



Digital Subscriber Line

- 56k dial-up modems are disappearing (too slow!)
- What is replacing 56k for in home Internet access?
 - DSL can provide very high data transfer rates over standard telephone lines
 - Cable modems (but let's look at DSL first)

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DSL Basics

- DSL, depending on the type of service, is capable of transmission speeds from 100s of kilobits into single-digit megabits
 - Because DSL is highly dependent upon noise levels, a subscriber cannot be any more than 5.5 kilometers (2-3 miles) from the DSL central office
 - DSL service can be:
 - Symmetric – downstream and upstream speeds are identical
 - Asymmetric – downstream speed is faster than the upstream speed



- DSL service
 - Often connects a user to the Internet
 - Can also provide a regular telephone service (POTS)
- The DSL provider uses a DSL access multiplexer (DSLAM) to split off the individual DSL lines into homes and businesses
 - A user then needs a splitter to separate the POTS line from the DSL line, and then a DSL modem to convert the DSL signals into a form recognized by the computer

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3- DSL Formats

- A DSL service comes in many different forms:
 - ADSL (Asymmetric DSL)
 - DSL Lite
- Slower form than ADSL
 - VDSL2 (Very high data rate DSL2)
 - RADSL (Rate-adaptive DSL)
- Speed varies depending on noise level

4- Cable Modems

- Allow high-speed access to wide area networks such as the Internet
- Most are external devices that connect to the personal computer through a common Ethernet card
- Can provide data transfer speeds between 500 kbps and 25 Mbps