BUG-BYTES

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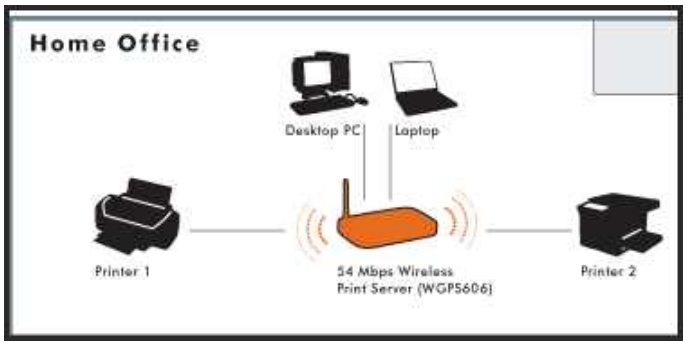
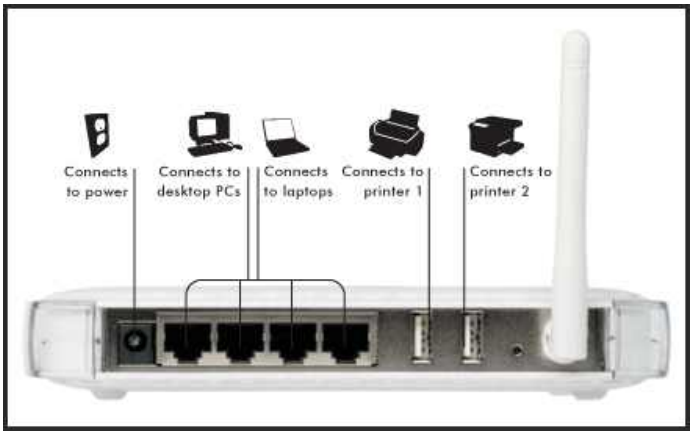
DO YOU NEED A PRINT SERVER?

It is hard to keep networked computer energy costs low if you have to leave one computer on all the time so you can print from your laptop or other remote computer.

A wireless print server (or a wireless printer) lets you (or others) print even when your main computer is turned off, such as your desktop computer. Not only does this save energy, but it also keeps your remote computer users happy when they share a common printer. They never have to wonder why their print jobs are stuck in a print queue and won't print.

This next screen shot demonstrates typical wireless connections of a print server. In this Netgear WGPS606 example, the print server can connect to up to two printers via USB cables, and connect to computers via wireless connections or by ethernet cables. The print server has four ethernet ports.





The wireless part has to do with communicating from wireless enabled computers through the print server switch to the connected printers. USB cables connect up to two printers (in this example), and the switch provides up to four ports if you want to connect some of your computers via ethernet cable, such as the desktop connected to your router.

HOW TO SELECT A PRINT SERVER

Determine whether or not you need a wired print server, or a wireless print server that also handles wired connections, and how may computers will share the same printer or printers through the print server. Some printer servers will handle more than one printer. The Netgear Print Server in this example handles up to two printers.

Do a little research to determine which if any print servers are compatible with your particular printer or printers. You will find that information on the vendor's web site for the products you are considering. In addition, check that the print server matches the level of security that your network uses and the specification of your network (whether it is an 802.11b, 802.11g, or an 802.11n, B, G or N network.)

Check how the product that you are considering will hook up with your computer and your printer. That is, does it connect to your printer via a USB connection, by a parallel port printer cable, or by an ethernet cable?

HOW TO SETUP YOUR PRINT SERVER

Carefully follow the step-by-step setup instructions that come with your print server. For instance, if the manufacturer of your print server says to install the software first, or to plug in the device first, be sure to do just that. Also, don't plug in the print cable until the directions tell you to do so.

In the case of the Netgear WGPS606 print server, the setup directions were a little confusing. You start by hooking up the hardware first. The directions say to hookup the Print Server first and to get it operating correctly. Then, and only then, you setup each separate computer.

HARDWARE PREPARATIONS

1. First, disconnect the USB printer cable from your computer and plug it instead into the print server as

printer one. Next, plug an ethernet cable into the print server on one end, and plug the other end of the ethernet cable into a second network interface card. Yes, you may need two network interface cards to make setting up easier for your print server, and to make it easy to change some settings in your router. Normally, the first network interface card is used to connect to your router. It is how you connect to the internet when you use ethernet cable rather than a wireless connection.

