Other Network Protocols

Peter Chapin

CIS-2151, Computer Networks

Vermont Technical College

IPX/SPX

- Used by (Old) Novell Netware
  - … and possibly other areas?
- IPX: Internetwork Packet Exchange
  - Layer 3 (network) protocol
  - Unreliable, like IP
- SPX: Sequenced Packet Exchange
  - Layer 4 (transport) protocol
  - Adds reliability, like TCP

SCTP

- Stream Control Transmission Protocol
  - Another transport protocol in the IP stack (alongside TCP and UDP)
  - Provides…
    - Reliability and congestion control, like TCP
    - "Messages" that are distinct, like UDP
    - "Multihoming"… multiple IP addresses can be used for the endpoints (for automatic rollover in case of failure)
- Used by telecommunications systems?

AppleTalk (Bonjour, UPnP)

- Created by Apple for simple ad-hoc networking
  - Automatically discover devices, configures addresses, etc.
- Obsolete. Apple migrated to TCP/IP
- Newer network configuration protocols include
  - Bonjour (also an Apple thing, runs on TCP/IP)
  - UPnP (Universal Plug-and-Play; also runs on TCP/IP)
- In the TCP/IP world, DHCP (Dynamic Host Configuration Protocol) can do *some* of this sort of thing.

OSI Protocols

- Open Systems Interconnection
  - Their main contribution is the 7-layer model, but the International Telecommunications Union (ITU) has a protocol suite that follows the model exactly. Note that TCP/IP only follows the model approximately, especially at the upper layers).
  - Quote from Wikipedia: "While the seven-layer OSI model is often used as a reference for teaching and documentation, the protocols originally conceived for the model did not gain popularity, and only X.400, X.500, and IS-IS have achieved lasting impact."
  - ITU standards start with "X." Thus: X.25, X.233 (network); X.234, etc.

DTN

- Delay/Disruption Tolerant Networking
  - Used by space systems where latencies are extremely high and connectivity intermittent.

- See Sevan Golnazarian's slides!