

**CS162**  
**Operating Systems and**  
**Systems Programming**  
**Lecture 23**

**Networking III**

**November 19, 2008**

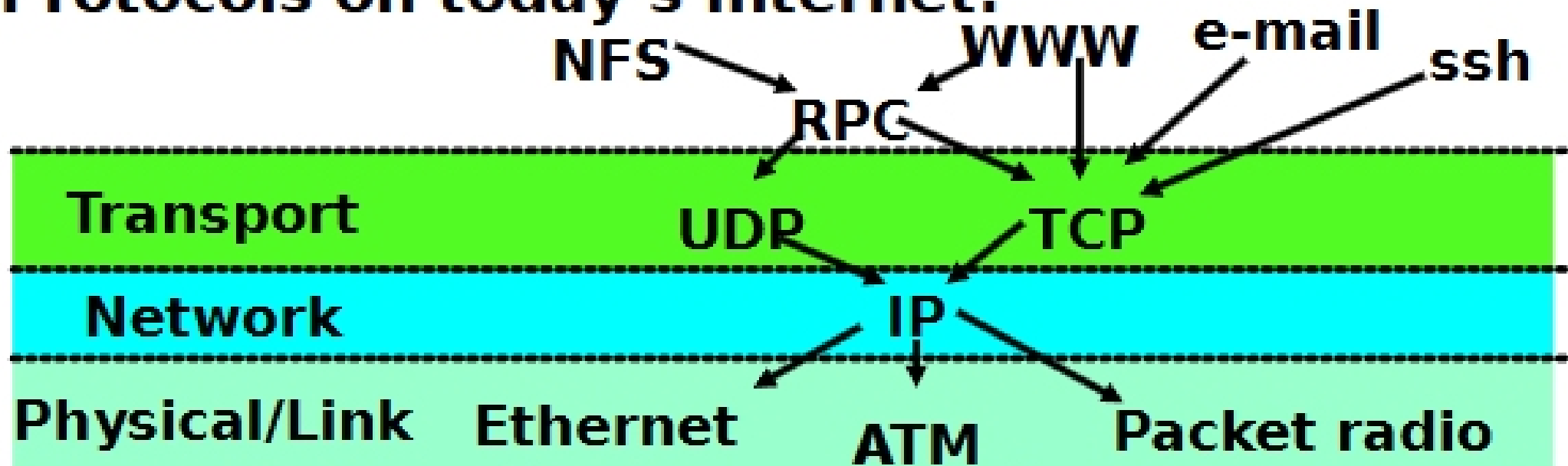
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## Review: Network Protocols

- **Protocol:** Agreement between two parties as to how information is to be transmitted
  - Example: system calls are the protocol between the operating system and application
  - Networking examples: many levels
    - » Physical level: mechanical and electrical network (e.g. how are 0 and 1 represented)
    - » Link level: packet formats/error control (for instance, the CSMA/CD protocol)
    - » Network level: network routing, addressing
    - » Transport Level: reliable message delivery

- **Protocols on today's Internet:**



## Goals for Today

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- **Networking**
  - Continue discussion of reliable messaging
  - Sequence numbers for ordering
  - Acknowledgments for reliability
- **TCP windowing**
- **Sockets**
- **Messages**
  - Send/receive
  - One vs. two-way communication

**Note: Some slides and/or pictures in the following are**

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**by Kubiawicz**