

# Parlez-Vous HTTP?

Frédéric Jean  
Principal Software Engineer  
Snugg Home LLC

Why talk about HTTP?

A brief history...

1989-1990: Initial WWW  
prototype developed on NeXT  
workstation



1990 - Tim Berners-Lee invents the World Wide Web  
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2018 - Tim Berners-Lee invents the World Wide Web  
2019 - Tim Berners-Lee invents the World Wide Web  
2020 - Tim Berners-Lee invents the World Wide Web  
2021 - Tim Berners-Lee invents the World Wide Web  
2022 - Tim Berners-Lee invents the World Wide Web  
2023 - Tim Berners-Lee invents the World Wide Web  
2024 - Tim Berners-Lee invents the World Wide Web

Créé sur un Next Computer que Tim Berners-Lee inventa le World Wide Web à la fin des années 90.  
At the end of the 90s, Tim Berners-Lee invented the World Wide Web using this Next computer as the first Web server.  
En fin des années 90, Tim Berners-Lee inventa le World Wide Web sur un Next Computer que Tim Berners-Lee inventa à la fin des années 90.

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1991: HTTP/0.9 released

1996: HTTP/1.0 released  
as RFC 1945

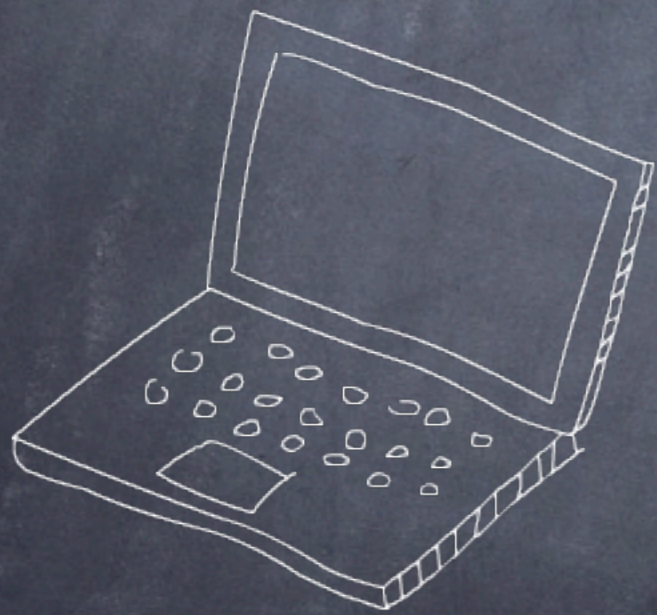
1996: HTTP/1.1 draft  
introduced

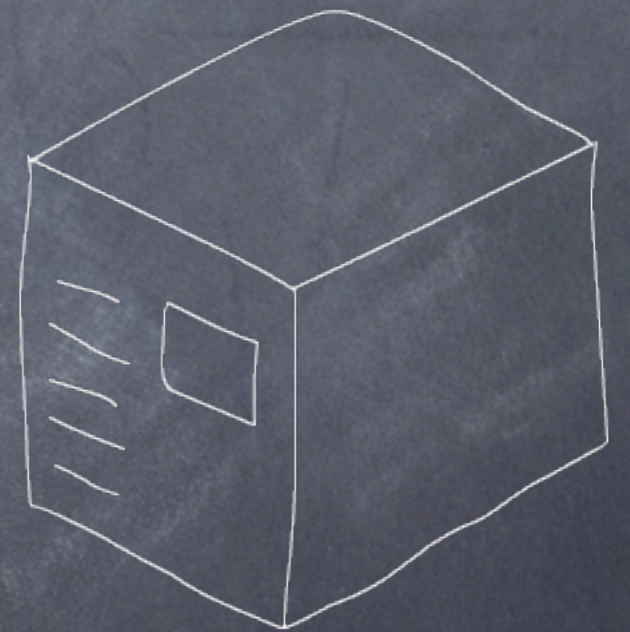
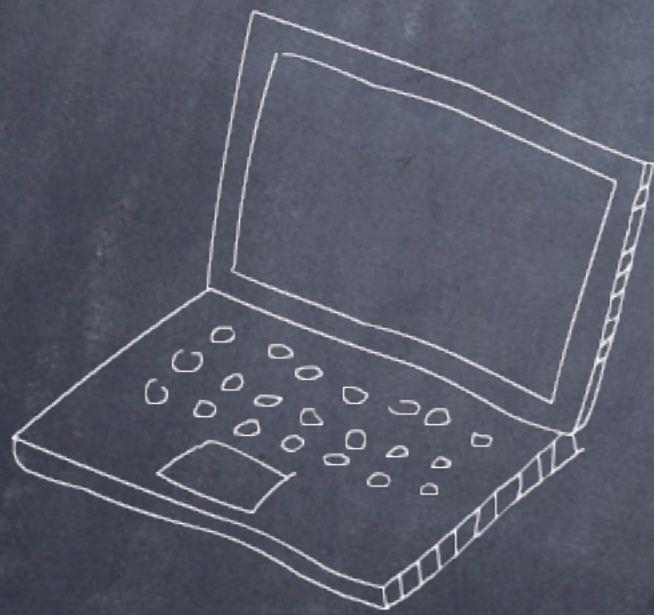
1997: HTTP/1.1 released  
as RFC 2068