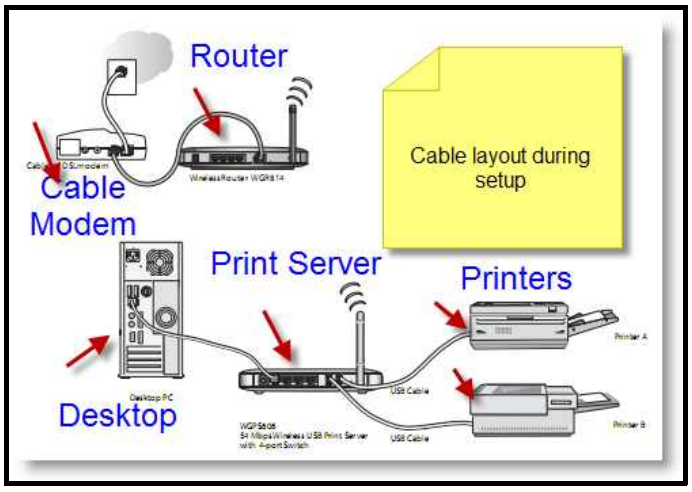
2. Plug in the power supply cable that comes with the print server into the print server, and be sure that your router is powered on and your computer is turned on.
3. Turn on your printer if it is not already on.
4. Turn on your computer if you have not already done so.
5. You should see lights on the front of your cable modem, your router, the print server, your printer, and your computer. If all of the above are not turned on and properly connected, then your print server setup will not work correctly. See the cable layout below.

After you complete the setup, print jobs will flow from your local or remote computers through the print server to your printer. When the setup is complete, you can disconnect the ethernet cable from your computer to the print server. If your desktop computer is wired to your router, print jobs from your desktop will be routed through the router to the print server.

SOFTWARE PREPARATIONS

1.Download the current software for your print server. Temporarily, turn off your firewall. If you don't do that, your setup may fail or be incomplete.

0.Download the latest firmware update and update your print server's firmware if you have an old version. Follow the vendor's instructions. Usually, it is just a matter of clicking on the file and waiting until the update is complete. See the next article for more detailed instructions.



0.Open the folder for your print server's software. Click on setup and follow the on screen setup instructions. The software will automatically detect the print server.

0.If you have any problems setting up your print server use your favorite search engine to search for setup information for your particular print server. For example, you may have a mixed environment with computers with different operating systems and different printers. If all else fails, you can use the reset button on the back of the server to put the server back in its factory configuration. Then you can start over.

Below is a picture of the Netgear WGPS606 print server used as an example in this article. It is the device I use.

Sometimes it is necessary to restart your network. Netgear recommends the following sequence for their print server:

0.Turn off the cable modem.

0.Turn off the cable router

0.Turn off the print server

0.Turn off your printer

0.Turn off your computer, if it is not already turned off.

0.Turn back on the cable modem. Wait until all of the lights (except activity light) light up before going to the next step.

0.Turn back on the router. Wait until the lights settle down.

0.Plug back in the print server. (Sometimes, it is only necessary to unplug and then plug in again the power cord to restart the print queue.)

0.Turn on your printer. If necessary, reset the default paper settings. On some printers, the settings may change to default settings that are different from what you want.

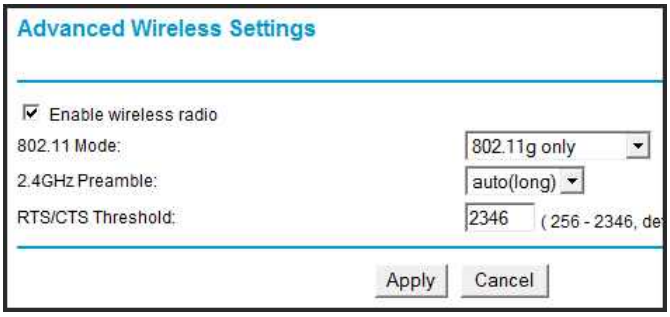
WHAT YOU SEE DURING INSTALLATION

The following screen shots illustrate what you see as part of the Netgear print server setup. Your installation instructions may be different, but these illustrations give you an idea of what you might see.

