

A world map with a blue and white color scheme, overlaid with a complex network of blue lines representing global connectivity. The map is centered in the background of the slide.

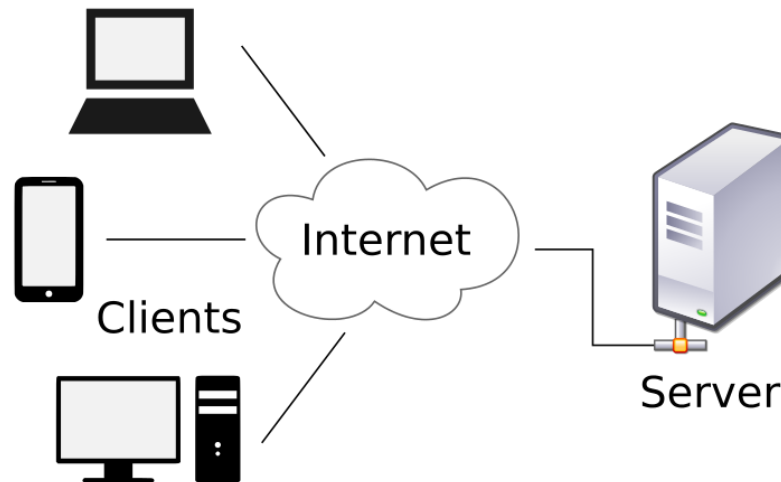
Web Sockets
John R Williams
MIT



Web Client-Server model

Assumes client initiates call to server

Server responds to client



HTTP vs Web Socket



Request Headers [view parsed](#)

```
GET / HTTP/1.1
Host: mit.edu
Connection: keep-alive
Cache-Control: max-age=0
Upgrade-Insecure-Requests: 1
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/69.0.3497.100 Safari/537.36
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8
Accept-Encoding: gzip, deflate
Accept-Language: en-US,en;q=0.9
Cookie: __gads=ID=f7a5f1a4672203a9:T=1483978391:S=ALNI_MZ_sRuCyFFGM0Pjx31xd1Kdae0mow; _ga=GA1.2.456453418.1479941050; ajs_user_id=null; ajs_oup_id=null; ajs_anonymous_id=%22595a63ae-1f01-4a1b-ade4-3bcb21d256ed%22; WZRK_G=d1365281cac54ee8a6032b3f8b271e76; __utma=242276382.4564534.1479941050.1509632399.1526132998.4; __utmz=242276382.1526132998.4.1.utmcsr=google|utmccn=(organic)|utmcmd=organic|utmctr=(not%20provided); .c_UA-1379086-40=1.1531342764.CjwKCAjw1ZbaBRBUEiwa4VQCIWbknFwLnHHSZuWFIlnmwrRv96Y3M0Ig-a7IVg31uDnnHbs3ITpUdRoCJ4kQAvD_BwE; __qca=P0-95170381.536324991675; com.silverpop.iMAWebCookie=67b02ba1-a437-7663-125b-01c10d643bda; __unam=70b497d-162d4547362-5692f793-8; _gcl_au=1.1.93206395738227219; _gid=GA1.2.2075930851.1538399835; _gat_gtag_UA_1592615_11=1; _gat_gtag_UA_1592615_30=1; QSI_HistorySession=http%3A%2F%2Fmit.edu%2F538414298714
If-None-Match: "10e89628-84b5-5bb19c5b"
```

```
GET ws://websocket.example.com/ HTTP/1.1
Origin: http://example.com
Connection: Upgrade
Host: websocket.example.com
Upgrade: websocket
```

WebSockets provide a persistent connection between a client and server that both parties can use to start sending data at any time.

The client establishes a WebSocket connection through a process known as the WebSocket handshake. This process starts with the client sending a regular HTTP request to the server. An Upgrade header is included in this request that informs the server that the client wishes to establish a WebSocket connection.