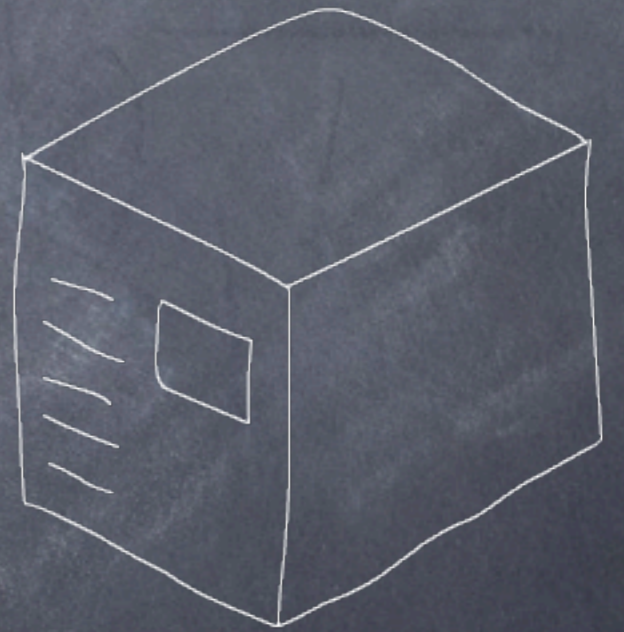
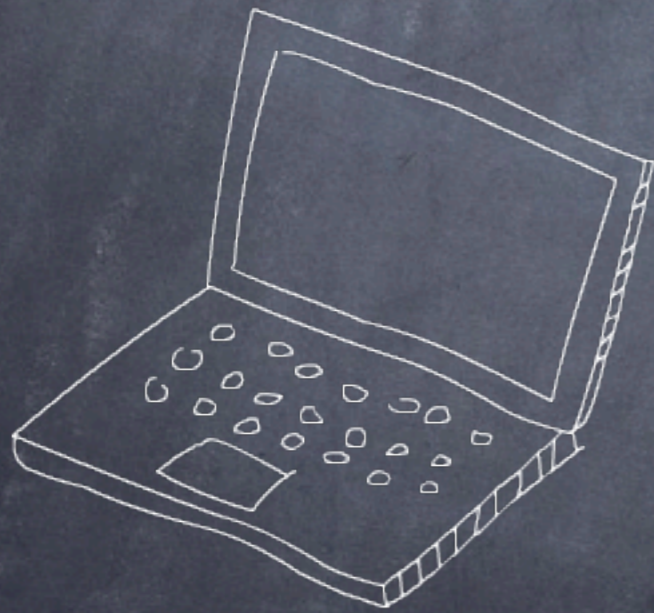
1999: RFC 2616 Updates  
and improves HTTP/1.1

What is HTTP?

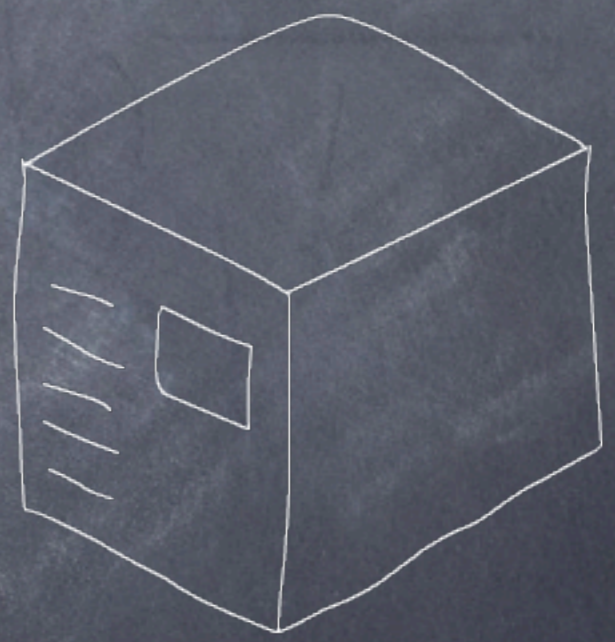
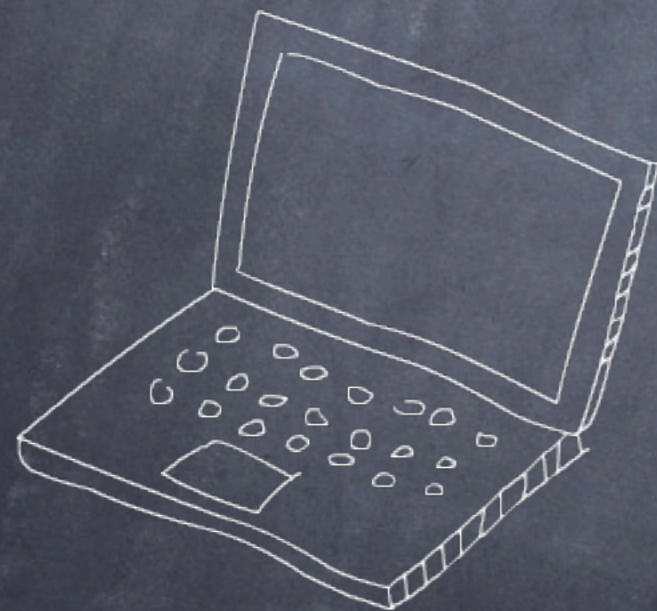








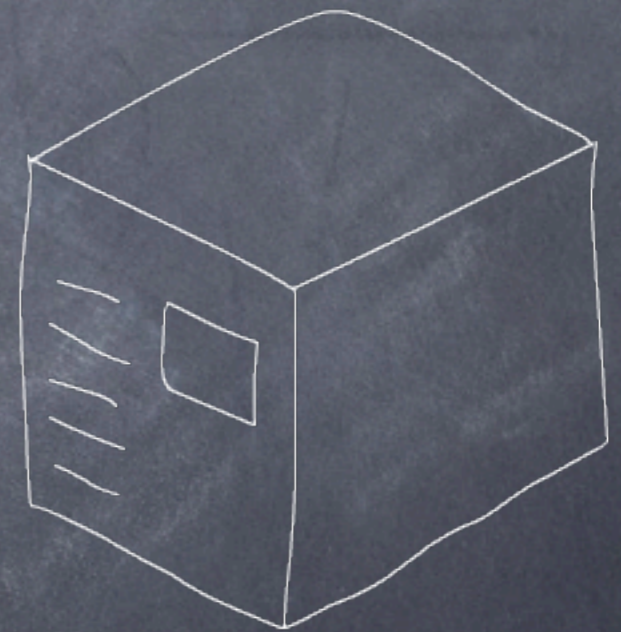
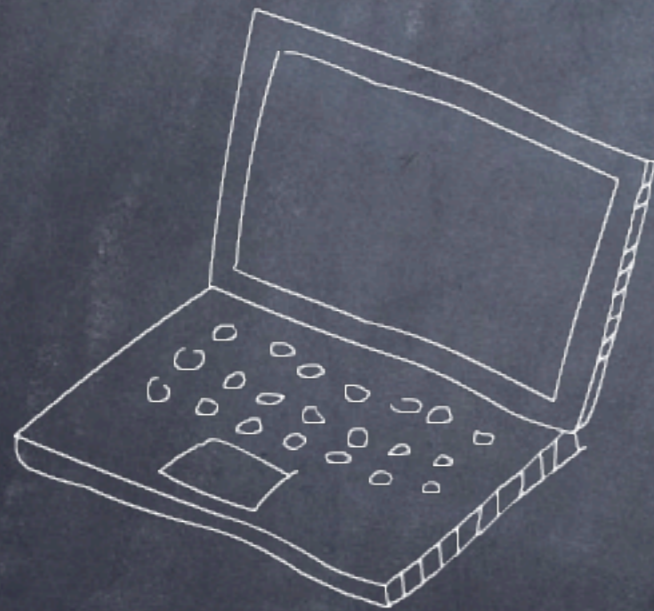
GET /index.html HTTP/1.1  
Host: boulderjug.org  
User-Agent: ...



```
GET /index.html HTTP/1.1
Host: boulderjug.org
User-Agent: ...
```

```
HTTP/1.1 200 OK
Content-Encoding: gzip
Expires: Thu, 05 Jan 2012 04:39:29 GMT
Content-Type: text/html; charset=utf-8
Content-Length: 11923
Date: Thu, 05 Jan 2012 04:39:04 GMT
X-Varnish: 3293735202

<html>...</html>
```