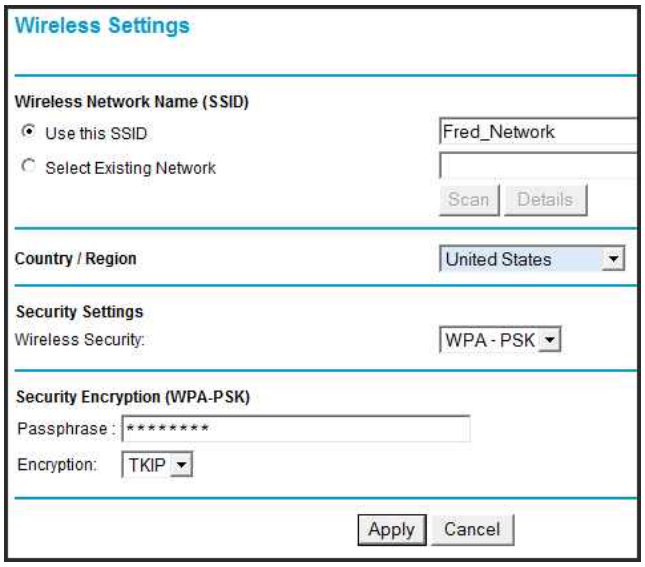
Use the same name (Service Set ID) that you used for your network. In the example below, it is Fred_Network. If your network devices support it, choose the WPA or the more secure WPA2 security setting. Choose a passphrase. The Netgear print server supports TKIP encryption but not AES. TKIP is selected in the first example labeled Wireless Settings.In the second box at the left, Print Server Settings, the software suggests using 192.168.1.250 as the IP address for the print server based on the Linksys router that I have. The software will suggest what setting you should use with your particular router. Enter the number that it suggests in your router's setup program.

For example, here is what I see for my Linksys WRT54GS router. I included the suggested range where you see the yellow-curved arrow as range 02. This enables the Linksys router to see the Netgear print server.

In the third box at the right you select the wireless mode that the print server should use. I have selected wireless G (802.11g) because all of my wireless devices support that standard. In other words, I do not have any wireless G or wireless N devices, nor am I using a mix of devices.



As long as you have all of your devices turned on, properly connected, and you follow your print server vendor's setup instructions carefully, you should be up and running shortly.



You will experience a deep feeling of satisfaction when your first print job rolls from your laptop or other wirelessly

MATCH THE SECURITY MODE, WPA ALGORITHM, AND SHARED KEY OF YOUR ROUTER, NETWORK CARDS AND PRINT SERVER

connected computer prints while your main computer is turned off. Happy days are here again.

Note: Sometimes it is best to turn off the security mode of your networked devices, at least until you see that every thing works correctly. When everything works, you can then turn your security setup back on.

Note:

New wireless printers make connecting to the printer even easier. The other day I setup a Canon Pixma MX860 wireless printer. The printer was setup in no time at all and talking to a laptop computer wirelessly. I was surprised at how easy it was to get printing wirelessly. During the setup it temporarily connected to the Internet with a USB cable.

HOW TO UPDATE FIRMWARE

GIVE YOUR FIRMWARE NEW SMARTS

According to www.answers.com firmware is a category of memory chips that hold their content without electrical power. In other words, the firmware chips can be thought of as 'software-on-a-chip.' They retain their programming after your computer is turned off.

Two major products that contain firmware (besides your computer's BIOS) are your DVD/CD drive and your network router (and of course your print server). Newer firmware can add support for Vista, and new features, such as letting your DVD/CD drive work with the latest copy protection schemes.

In the case of a print server, which also contains firmware, you can update the firmware for better performance. For instance, I updated my Netgear WGPS606 print server from its version 1.20 firmware to version 1.25, and my Plextor PX-716A DVD/CD drive from version 1.08 to version 1.11.

GENERAL STEPS TO UPDATE FIRMWARE

So-called firmware can be reprogrammed to reflect changes in the device's environment that occurred after the original chip was produced. Reprogramming the device can add functionality, including support for a later operating system, and it can improve performance. The term 'flashing' is often used for the process of updating firmware.

Below is the option I see when I open the firmware upgrade in a Linksys WRT54GS router.

HERE ARE THE STEPS:

Write down the make and model number of the device, and the current firmware version, if it is known. For some devices, you will find the model number and version on the bottom or back of the device (such as for a router). You can find the model number for your DVD/CD drive from the Windows device manager. Alternatively, you can look up the information with the free version of PC Wizard 2008 from . . . . . .

http://www.cpuid.com/pcwizard.php

Use your favorite search engine to search for your device's firmware upgrade. For instance a Google search will often find the exact link you need much faster than trying to locate it on the vendor's web site buried deep within nested menus.

