Announcements

• Office hour on Tuesday (tomorrow) at 1
• Review session and HW3 info on Wednesday
Web Proxy Applications

• Cache coherency
• Prefetching
• Cache replacement
• Adaptive freshness interval
• Informed fetching
Server Volumes and Proxy Filters

• What do the servers know?

• What do the proxies know?

• How to bridge the gap without
  – per-proxy or per-server state
  – increasing network traffic
  – modifying HTTP 1.1
Client → GET → OK → Proxy → GET, filter → OK, v → Server
How to avoid per-proxy state?

• For frequent access to r, want to avoid sending the same v repeatedly
  – Server could keep track of proxies that have received v recently

• Random enable/disable bit
• Frequency control techniques
Proxy Filters

• Control piggyback message frequency
• Customize the contents
  – Size of the content (large images)
  – Freshness (stock quotes)
Metrics

• Fraction predicted
  – What fraction of the requests were correctly predicted (were in the piggyback from the server)

• True prediction fraction
  – What fraction of the predicted requests (that were in the piggyback) were correct (were actually requested by clients)?

• Note, these two metrics are independent

http://en.wikipedia.org/wiki/Precision_and_recall
(a) AIUSA

Fraction predicted vs. Average Piggybacks for different settings:
- default
- combined
- effective = 0.1
- effective = 0.2
(a) AIUSA
Figure 8: Precision vs. recall