# HTTP Is...

# HTTP Is...

- Stateless

# HTTP Is...

- Stateless
- Insecure

# HTTP Is...

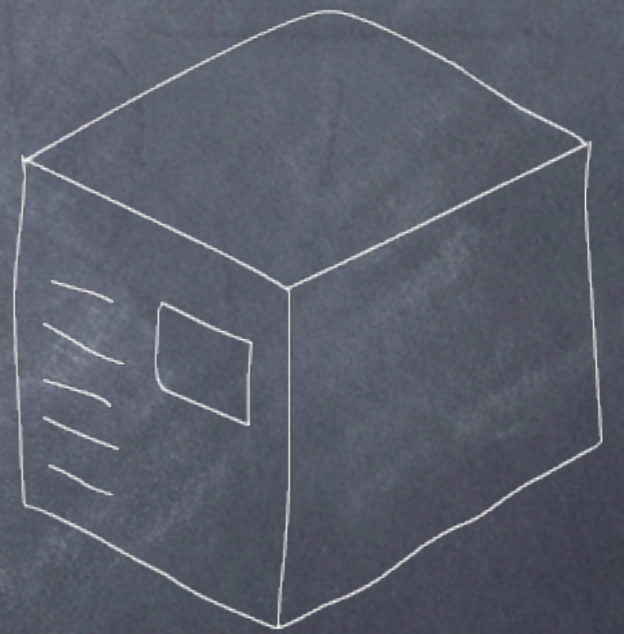
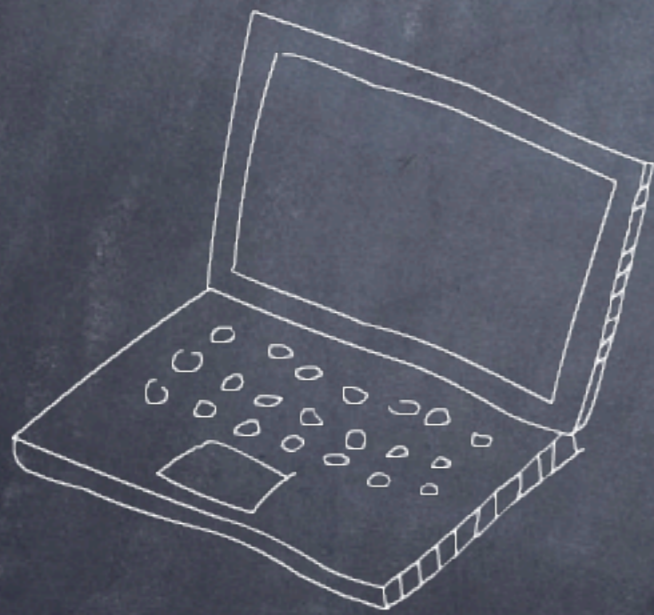
- Stateless
- Insecure
- Textual

# Message Format

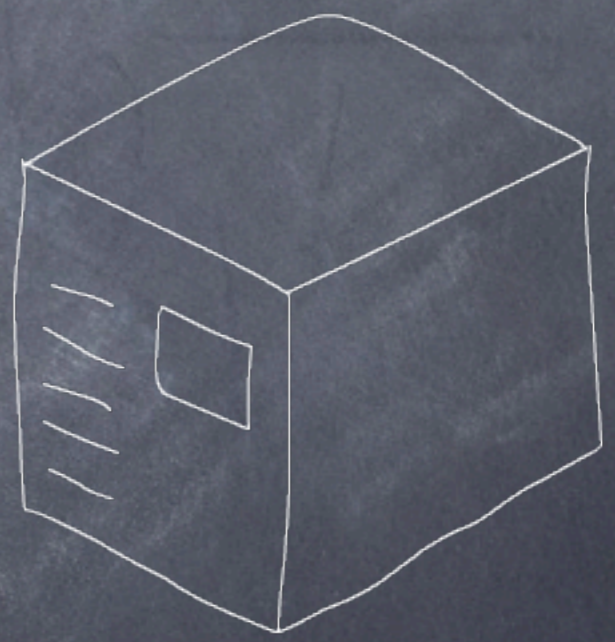
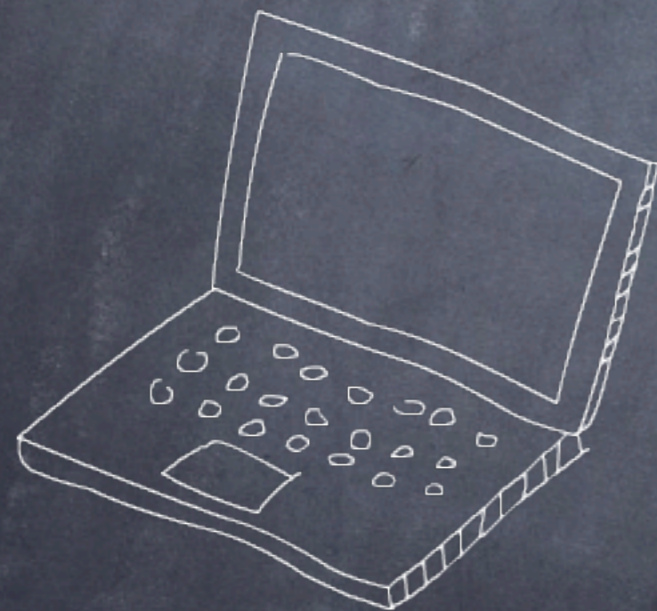
<Initial line>

