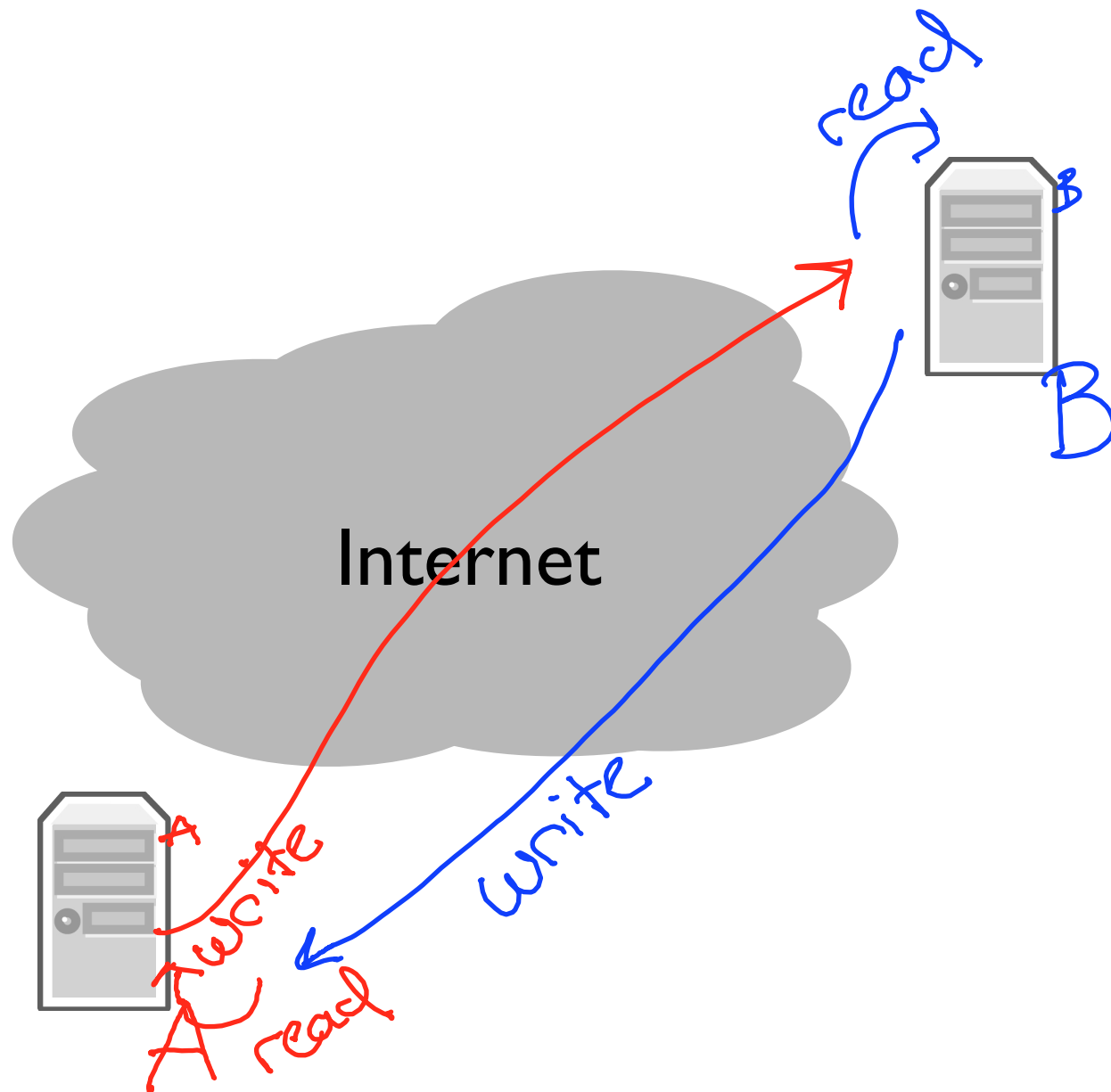


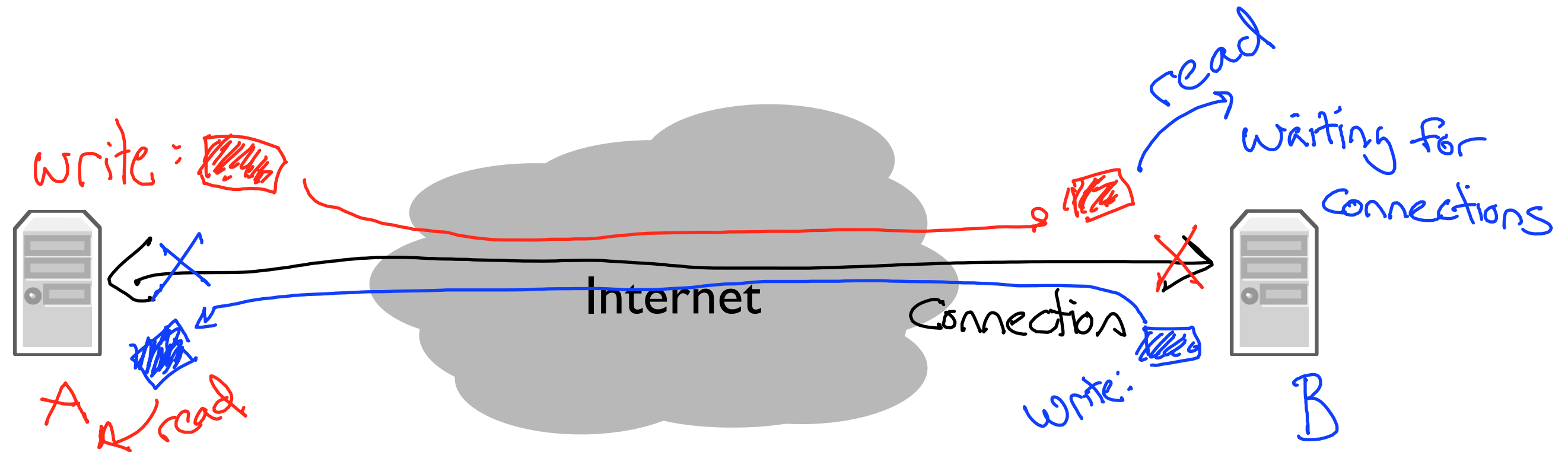
# Networked Applications

# Network Applications



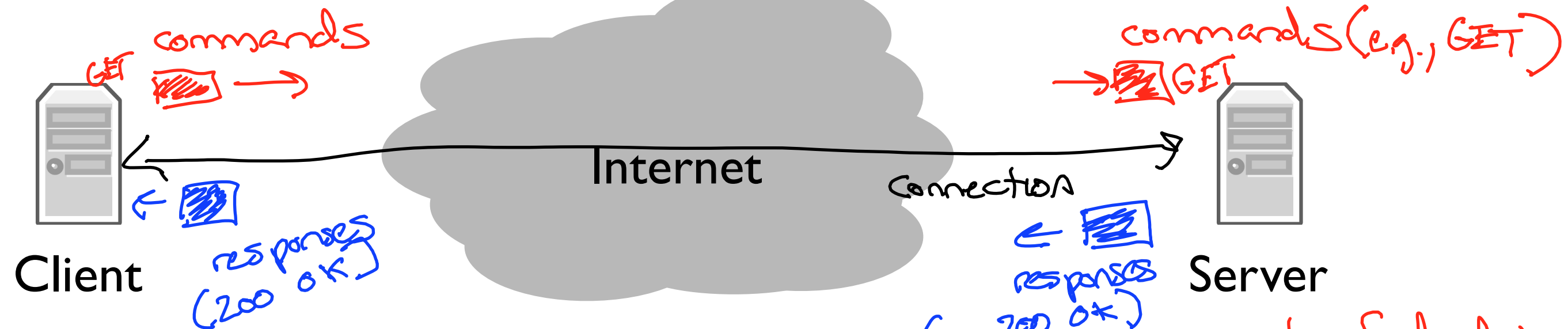
- Read and write data over network
- Dominant model: bidirectional, reliable byte stream connection
  - ▶ One side reads what the other writes
  - ▶ Operates in both directions
  - ▶ Reliable (unless connection breaks)

