Goals for HTTP-NG

- **Test: ‘HTTP/1.X can be replaced with 3-layer structure’:**

  lowest: transport

  middle: OO RPC (as in CORBA, DCOM, Java RMI)

  highest: web-specific interfaces

- **HTTP-NG has to:**

  support existing web architecture

  interoperate with, and eventually supplant, HTTP/1.X

  => has to be better in some important ways

  have a good relationship with CORBA, DCOM, RMI

Existing Web Architecture

- **Client/server, chained intermediaries**
- **caching**
- **resources, URIs**
- **federation**
- **authentication, authorization**
- **resource migration**
- **server is identified by DNS name, not IP address**
- **MIME-typed entities**
- **Exists: GET, POST**

Better Architecture

- **HTTP has exactly 1 method**
- **specify semantic model then protocol, not architecture**

More is Better

- **Efficiency: performance & cost, net & local**
- **Scalability**
- **Modularity (the important kind of ‘simplicity’)**
- **Evolvability**
- **Can author as well as access resources**
- **Expressiveness**
- **Security**
- **Support of liberty, privacy, limited trust exposures**
- **Transport flexibility**
- **Resource migration, replication**
- **Nested and recursive RPCs**
- **Small clients and servers**
- **Internationalization**
- **Quality of Service**
- **Application robustness**
- **Intellectual property rights management (incl. payment)**
- **Disconnected operation**

Short-Term Action Plan

- **By end of June 1998, design & prototype:**

1. **Three-layer structure**
2. **Efficiency**
3. **Scalability of existing web**
4. **Extensibility and evolvability of existing OO RPCs**

- **Testbed:**

  uses ILU

  modified Apache

  SURGE-based client

  simple fetcher client

  whatever else we find time for