<Headers>

<Body>



```
GET /index.html HTTP/1.1
Host: boulderjug.org
User-Agent: ...
```



# Request

```
GET / HTTP/1.1
Host: boulderjug.org
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.7; rv:8.0.1) Gecko/20100101 Firefox/8.0.1
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language: en-us,en;q=0.5
Accept-Encoding: gzip, deflate
Accept-Charset: ISO-8859-1,utf-8;q=0.7,*;q=0.7
Cookie: __utma=1.709566692.1315366607.1322835520.1325736840.8;
        __utmz=1.1325736840.8.8.utmcsr=typepad.com|utmccn=(referral)|
utmcmd=referral|utmcct=/site/blogs/6a010536bb2e9f970b010536bb2ea2970b/
posts;
        __qca=P0-138304784-1315366608389;
        __utmc=1
```

C<sub>R</sub>L<sub>F</sub>

# Request Initial Line

GET / HTTP/1.1

GET / HTTP/1.1

# HTTP Request Methods

| Method  | Safe | Idempotent |
|---------|------|------------|
| GET     | X    | X          |
| POST    |      |            |
| PUT     |      | X          |
| DELETE  |      | X          |
| HEAD    | X    | X          |
| OPTIONS | X    | X          |
| CONNECT |      |            |
| PATCH   |      |            |
| TRACE   | X    | X          |

GET  HTTP/1.1

GET / HTTP/1.1

# Request Headers

Host: [boulderjug.org](http://boulderjug.org)

User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.7; rv:8.0.1)...

Accept: text/html,application/xhtml+xml,application/xml;q=0.9,\*/\*;q=0.8  
Accept-Language: en-us,en;q=0.5  
Accept-Encoding: gzip, deflate  
Accept-Charset: ISO-8859-1,utf-8;q=0.7,\*;q=0.7

Cookie: \_\_utma=1.709566692.1315366607.1322835520.1325736840.8;  
\_\_qca=P0-138304784-1315366608389;  
\_\_utmc=1

Authorization: Basic QWxhZGRpbjpvcGVuIHNlc2FtZQ==

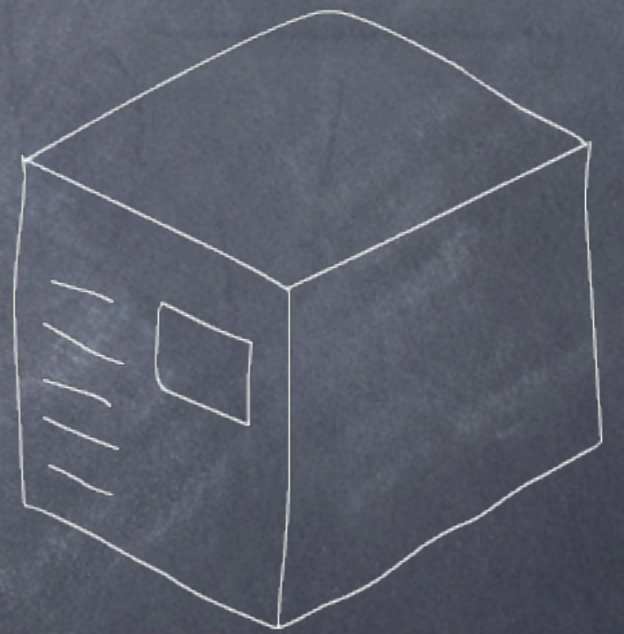
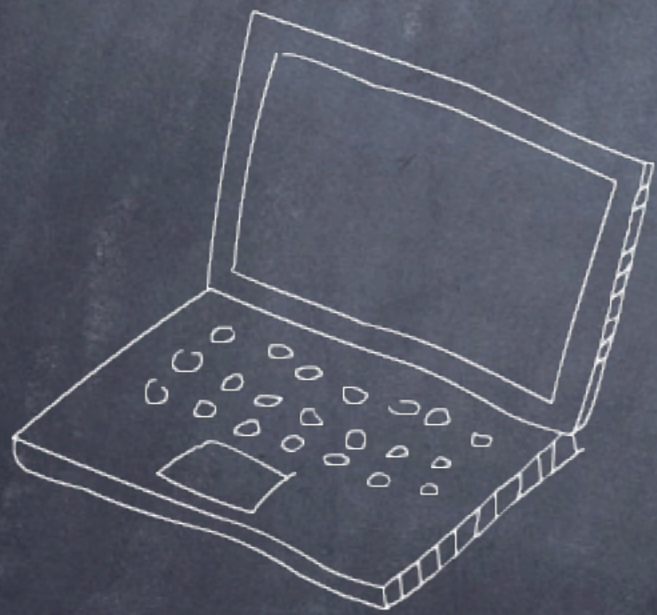
# Request Body

- PUT, POST, PATCH should have a body
- GET, HEAD, OPTIONS, TRACE, CONNECT should not

