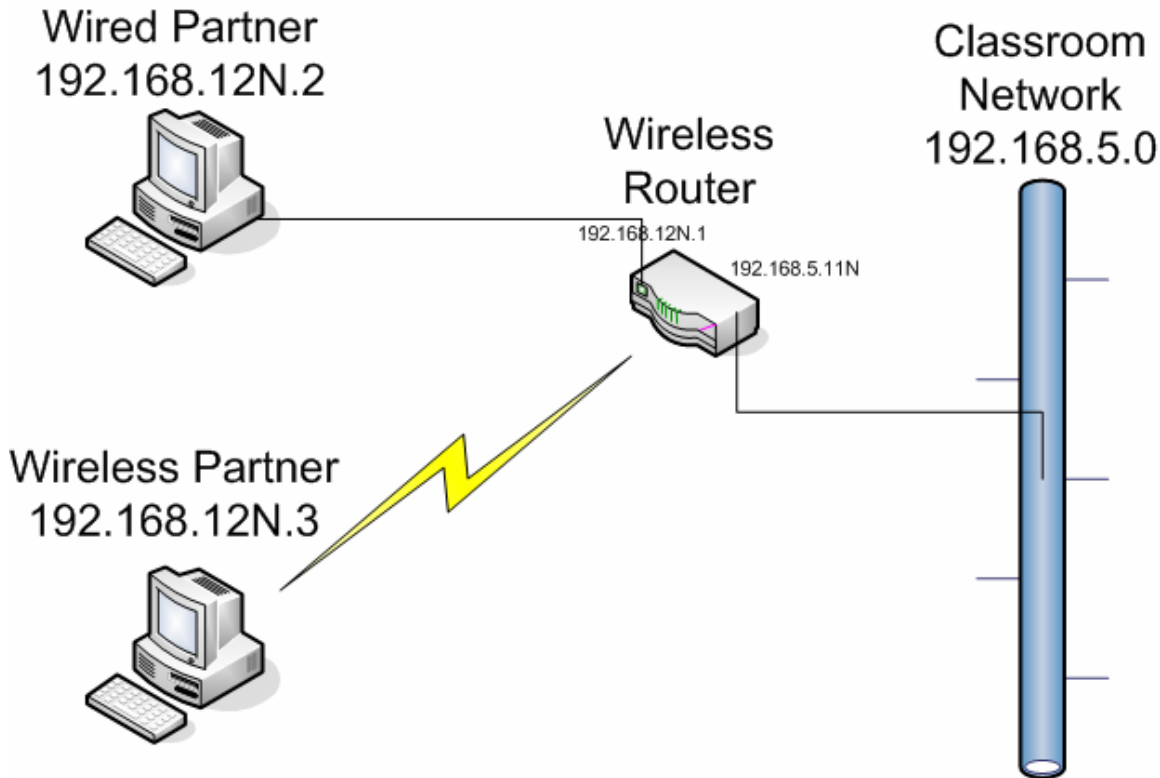
Now our device is installed and we are ready to connect to our wireless router.

- Double-click on the wireless connections icon in the system tray.
- Double click on the AP named HLTN (N is the router's number)

You should now be connected wirelessly through the router.

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- Change the proxy settings in Internet explorer to disable proxy
- Test your connection to the router by pinging 192.168.12N.1
- Test your connection to the outside network by pointing your browser to <http://192.168.5.200>. You should see a test page.



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*Configure Security:* (This page is reserved for future expansion to add WEP and WPA security)

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## *Clean up:*

### *On the wired machine*

- Set TCP/IP settings back to static:  
IP: 192.168.5.computerNumber  
Subnet: 255.255.255.0  
Default gateway: blank  
DNS: Use the following->blank
- Unplug the wired machine from the router and replace the original cat5 cable.

### *On the wireless machine*

- Enable the wired NIC
- Unplug the wireless USB NIC
- From add/remove programs, remove the LevelOne wireless adapter

### *On both machines:*

- Make sure that IE is set to use the proxy:  
192.168.5.254 port 8080 and to bypass for local
- Test to make sure you can get to the internet on both machines by going to [www.cnn.com](http://www.cnn.com)

### *Equipment:*

- Put the router, router power adapter, USB NIC, instructions, and driver CD back into the correct bag.
- Make sure the router is double bagged with the pink sticker visible on the same side as the bag label.
- Loosely roll and twist tie the patch cable.

*Certified to operate in Virginia by the State Council of Higher Education of Virginia*

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