WebSocket 101

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- 1. WHAT?
- 2. WHY?
- 3. HOW?
- 4. DEMO

WHAT

基于TCP的全双工通信协议

WHY

麻烦&开销大

HOW - 链接

浏览器 服务器

GET /chat HTTP/1.1 HTTP/1.1 101 Switching Protocols

Host: server.example.com Upgrade: websocket

Upgrade: websocket Connection: Upgrade

Connection: Upgrade Sec-WebSocket-Accept: s3pPLMBiTxaQ9kYGzzhZRbK+xOo=

Sec-WebSocket-Key: dGhllHNhbXBsZSBub25jZQ== Sec-WebSocket-Protocol: chat

Origin: http://example.com

Sec-WebSocket-Protocol: chat, superchat

Sec-WebSocket-Version: 13

Base64加密密钥 BASE64 (SHA1 (密钥+固定字符串))

固定字符串: 258EAFA5-E914-47DA-95CA-C5AB0DC85B11

HOW - 数据

```
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
F|R|R|R| opcode|M| Payload len |
                                   Extended payload length
|I|S|S|S|
        (4) A
                  (7)
                                            (16/64)
               Ísĺ
                                (if payload len==126/127)
N|V|V|V|
               |K|
 |1|2|3|
     Extended payload length continued, if payload len == 127
                              Masking-key, if MASK set to 1
Masking-key (continued)
                                        Payload Data
                    Payload Data continued ...
                    Payload Data continued ...
```

• FIN: 结束标志位 (1 bit)

• RSV: 预留扩展位, 默认为0(1 bit each)

• opCode: 操作码(4 bit)

• mask: 掩码标识位 (1 bit)

• payloadLength: 正文长度(7 bits / 7+16 bits / 7+64 bits)

maskingKey: 掩码 (0 / 4 bytes)

• payloadData: 正文

HOW - 服务器

- 1. 解析协议头
- 2. 返回协议头
- 3. 建立链接
- 4. 收发数据
- 5. 断开链接/链接断开处理

HOW - 浏览器

- 1. 发请求
- 2. 建立链接
- 3. 收发数据
- 4. 断开链接/链接断开处理

DEMO