# Request

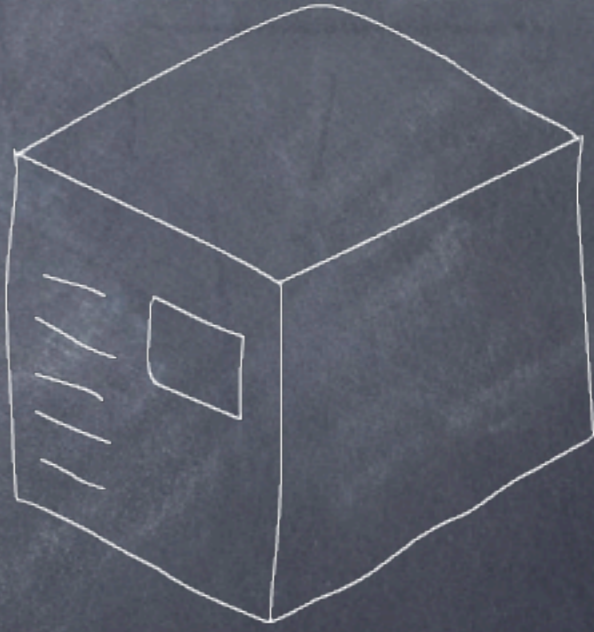
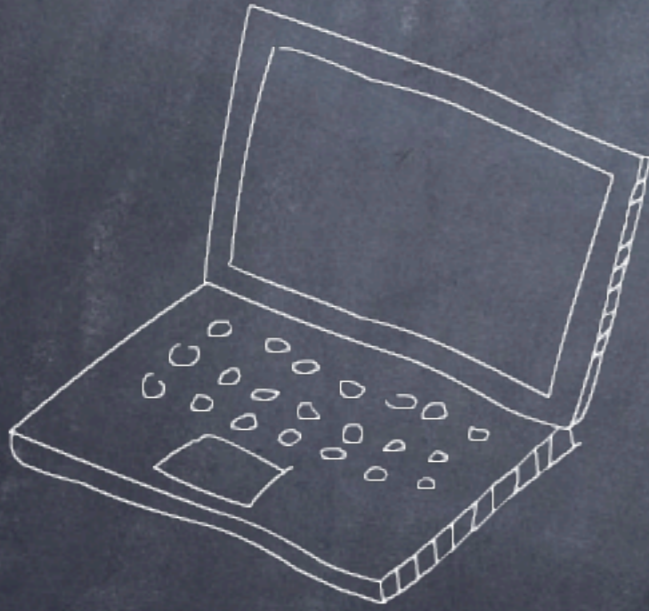
```
GET / HTTP/1.1
Host: boulderjug.org
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.7; rv:8.0.1) Gecko/
20100101 Firefox/8.0.1
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language: en-us,en;q=0.5
Accept-Encoding: gzip, deflate
Accept-Charset: ISO-8859-1,utf-8;q=0.7,*;q=0.7
Cookie: __utma=1.709566692.1315366607.1322835520.1325736840.8;
      __utmz=1.1325736840.8.8.utmcsr=typepad.com|utmccn=(referral)|
utmcmd=referral|utmcct=/site/blogs/6a010536bb2e9f970b010536bb2ea2970b/
posts;
      __qca=P0-138304784-1315366608389;
      __utmc=1
```

C<sub>R</sub>L<sub>F</sub>



```
HTTP/1.1 200 OK
Content-Encoding: gzip
Expires: Thu, 05 Jan 2012 04:39:29 GMT
Content-Type: text/html; charset=utf-8
Content-Length: 11923
Date: Thu, 05 Jan 2012 04:39:04 GMT
X-Varnish: 3293735202

<html>...</html>
```



# Response

```
HTTP/1.1 200 OK
Server: Apache
X-PhApp: oak-tp-web026
X-Webserver: oak-tp-web026
Vary: cookie,Accept-Encoding
Content-Encoding: gzip
Keep-Alive: timeout=300, max=100
Content-Type: text/html; charset=utf-8
Content-Length: 12033
Date: Fri, 06 Jan 2012 05:48:59 GMT
X-Varnish: 3423770493
Age: 0
Via: 1.1 varnish
```

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" id="typepad-standard"
xmlns:fb="http://www.facebook.com/2008/fbml">
...
</html>
```

# Response Initial Line

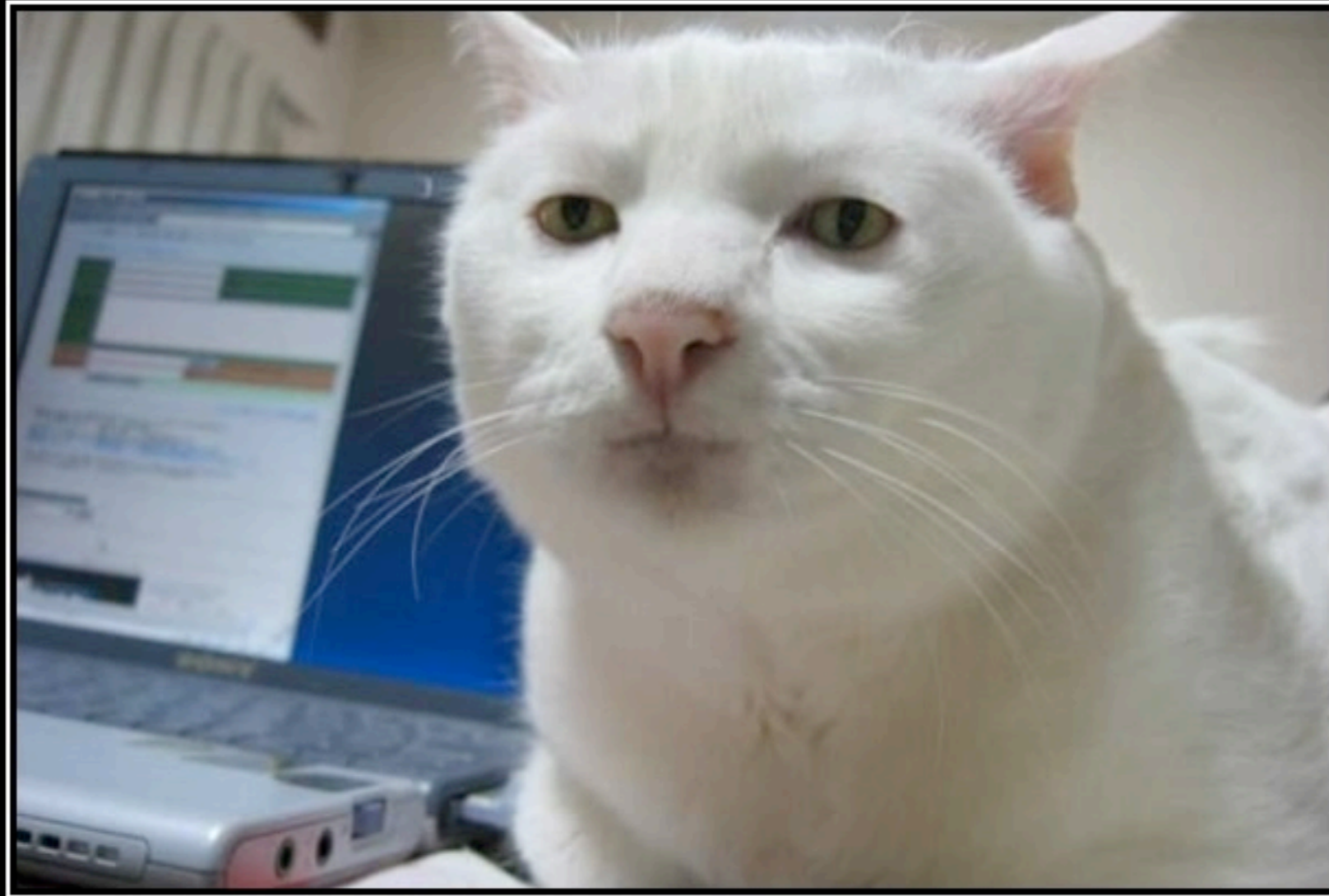
aka: Status Line

HTTP/1.1 200 OK

HTTP/1.1 200 OK

HTTP/1.1 200 OK

HTTP/1.1 200 OK



200

OK



201

Created



202

Accepted

HTTP/1.1 202 Accepted

Location: <http://example.com/asynch/jobs/3332334>



301

Moved Permanently

HTTP/1.1 301 Moved Permanently  
Location: [http://example.com/new\\_path](http://example.com/new_path)



302 Found

HTTP/1.1 302 Found

Location: [http://example.com/new\\_path](http://example.com/new_path)



307

Temporary Redirect

HTTP/1.1 307 Temporary Redirect

Location: <http://example.com/maintenance.html>



**400**  
Bad Request



401  
Unauthorized

HTTP/1.1 401 Authorization Required

Server: HTTPd/1.0

Date: Sat, 27 Nov 2004 10:18:15 GMT

WWW-Authenticate: Basic realm="Secure Area"

Content-Type: text/html

Content-Length: 311

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01  
Transitional//EN"
```

```
"http://www.w3.org/TR/1999/REC-html401-19991224/  
loose.dtd">
```

```
<HTML>
```

```
  <HEAD>
```