# Byte Stream Model



# World Wide Web (HTTP)

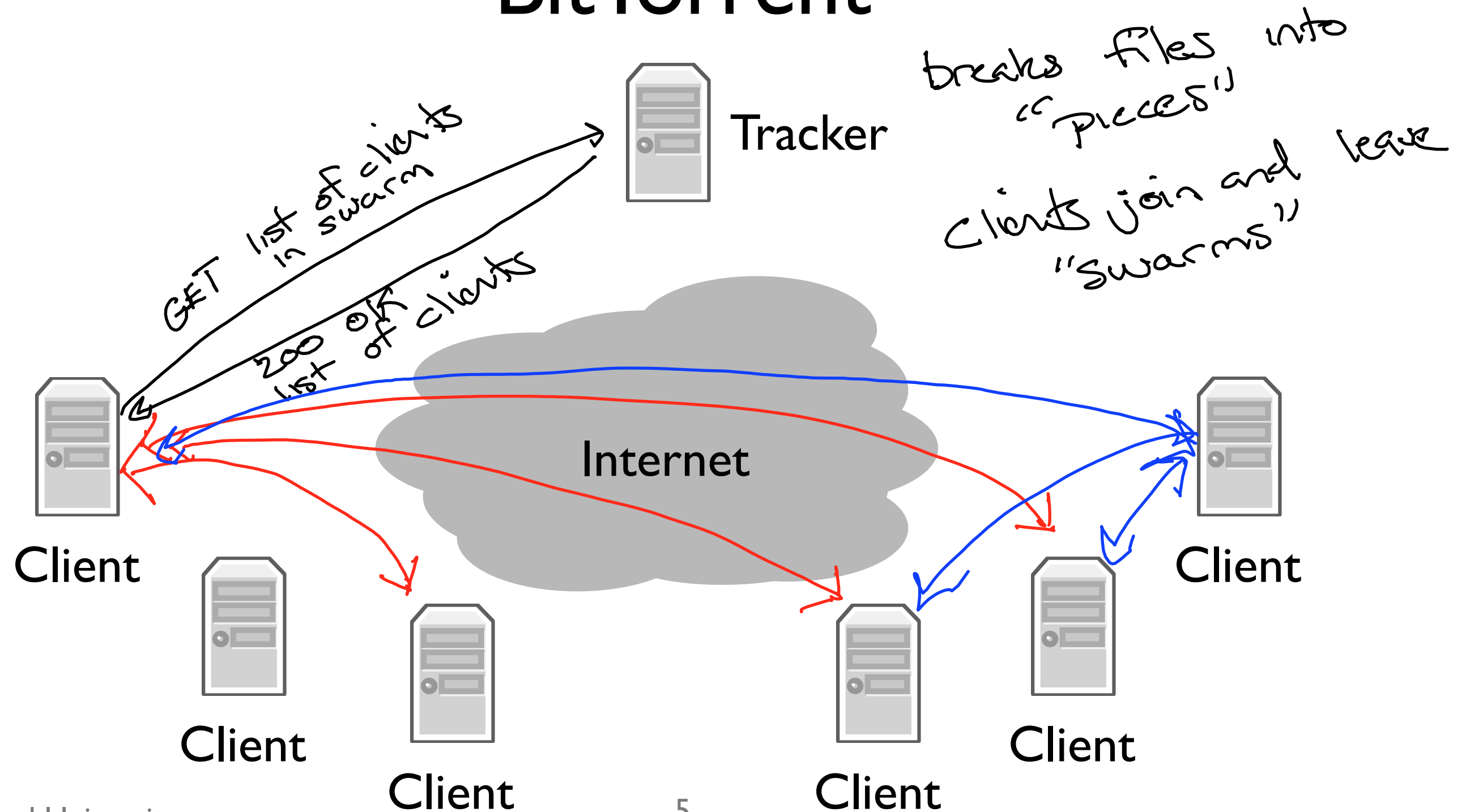
http:// ← using HTTP



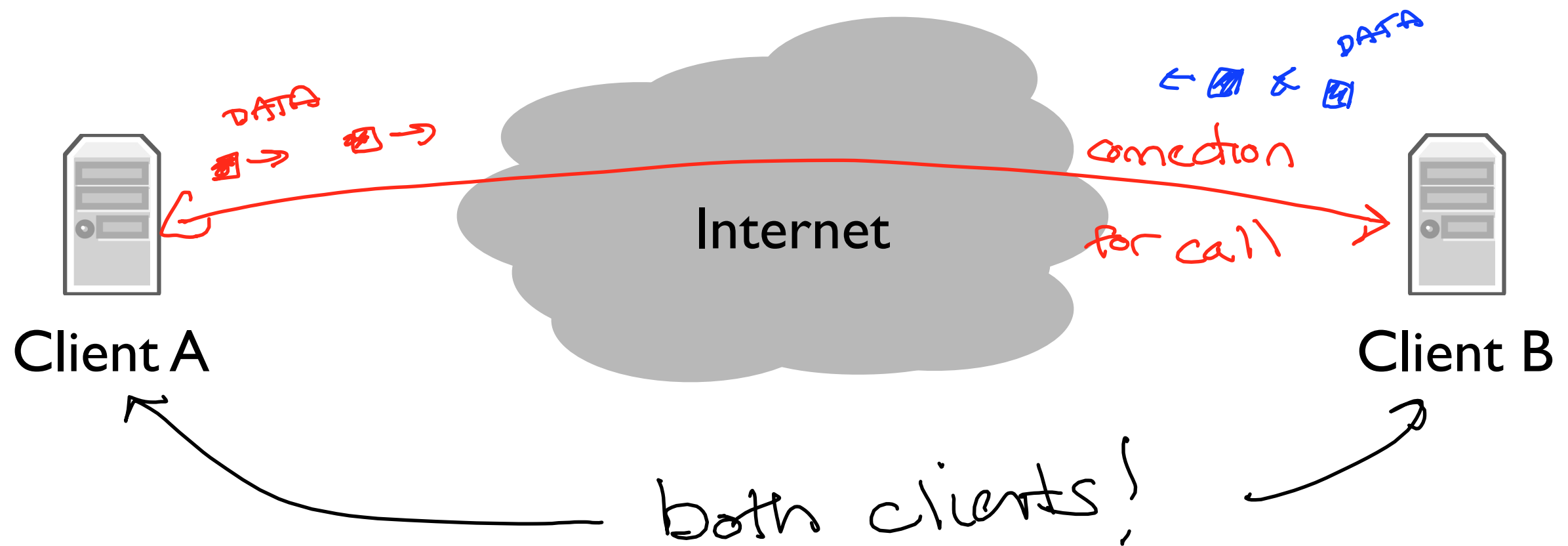
request: "GET / HTTP/1.1"  
response: "HTTP/1.1 200 OK"

(e.g., 200 OK) [www.stanford.edu](http://www.stanford.edu)

