We Have Met The Enemy...

... And It Is HTTP

Rohit Khare
UC Irvine

April 14, 1998 • HTTP-Future Workshop
Charting the Future of HTTP

- Why HTTP/1.X Matters
- Concerns for the Future:
  - Performance
  - Programmability
  - Hypermedia Applications
- Taking the Fork in the Road
  - Messages over Objects (“HTTP-NG”)
  - Objects over Messages (“HTTP/2.X”)

April 14, 1998
Why HTTP 1.X Matters

- Ubiquitous Pro-HTTP Hype / Branding
- Simple Topology
  - Synchronous Request-Response Chain
- Simple Parsers
  - “Natural Language” Message Structure
- Simple Extensibility
  - Gateways, Server API’s, Proxies
Performance

- On the Wire
  - Interactions with TCP Stacks; IP Packet Size
  - Multiplexing Channels: solution or recapitulation?

- Above the Wire
  - Delta Encoding
  - Multiplexing Requests

- Implementation Simplicity, Compactness
Programmability

- New Methods
  - Mandatory: extension mechanism
- New Resources
  - Representations of databases, processes, etc.
- New Compositions
  - Active Proxies; MUX protocol stacks
- New Models
  - Transactional guarantees; asynchronous reply
Hypermedia Applications

- Namespace Operations
  - Atomic group transactions (e.g. Lock, Move)
- Name & Locator Resolution
  - Replication, Mirroring, Flash Crowds
- Collaboration Support
  - Notification Protocols
- Delivery of Multimedia Data
  - Real-time (lossy) & Multicast delivery
Taking the Fork in the Road

Meeting these requirements as (remote) Documents or Procedures?

HTTP-NG: Messages over Objects
- ... a world of interlinked object brokers
- Improving marshalling and wire protocols

HTTP/2.X: Objects over Messages
- .. a world of interlinked message depots
- Improving message syntax and routing
Deployment

- What will stick to the wall?
  - Lots of RPC systems in the graveyard
  - Lots of Universal Libraries in there, too
- What killer app can displace HTTP?
  - New devices?
  - New users?
  - New applications?
- Standardization Forum-Shopping
Resources

- HTTP-Future Mailing List
  - http-future@w3.org mailing list
  - Protocol Design Group (Members-only)

- Workshop Report
  - Proceedings as UCI Tech Report
    - (this talk will be available at that url)