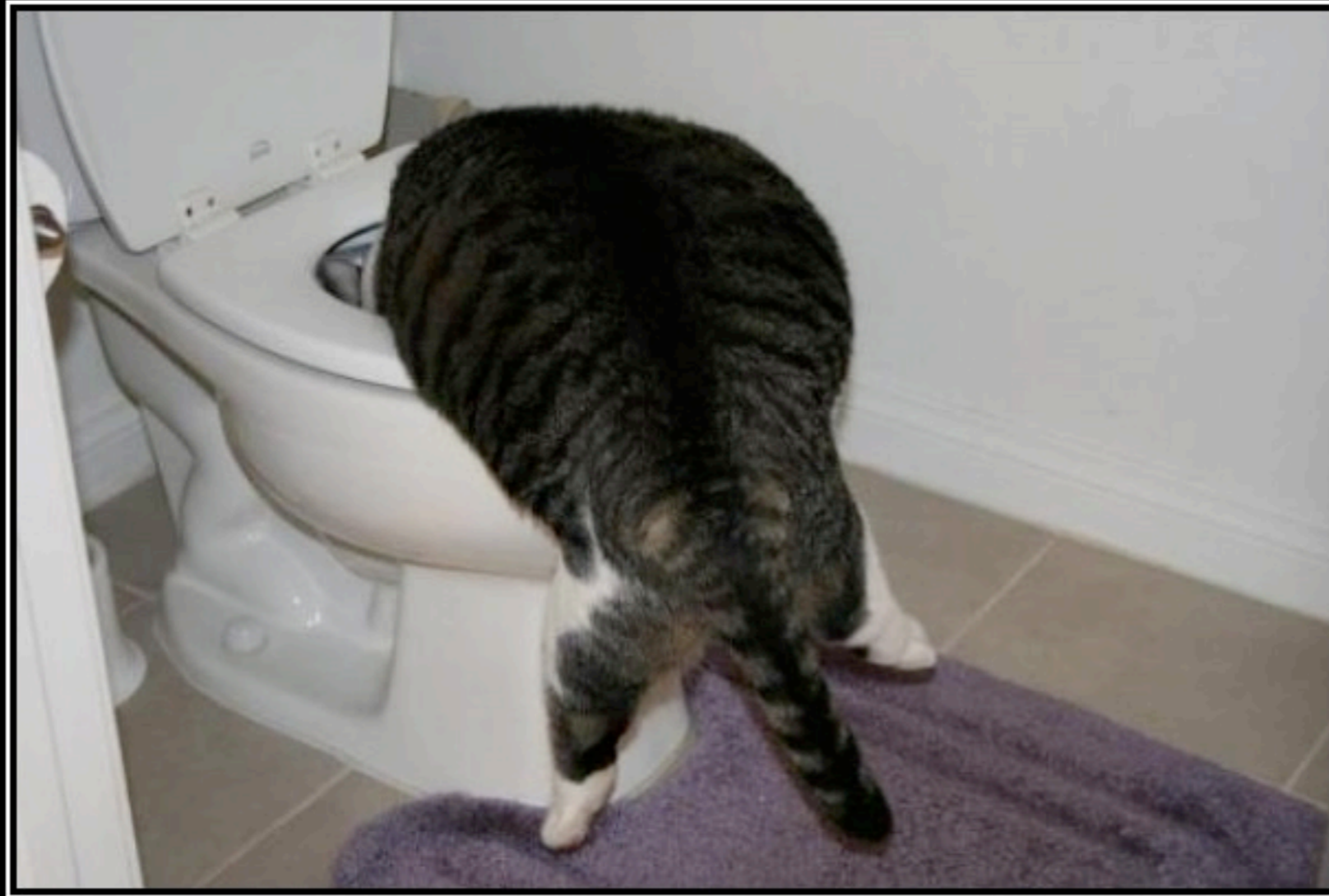
```
    <TITLE>Error</TITLE>
```

```
    <META HTTP-EQUIV="Content-Type" CONTENT="text/html;  
charset=ISO-8859-1">
```

```
  </HEAD>
```

```
  <BODY><H1>401 Unauthorized.</H1></BODY>
```

```
</HTML>
```



