HTTP extensions

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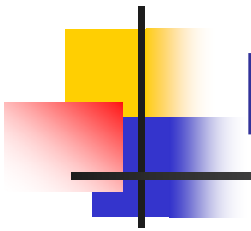
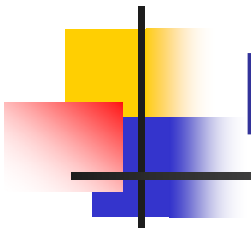


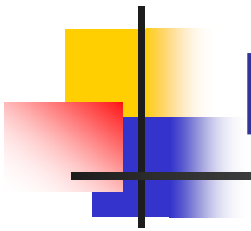
HTTP and other protocols

- HTTP extensions: WebDAV et al
  - New methods, responses
- HTTP layer: IPP
  - POST and response of application/ipp
- HTTP-like protocol: SIP
- HTTP extension protocol
- Lots of private applications
  - Instant messaging, network management, ...
  - TCP encapsulated over HTTP
  - RFC 2324, HTCPCP



Reasons for reuse of HTTP

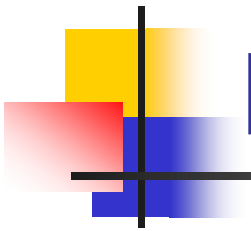
- Familiarity and mindshare
- Apparent simplicity
- Compatibility with existing server & client libraries
- Ease of prototyping using CGI, ASP
- Ability to use HTTP security
- Works through firewalls



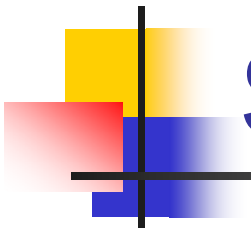
Problems using HTTP

- HTTP is a complicated protocol: ranges, cache, content negotiation
- HTTP has far more overhead than RPC, even with persistent connections and pipelining
- HTTP's security is inappropriate for most other applications

More problems with using HTTP

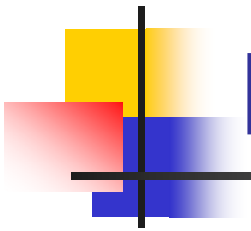


- Problematic compatibility with deployed proxies, caches, infrastructure (e.g., so-called “transparent” proxies)
- Peculiar request-response match requirements, no multiplexing
- One-way initiation, awkward asymmetric semantics



Subverting firewall policy?

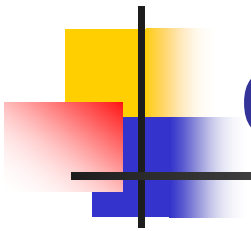
- Site administrators block other protocols for real reasons
- Bypassing other applications by reuse of HTTP short-term hack
- Port 80 contention: who owns the port on the workstation/server?



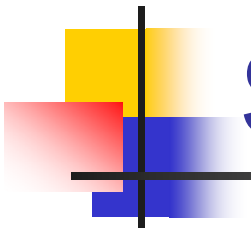
Extending HTTP

- New Method
- Different URLs
- New URL schemes
- New Headers
- New values for old headers
- New MIME types
- New return codes
- “Mandatory” extension mechanism

Problems with HTTP extensions



- Only compatible with some implementations
- Interactions with other headers, methods, values not well-defined
- No registration or versioning mechanism for most extensions
  - Opportunity for conflicts between implementations



Summary: beware

- Using HTTP is popular
- Must proceed with caution
- Might work “on the LAN” and then not work in deployment
- Build and test not reasonable methodology because of interactions