

Other Protocols & Use-Case

- Some WebSocket Dissatisfaction
- Other Use-Cases
- Better HTTP?
- Other Protocol?
- Better WebSocket?
- Extensible WebSocket?

Some WebSocket Dissatisfaction

- See mailing list for full details:
 - Focused entirely at one world view/browser clients
 - Difficult specification document/style
 - Extensible only by application (not infrastructure)
 - Low semantic content
 - Scalability issues with connection usage.
 - Opaque to intermediaries/infrastructure
 - Repeat problems of HTTP pipelining
 - Discards decades of experience in HTTP
 - Only simple for simple things!
- <http://www.ietf.org/mail-archive/web/hybi/current/msg00820.html>

Example other Use-Case

- Send rich content:
 - Images etc. to/from mobiles or thick clients
 - Inverted requests – eg rHTTP
- Client State:
 - Cache pre-fill, expires override.
 - setting/changing cookies for failover/migration
- Value add intermediaries:
 - load balancing, SSL Offload, aggregation

Different Perspectives

- Client Developers, who just want access to:
 - Existing protocols:
 - IRC, XMPP, etc.
 - Want a Socket (or as close as they can get).
- Client/Middle/Server Developers, who use HTTP and rich content, but want:
 - Push rich content
 - Reverse request semantics
 - Work with Client cache/state
 - HTTP flaws fixed
 - To use existing infrastructure

a) Make a Better HTTP ?

- Incrementally improve HTTP to be bidirectional
 - Starting from future work from BP document
 - Eg rHTTP, WAKA
- Difficult and delicate task!
- UNHAPPY:
 - Those who want a raw socket
 - Those who think HTTP should not be used

b) Use a Better Protocol ?

- Use an alternative protocol for WebSocket API
- BEEP?
- Bidirectional Web Transport Protocol (BWTP)
 - thought experiment (partially implemented!)
 - <http://www.ietf.org/id/draft-wilkins-hybi-bwtp-00.txt>
 - Optional meta-data / mime content
 - Multi channel for connection sharing/aggregation
 - Intermediaries first class participants
 - Can make good policy and add value!
- “Better” depends on perspective

BWTP Example

BWH 0 38 OPEN /chat/room

Content-Type: text/json;charset=utf-8

Accept-Language: en

BWM 0 46

{user="Bill" text="Bill has joined the room!"}

BWM 0 37

{user="Bill" text="I'm fine thanks"}

BWH 0 0 CLOSED

BWH 0 32 OPENED

Content-Origin: www.mychat.com

Content-Language: en

BWM 0 43/43

{user="Ted" text="Hello Bill, how are you"}

BWM 0 47/47

{user="System" text="the room is closed"}

BWH 0 0 CLOSED

c) Make WebSocket Better

- IETF Processes applied to improve draft:
 - Security
 - Shutdown
 - I18n
 - Error handling
 - Forward compatibility
- Better Features?
 - Multiplexing?
 - Fragmentation?
 - “Better” still depends on perspective

d) Make WebSocket Extensible

- Improve on the base protocol to allow layers to better address more issues/use-cases
- Avoids debate about what is “better”
- WebSocket needs extension points
 - Self describing content
 - Opaque to intermediaries
 - IANA allocation of frame types ?
 - SPI between Application and protocol ?

e) All of the above ?

- One size may not fit all!
 - There are some easy HTTP hints
 - WebSocket must be made extensible
 - **IETF processes**
 - A better protocols & WebSocket can be achieved by Standardized layered extensions
- Hybi Working Group