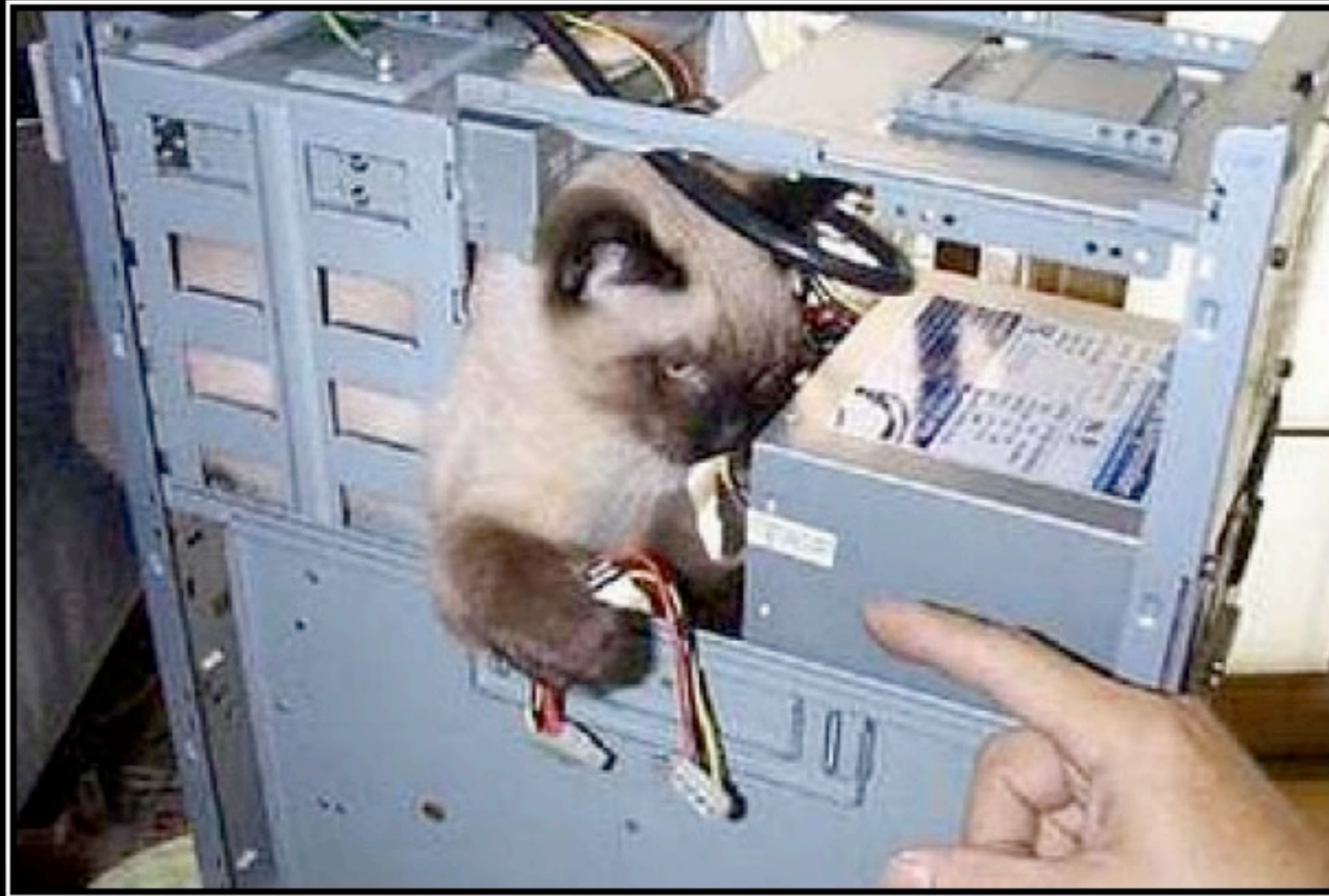
403

Forbidden



404

Not Found



**500**  
Internal Server Error



503

Service Unavailable

# HTTP Response Headers

- Server Information
- Resource Metadata
- Caching Hints

# Server Information Headers

```
Server: Apache  
X-PhApp: oak-tp-web026  
X-Webserver: oak-tp-web026  
X-Varnish: 3423770493  
Via: 1.1 varnish
```

# Resource Metadata

Content-Encoding: gzip

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

Content-Length: 12033

Date: Fri, 06 Jan 2012 05:48:59 GMT

# Caching Hints

Vary: cookie,Accept-Encoding

Age: 0

Cache-Control: max-age=600

Expires: Mon 06 Oct 2008 12:43:48 GMT

# Connection Headers

Connection: close

# HTTP Conditional Requests

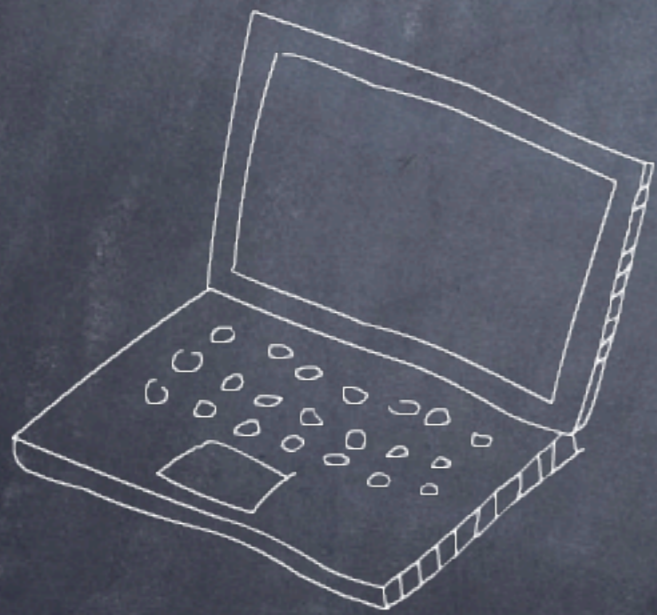
| Server        | Client                                   |
|---------------|--|
| Last-Modified | If-Modified-Since<br>If-Unmodified-Since |
| ETag          | If-None-Match                            |

