

Cybersecurity News You Can Use – Home Network Security

Why you SHOULD'T plug your computer into your modem

Cyber threats are exploding as a result of the global shift to remote work and e-learning due to COVID-19. One of the biggest threats is people plugging devices directly into a cable or fiber modem – which is essentially an unprotected front door from the Internet to your device. In this document we explain key terms and provide simple steps you can take to stay #CyberSmart.

In this Edition:

- Router vs. Modem – what you need to know
- Why routers are our friends
- How you can protect yourself online

Bottom Line Up Front (BLUF)

- **Plugging a computer or laptop directly into a modem is a bad idea.**
This is a major security risk because it bypasses security configurations that a router (or, modem/router combination) have set up by default.
- **If you don't use your router, it's equivalent to leaving your 'virtual' front door wide open to attackers,** allowing bad actors to take advantage of vulnerable software that you may have installed on your device.

You SHOULD plug your computer or laptop into a router or router/modem combination as those devices have security controls built in.

Key Terms

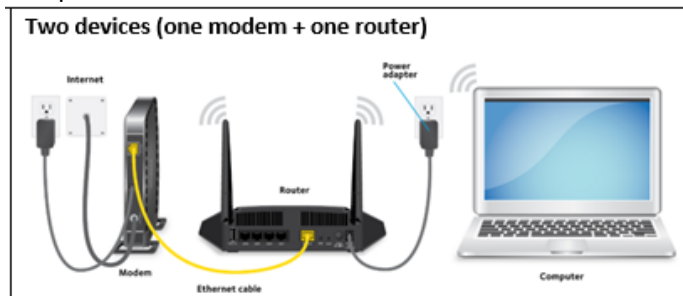
Modem:

- A modem is a device that connects your home, usually through a coax cable or fiber optic connection, to your Internet service provider (ISP). Common ISPs in North Dakota are:
 - Midcontinent
 - BEK
 - CenturyLink
 - Dakota Central
- The connection between your house and the Internet is known as a wide area network (WAN). This is essentially the virtual door from your computer to the Internet. Each modem has an assigned a *public* IP address that identifies it on the Internet.

Router:

- A router connects your devices to each other and, in hard-wired setups, to the modem. The router connects to your modem and then to your devices (laptops, smart TVs, printers, etc.) via either an Ethernet cable or WiFi signal.
- The router creates a local area network (LAN) within your house, allowing your devices to share files and devices like printers.
- The router manages all the information going to and from the devices and the modem and makes sure it all ends up where it needs to be.
- Simply put, your router:
 - Assigns a local IP address to each device on the network
 - Creates a firewall to prevent security breaches
 - Manages the traffic on your network
 - Handles any parental controls

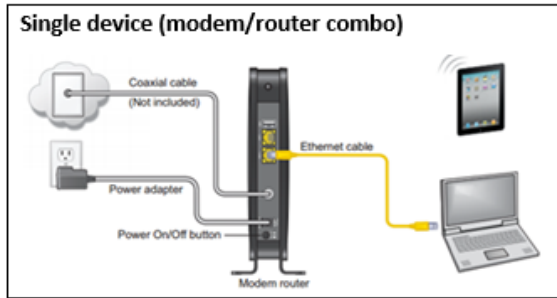
- Example:



Modem	Router
Brings Internet to your home	Brings Internet to your devices
Is a public IP address	Assigns local IP addresses (private)
Uses a WAN network	Creates a LAN network

Modem Router Combo

- Routers and modems have traditionally been two separate devices that worked together to form your home network. However, new combination modem and router units that merge the two devices' functions into one are becoming increasingly common. **This is a completely acceptable way to connect securely to your home's Internet.**
- Example



Summary

- Remember that the modem is your network's translator, while the router is more like an air-traffic controller, communicating with the "planes," (your devices) keeping order and making sure everyone is safe.