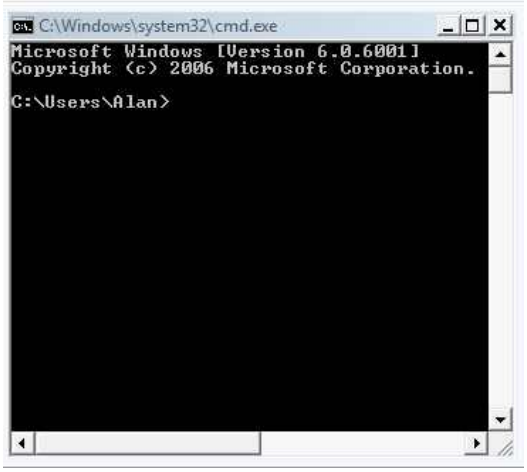
A sample search is 'Netgear WGPS606 firmware' without the quotes. See the following page on the internet as a sample of what you might see as a result of your search. Note the box on the left has the firmware update information.

http://kbserver.netgear.com/products/WGPS606.asp

Carefully read and follow the vendor's instructions before attempting to update firmware.

It is extremely important that once the update starts that you do not interrupt the update process until the update is complete. The software will tell you when the update is completed.

In some cases the vendor's instructions require you to start the firmware upgrade procedure from the DOS prompt, or from a floppy disk. In Vista, click on Start, Run, and type CMD and press enter. You are at the DOS prompt. The screen shot, below, shows the DOS prompt as it appears on my computer. You enter commands after the > sign (greater than sign). For example, one useful command is ipconfig /all. That command displays the IP addresses used by your computer.



If you are in the market for a new printer, and you have a wireless network, consider a printer with built-in wireless access. That way, you don't have to bother with a separate print server. Wireless printers are very easy to setup and they don't take any additional space for a print server.

Q&A – HOW DO YOU COPY PHOTOS TO A CD?

One of our members recently asked us for information on how to copy photos to a CD using Vista. This is an excellent topic for Bug-Bytes and one that can involve much more than just a simple answer.

First, you have to have a CD drive that will burn CDs. If you bought an entry level computer, they often come with a CD drive that only reads CDs. With such a computer, you need to buy a replacement drive that will both read and write CDs, and preferably DVDs as well. Fortunately, replacing your old CD drive is both easy and relatively inexpensive.

Basically there are three methods to choose from to burn CDs.

0. Drag and drop to CD using Windows built in program.

0. Use a multi functional program such as Roxio Easy CD Creator or Nero.

0. Use a third-party single-purpose product designed just for burning CDs and DVDs.

DRAG AND DROP METHOD (FAIR)

If you have a CD burner and either XP or Vista you can just drag and drop the files you want to burn to a CD in your CD drive. With that method you open My Computer and navigate to the photos you want to copy.

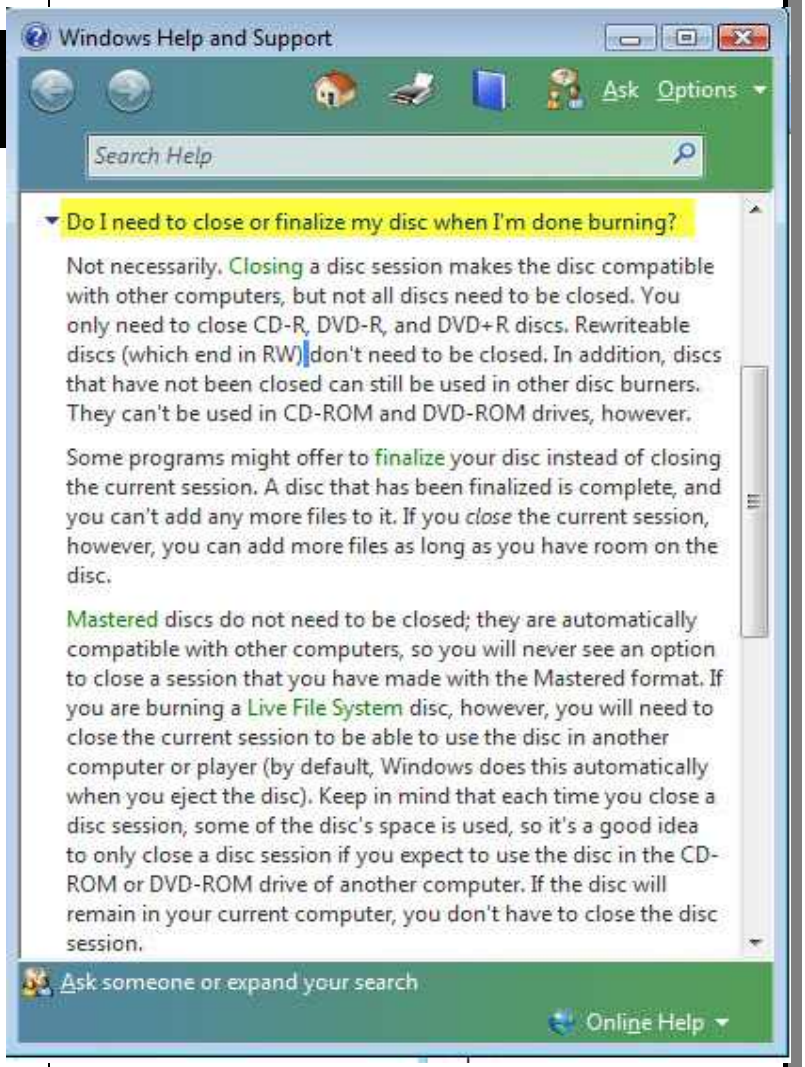
Open a new window that shows the contents of My Computer. That is, if you do this right, you will have two windows open. One shows your photos files, and the other shows the drives available to you in My Computer. If the windows are too big, click on the double box in the top right corner of your screen to minimize each open window. Now, drag one or more files to the drive for your CD burner.

