WebSocket Server Implementation

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HTTP Request Model

Http Client

Http Request

Http Server

Waiting

Run Service

Service Thread

Http Response
HTTP Weakness

Server sends response only if someone requests it.
WebSocket Protocol

• New protocol in Application layer.

• Enable web pages to build two-way channel with a remote host.

Refer to: http://www.mironov.com/articles/osi_layers/
## WebSocket Client Supporting

<table>
<thead>
<tr>
<th>Browser</th>
<th>Support Level</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>IE 8</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>IE 9</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Firefox 3.6</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Firefox 4</td>
<td>O</td>
<td>v. 76</td>
</tr>
<tr>
<td>Chrome 5</td>
<td>O</td>
<td>v. 56</td>
</tr>
<tr>
<td>Chrome 6</td>
<td>O</td>
<td>v. 76</td>
</tr>
</tbody>
</table>
WebSocket Client API

• WebSocket
  – Constructor(uri);
  – Attributes
    • readyState
  – Methods
    • send(message);
    • close();

  – Events
    • onstart
    • onmessage
    • onclose
    • onerror
WebSocket Server Implementation

1. Handshake and Build Channel with Client
2. Send & Receive Data
3. Close Channel

Refer to: http://tools.ietf.org/html/draft-hixie-thewebsocketprotocol-75
Handshake

Client
GET /demo HTTP/1.1
Upgrade: WebSocket
Connection: Upgrade
Origin: http://example.com
Host: example.com

Server
HTTP/1.1 101 WebSocket Protocol Handshake
Upgrade: WebSocket
Connection: Upgrade
Sec-WebSocket-Origin: http://example.com
Sec-WebSocket-Location: ws://example.com/demo
Data bytes should be encoded/decoded by UTF-8
Close Channel

Simply close the WebSocket connection.
Demo Time