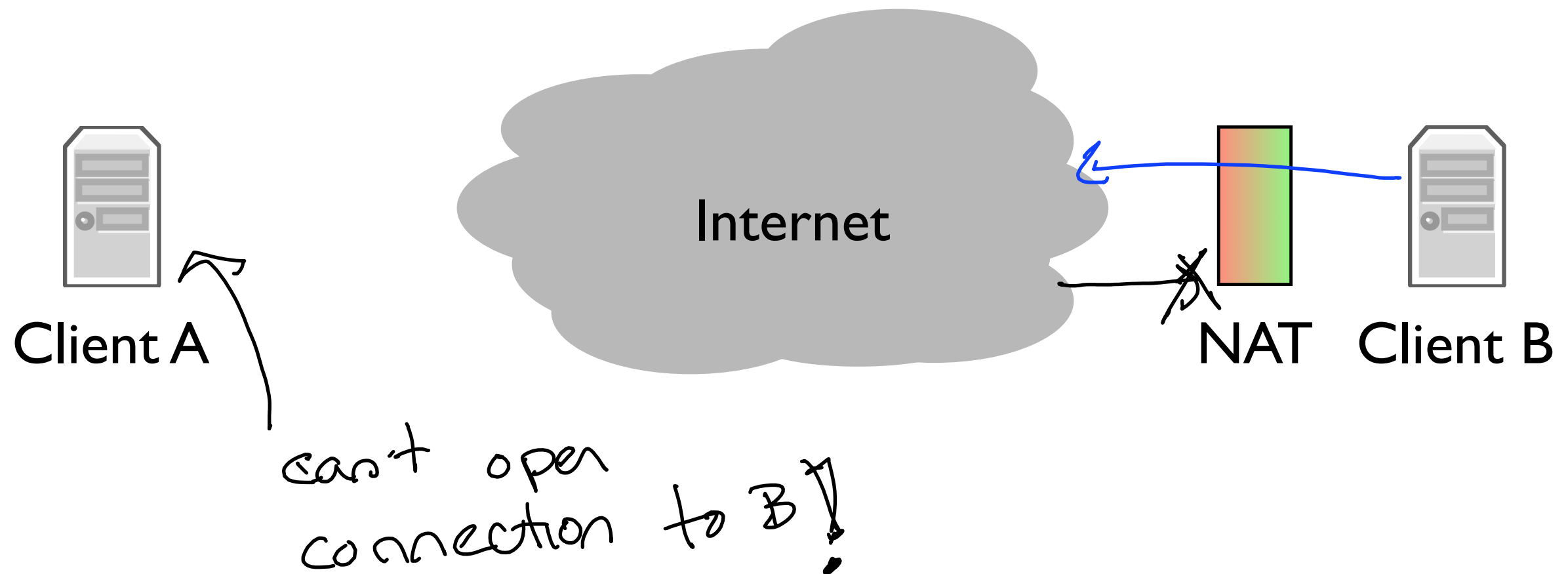
# BitTorrent



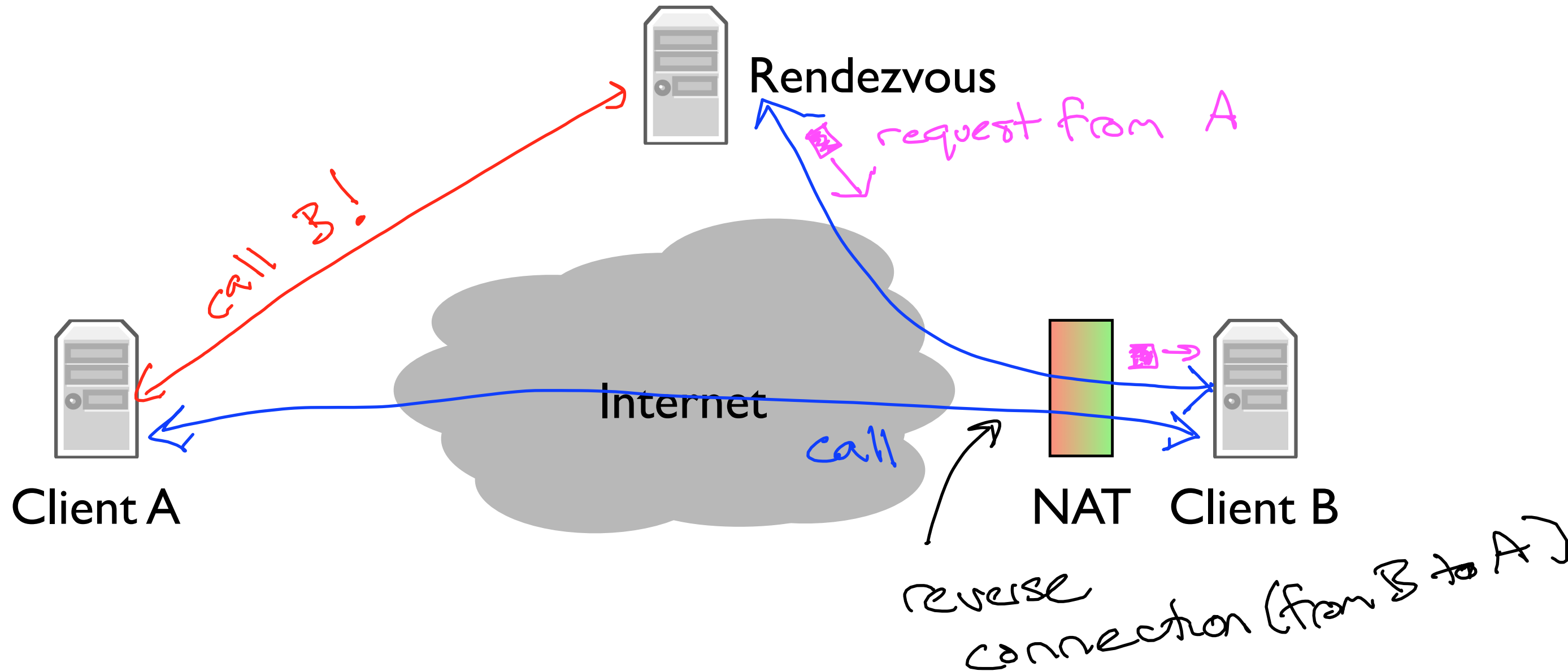
# Skype



# Skype with Complications

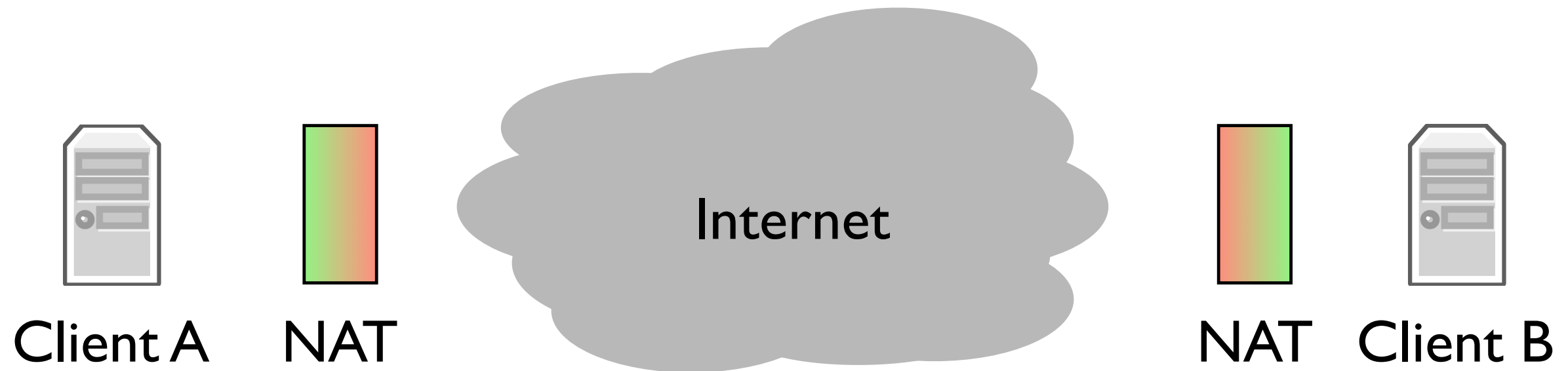


# Skype with Complications

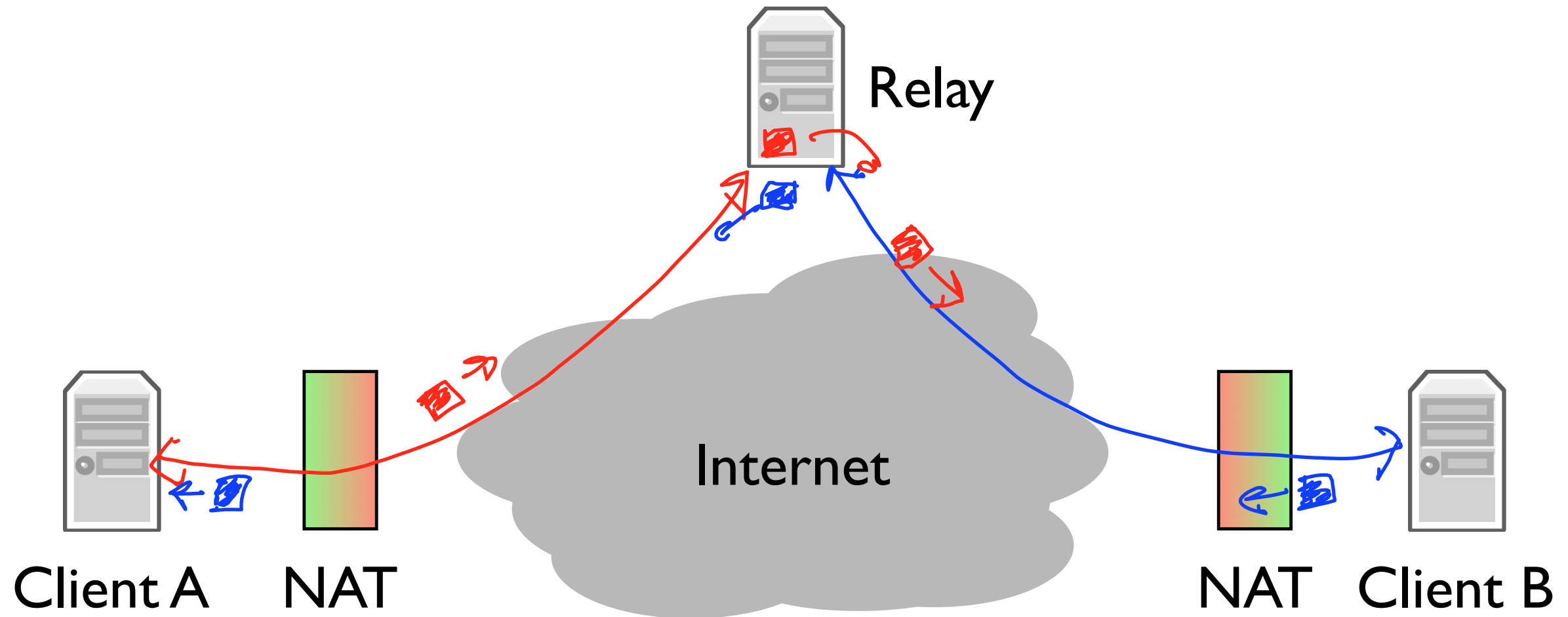




# Skype with More Complications



# Skype with More Complications



# Application Communication

- Bidirectional, reliable byte stream
  - ▶ Building block of most applications today
  - ▶ Other models exist and are used, we'll cover them later in the class
- Abstracts away entire network -- just a pipe between two programs
- Application level controls communication pattern and payloads
  - ▶ World Wide Web (HTTP)
  - ▶ Skype
  - ▶ BitTorrent