

Home Network Design I

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Advanced Topics

Network Design

- ◆ Networking is all about sharing...
- ◆ It's a numbers game...
- ◆ Routers, switches and bridges, oh my!
- ◆ Plan big, start small
- ◆ Selecting and configuring a router

...It's all about sharing...

- ◆ High-speed Internet connection
- ◆ Printers
- ◆ Disk space
- ◆ Computing resources

It's a numbers game...

- ◆ How many?
- ◆ How far?
- ◆ How fast?
- ◆ How much? \$\$\$\$

How many devices?

- ◆ Cable or DSL modem
- ◆ Computers
- ◆ Printers
- ◆ Scanners
- ◆ File servers

How far?

- ◆ Same room - Wired
- ◆ Same floor - Wired (25-50') or wireless
- ◆ Multiple floors - Wireless
- ◆ Outdoors - Wireless

How fast?

- ◆ What is the download speed?
- ◆ How many simultaneous users?
- ◆ Any online gamers?
- ◆ Transfer a lot of files between PCs?
- ◆ Network backup?

Speeds and Feeds

- ◆ Up to 5 Megabit/second download speed will work well with 10 Mb Ethernet
- ◆ Over 5 Megabit/second requires 100 Mb Ethernet
- ◆ Most routers / switches are 10/100 Mb
- ◆ Gigabit not really cost effective for home

How many \$\$\$?

- ◆ Basic home network under \$100
- ◆ Mid-range \$100 to \$200
- ◆ High-end \$250 to \$500
- ◆ Being able to move data without leaving your chair - priceless...

Routers, switches, etc

- ◆ Routers route data between different IP networks and usually provide a firewall
- ◆ Switches connect multiple devices to the same network segment
- ◆ Bridges connect different network media

Plan big - start small

- ◆ Networks always expand!
- ◆ Always something new to connect to
- ◆ Routers and switches can cascade
- ◆ If you think you will need wireless, start with a wireless router

Selecting a router

- ◆ A router is the core of a home network
- ◆ Must include a configurable firewall
- ◆ Major vendor - Linksys, D-Link, etc
- ◆ Web-based configuration
- ◆ Extra features - wireless, switch, etc.
- ◆ Demo