**Introduction:**

I choose a Networking Project on “Installing a router.” I have involved in this project because setting up a router become a crucial step for any home network. For most home users, set-up a [LAN](http://www.webopedia.com/TERM/L/local_area_network_LAN.html) (local Area Network) or [WLAN](http://www.webopedia.com/TERM/W/WLAN.html) (wireless LAN) and connect all computers to the [Internet](http://www.webopedia.com/TERM/I/Internet.html). Router connects at least two networks and forward packets among them according to the information in packet headers. The reason of my motivation for doing this project is that router will choose the best route/path for the data packet so that you receive the information quickly.

**Design:**

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| --- | --- | --- | --- |
| **Routers** | **Features** | **Cost** | **Website** |
| NETGEAR GS108NA ProSafe 8-Port Gigabit Ethernet Desktop Switch | * Eight auto-sensing 10/100/1000 ports, makes it simple to combine Fast Ethernet and Gigabit devices in your network * Plug-and-play installation delivers ease of use * NETGEAR Green features provide energy savings * LEDs make it easy to monitor link, speed, and activity * Supports Windows and Macintosh platforms | $52.49 | [www.amazon.com](http://www.amazon.com) |
| TRENDnet TEW-812DRU 1000 MBSP Wireless Router | * IEEE 802.11ac, IEEE 802.11n, IEEE 802.11g, IEEE 802.11b, 802.11a * Comes with a USB share port where USB peripherals can be connected and shared through the wireless network * Has a gigabit wired port for even faster connection rates * One touch connection to the wireless router with the WPS | $85.00 | [www.ebay.com](http://www.ebay.com) |
| Cisco 4000 Series Integrated Services Routers | * High-quality user experience. During peak loads, the multi-core CPU architecture running Cisco IOS-XE can enable resiliency by using separate control and data services planes. * Faster response to business and user needs New pay-as-grow performance an services allows IT increase throughput and expand across a rich [portfolio](http://www.cisco.com/c/en/us/products/routers/4000-series-integrated-services-routers-isr/index.html) of on-demand network and application services with no truck rolls * A wide range of connectivity [options](http://www.cisco.com/c/en/us/products/routers/4000-series-integrated-services-routers-isr/index.html) ISR 4000 supports integrated Gigabit Ethernet, T1/E1, T3/E3, PRI, xDSL, and more * Unified communications Get comprehensive edge support for session border control, branch telephony survivability, TDM gateways, and more. | $95.02 | www.cisco.com |

# I have used Cisco 4000 Series Integrated Services Routers because it gives me following features:

* As we know Cisco is a popular one manufacturer for networking products and services that’s why I used this router.
* Simplify installation and maintenance
* High performance hardware and quality
* Provide high quality

**Implementation:**

**Description of installing hardware:**

1. First of all, search for Internet Service Provider which have good speed and performance. After setting up ISP, you just find out what kind of modem you have.
2. Find a place near to the center of house where you get the most network range. After that, connect to your internet and search a router that fulfil your specifications.
3. There are many types of routers available. Compare the features of all routers then purchase a wireless/wired router according to your choice. I chose Intel® PRO/1000 GT Desktop Adapter.
4. Connect your modem with router using Ethernet cable. To get better result, just sure your router should be placed near modem.
5. Now connect your PC with router via Ethernet cable. It does not require any other configuration.
6. To adjust your router settings, you need at least one PC
7. Determine the router’s IP address and type that IP address in address bar of the browser; will connect to router’s configuration menu.
8. To access the configuration page, you need username and password. If you do not know username and password, just check out online your router model to find out default login details. You can also use reset button to reset login details.
9. After login in, open the wireless settings and set up your wireless network by entering unique name in the SSID field. Your network is scanned by the name you entered. Be sure to check the box to enable SSID broadcast.
10. The most important step is to choose the security method. WPA2-PSK is the best security method to protect your network from hackers. After that, enter the passphrase.
11. Click on the Save button. Once all the router settings are finished, your wireless network get enabled.
12. You can also use blocking tools to block sites to restrict access.
13. After completing the steps of configuring the router, connect your PC and scan for the wireless network and enter passphrase. Your network will automatically connected. You have provision to connect other devices too like printers, tablets and Televisions.

**Instructions/description for how you install the software:**

1. Disconnect router from the modem and the power source.
2. Insert the disc into your PC and run the latest version of router’s version.
3. Follow the given instructions and temporarily connect your router to PC using Ethernet cable. We can also set network username and password.

**Problems/anticipated issues and troubleshooting included:**

* Disappearance of Router name: Another problem that I faced is that while connecting router with network, its name didn’t appear. To solve this problem, I checked the service set identifier SSID whether it was enabled or disabled. I again enabled it and type the network name and the condition is name must matched with the router configuration.

**Conclusion:**

I have learned

* how to install a router
* about the Network Interface Cards and their manufacturers
* While facing problems how to troubleshoot

Next time, I will try to connect wireless router with my smartphone/tablet.

**References:**

How to Set Up a Wired or Wireless Home Network. (n.d.). Retrieved June 15, 2015.

How to Troubleshoot Wireless Router Connection (GUIDE). (2015, March 25). Retrieved June 15, 2015.

How to Set Up a Wireless Router. (n.d.). Retrieved June 15, 2015.