There is a little more to it than that. I suggest you read the following excellent article.

http://www.vista4beginners.com/Burn-CDs-DVDs

It is important in the drag and drop method to correctly choose how your CD will be formatted. While this method is easy, it can also be confusing for beginners.

For instance, see this screen shot of the Vista help file.



I highly recommend the third the method which I will discuss at the end of this article. It makes burning CDs extremely easy for either beginners or seasoned veterans and produces good results every time.

MULTI FUNCTIONAL CD PROGRAMS (BETTER)

Nero 9 and Roxio are examples of CD burning software that bundle a wide variety of programs with their software. They include such programs as photo editing software, software to make music mixes, backup soft-

ware, software to create slide shows, to edit movies, to upload your photos for sharing, etc.

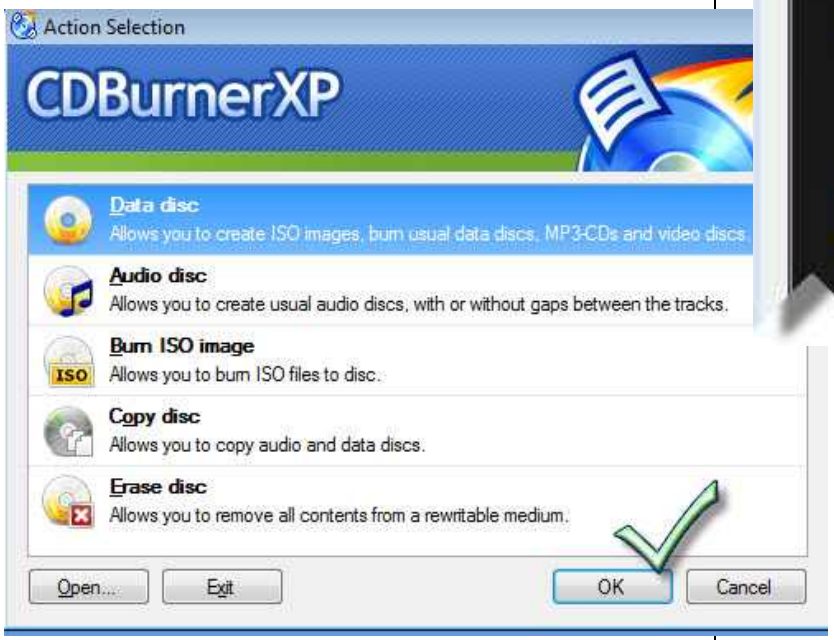
Such programs may be far more complex than you need or want since they may duplicate other programs you already use on your computer. They are also much more expensive than single-purpose CD/DVD burning programs.

SINGLE-PURPOSE CD/DVD BURNING SOFTWARE (BEST)

The free program CDBurnerXP (works for XP or Vista) does an outstanding job of burning CDs as does Ashampoo's Burning Suite ($49.95). These no-frills programs make burning CDs intuitive and easy. I think that Burning Suite is a little easier to understand and use than CDBurnerXP. Nevertheless, it is hard to argue with the appeal of CDBurnerXP given that it is free.

I suggest that you download CDBurnerXP and give it a try. Get it from http://cdburnerxp.se/ . Be sure to check the driver compatibility list to see if your drive is supported and review the list of features..

The menu for CDBurnerXP is shown below in the first screen shot and at the right the menu for Ashampoo Burner Suite.



Whichever product you pick, you will soon be burning music and data disks and wondering, "why didn't I do this before now?"