

# Bidirectional HTTP

Design Implications for HTTP



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# Four Approaches

BOSH

XEP-0124: Bidirectional-streams Over Synchronous HTTP, XMPP

<http://xmpp.org/extensions/xep-0124.html>

Bayeux

Bayeux Protocol, The Dojo Foundation

<http://svn.cometd.org/trunk/bayeux/bayeux.html>

WebSock

The Web Sockets API, W3C

<http://dev.w3.org/html5/websockets/>

<http://tools.ietf.org/html/draft-hixie-thewebsocketprotocol-03>

rHTTP

Reverse HTTP

<http://tools.ietf.org/html/draft-lentczner-rhttp-00>



# Four Motivations

## BOSH

Work around firewalls or environments that are restricted to HTTP

## Bayeux

Operate in an application environment (web page) where the only network functionality is XMLHttpRequest()

## WebSock

Create a bi-directional network facility for DOM environments

## rHTTP

Provide full HTTP request/response semantics in network environments where the responder can't accept connections



# Common Aim

Support reversed flow over HTTP

-or-

Get data to the client at the server's whim!



# Layering on HTTP

How the underlying HTTP connection is used:

Poll / Long Poll

BOSH, Bayeux

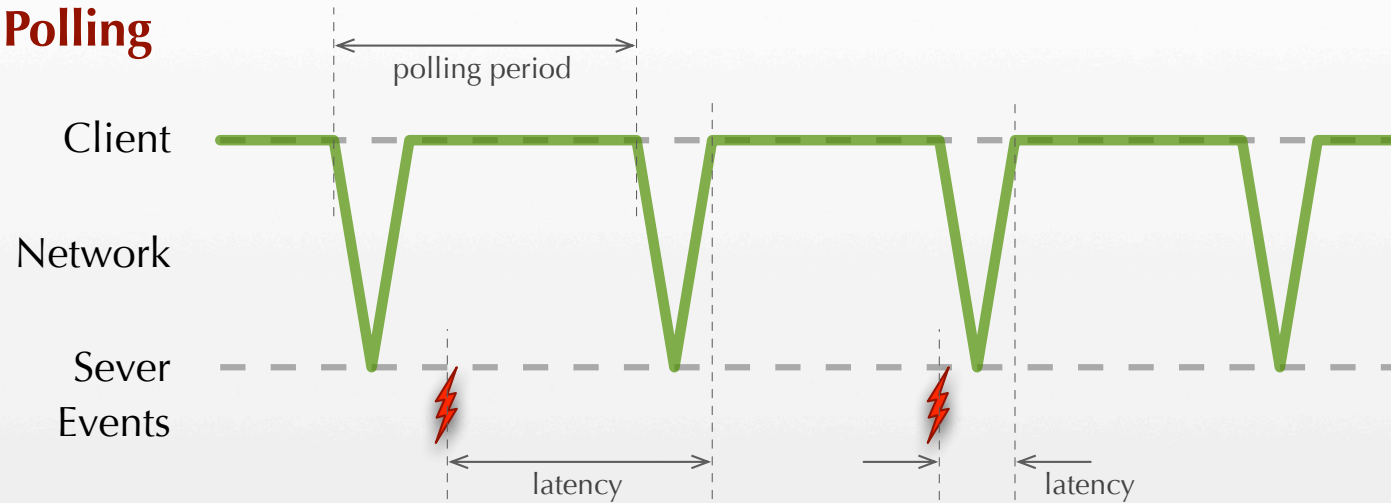
Upgrade

WebSock, rHTTP

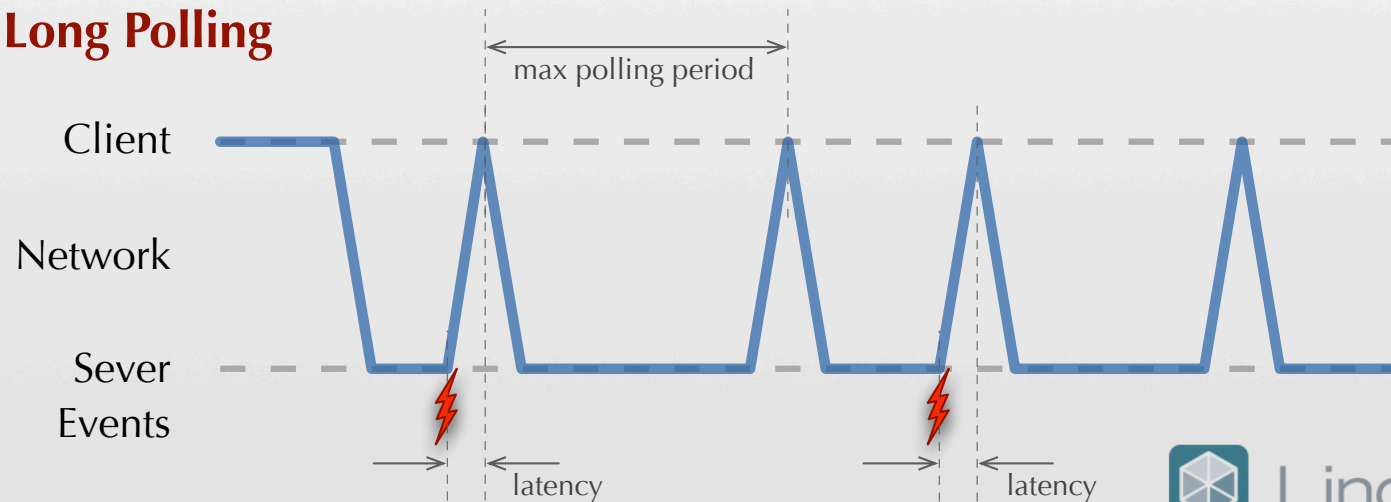


# Polling vs. Long Polling

## Polling



## Long Polling



# Content Transport

Data is moved through the system in:

Message Bodies

BOSH, Bayeux

Web Socket protocol

WebSock

HTTP

rHTTP



# Features of HTTP

- URLs
- Headers
- Content Negotiation

All use them in establishment to different degrees

Only rHTTP uses them once operating





# Connections

How many connections it takes

1

BOSH, WebSock

1 or 2

Bayeux

2

rHTTP



# Proxies

How do they work with proxies:

No Problem

BOSH, Bayeux

Need CONNECT

WebSocket, rHTTP



# Caching

We don' need no stinkin' caching!



# GET /contributors HTTP/1.1

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