Voice Over IP
Protocols

VoIP - What do we need?
- Soft-Switch
  - All the functions of the PBX
  - No physical interfaces (other than the LAN)
- Telephones
  - Small computers
  - Can theoretically initiate direct calls (phone to phone)
  - But the usually do not
- Gateways to the circuit-switched networks
- Rules (protocols) on how these things communicate with each other.

Soft-Switches
- Based on a traditional PBX (Nortel, Avaya, etc)
- Combines soft-switch and gateway
- Uses VoIP protocols to communicate to phones and other devices
- Newly developed (Cisco and others)
  - Soft-Switch as a server
  - Expand routers to act as gateways

Protocols
- ISO standard: H.323
  - Developed for video conferencing
  - Very complex, very complete
- IETF SIP
  - Relatively simple protocol for signaling
- Proprietary (Cisco, 3COM, ...)
- Everyone use RTP, RTCP
  - IETF standards for media flow and control
H.323

H.323 Specifications

The H.323 Protocol “Stack”

SIP - simple example