Chapter 13: Internet Connectivity

Complete CompTIA A+ Guide to PCs, 6e
Chapter Objectives

• To configure an internal external modem
• To explain basic handshaking between a DTE device and a DCE device
• To use Windows tools when working with modems
• To cable and configure a DSL modem and a cable modem
• Other Internet connectivity options such as satellite, broadband wireless, WiMax, and wireless modems
• Why VoIP is important to technicians
• To perform basic modem troubleshooting
• The benefits of mentoring in the IT field
CompTIA A+ Exam Objectives
Covered in This Chapter

801-1.4: Install and configure expansion cards.
801-1.7: Compare and contrast various connection interfaces and explain their purpose.
801-1.11: Identify connector types and associated cables.
801-2.7: Compare and contrast Internet connection types and features.
801-2.9: Compare and contrast network devices, their functions, and features.
802-1.6: Setup and configure Windows networking on a client/desktop.
802-4.5: Given a scenario, troubleshoot wired and wireless networks with appropriate tools.
Modems
(Modulator/Demodulator)
Serial Port Settings

- Data Bits
- Parity
- Stop Bits
- FIFO Setting
- Flow Control
- Handshaking
Modem Types

- 56Kbps Modems
- Fax Modems
- Digital Modems
- ISDN (Integrated Services Digital Network)
A corporate data network or the Internet is used for phone traffic rather than using the traditional PSTN (public switched telephone network).

Traditionally, companies used a separate network structure for the data network (the network where computers and printers connect), for the phone network, and for the video network.

Convergence is a term used to describe how these data, voice, and video technologies are now using one network structure instead of multiple ones.
Cable modems can be internal or external devices that connect a computer to a cable TV network.

- Bandwidth
- Upstream
- Downstream
xDSL is another modem technology. The x in the term xDSL refers to the various types of DSL (digital subscriber line) that are on the market. The most common one is ADSL (Asymmetrical DSL), but there are many others. ADSL uses faster downstream speeds than upstream. This performance is fine for most home Internet users. DSL uses the traditional phone line to be able to send and transmit not only voice, but also Internet data.
Wireless Technologies

- Wireless Broadband
- Wireless Hot Spots
- WiMAX
Web Browsers

- Microsoft's Internet Explorer
- Mozilla's Firefox
- Google's Chrome
Every great technician can tell you that he or she had at least one mentor, such as a coach, guidance, teacher, or adviser, who set a positive example in their life.

No technician can attain his or her ultimate level without being mentored and mentoring someone else along his or her career path.

Find someone who appears to be very professional and knowledgeable, someone who you want to emulate.

Knowledge is power. By sharing information with others and helping them along the way, you cement and expand your own knowledge.
The Internet connection types that are on the 220-801 exam are as follows: cable, DSL, dial-up, fiber, satellite, ISDN, cellular (mobile hot spot), line of sight wireless, and WiMax. Be able to describe these technologies.

Know pros and cons of each Internet connection type.

Know when each Internet connection type would be used.

Know the purpose of a VoIP phone.

The 220-802 exam includes the Internet Options Control Panel, which includes the tabs that can also be accessed from within Internet Explorer. Be familiar with each tab and why a technician would use the tab. Before the exam, re-examine those options.
Serial ports are also called asynchronous ports, COM ports, and RS232 ports.

Serial ports use either XON/XOFF (software method) or RTS/CTS (hardware method) for flow control.

Serial ports must be configured for the number of bits, parity, stop bits, FIFO setting, flow control, and handshaking. The two sides of the connection must match.

The speed at which a 56K modem can transmit is limited by the number of analog-to-digital conversions.

Internet connectivity can be provided by an analog modem, satellite modem, ISDN, cable modem, fiber, DSL modem, or wirelessly through the cell phone network, a wireless hot spot, WiMAX, or a wireless network.
Chapter Summary

- Cable modem bandwidth is shared by the number of subscribers in an area. A direct fiber connection might be an option.
- A DSL modem uses a phone line. ADSL has a faster downstream than upstream speed.
- WiMax networks are line-of-sight networks.
- VoIP uses a corporate network and/or the Internet for voice connectivity. Internet-based VoIP does not offer QoS.
- Technicians frequently have to configure Internet browsers. In Internet Explorer, you use the Internet Options tabs for configuration.
- Mentoring is important when you get started as a technician and as you gain experience.