

# Networking Research

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# Internet Protocols

- TCP/IP protocols designed 20 years ago
  - unicast of individual packets
  
- Current and emerging Internet applications
  - flows
  - multicasts

# Flows

- Packet filtering to detect flows
- Quality of service for flows
  - Intserv vs. Diffserv
  - support in routers and end systems
- Exploiting the presence of flows
  - efficient routing using labels (IP switching, tag switching)
  - efficient encryption and signing of flows
  - ...

# Multicasts

- Current MBone based upon tunneling
- Scalable deployment issues
  - address allocation
  - heterogeneity of intradomain routing
- Flow and congestion control
  - impact on TCP traffic
- Reliable multicast delivery
  - ack implosion, delay, scalability
- Secure multicast delivery
  - group key management, scalability

# Other Internet Topics

- Active networks
  - programmable routers
  - security, efficiency
- Measuring the global Internet
  - for example, distance between two hosts
- Internet telephony, television