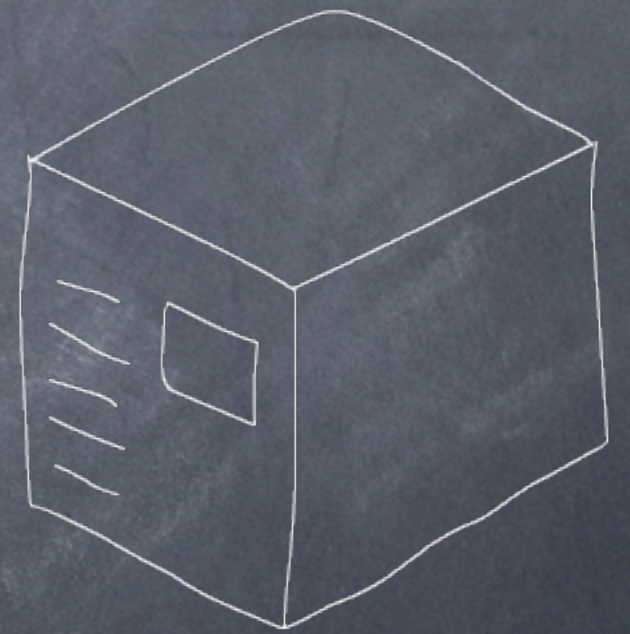
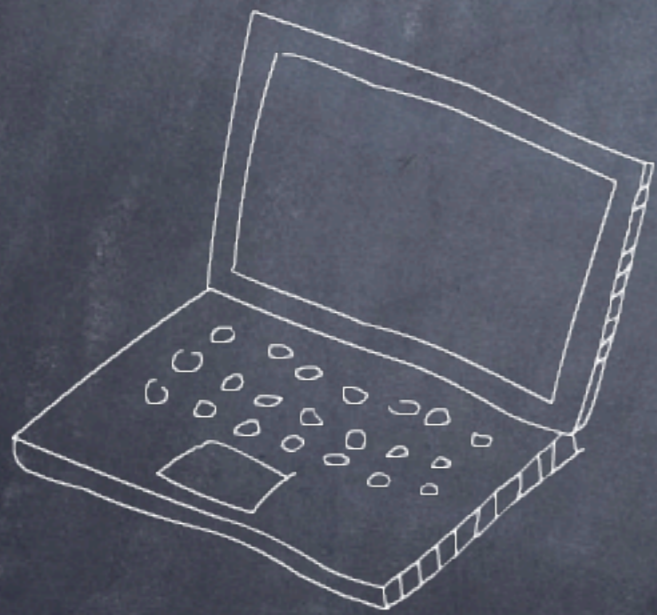
# Response

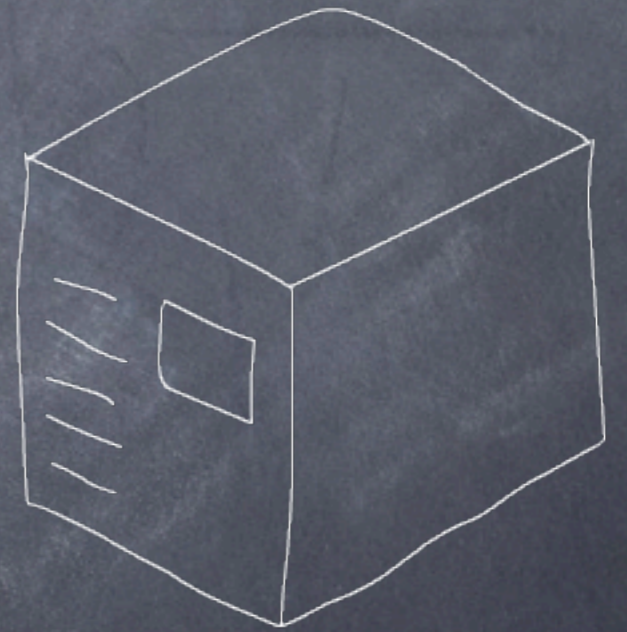
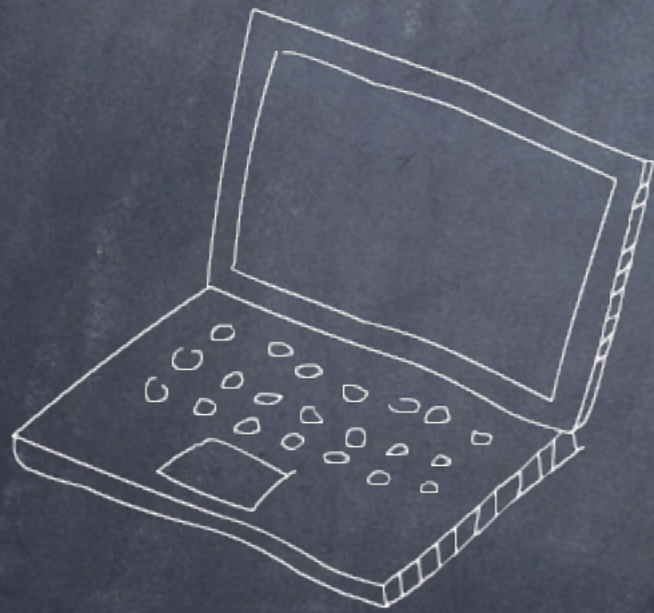
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Server: Apache
X-PhApp: oak-tp-web026
X-Webserver: oak-tp-web026
Vary: cookie,Accept-Encoding
Content-Encoding: gzip
Keep-Alive: timeout=300, max=100
Content-Type: text/html; charset=utf-8
Content-Length: 12033
Date: Fri, 06 Jan 2012 05:48:59 GMT
X-Varnish: 3423770493
Age: 0
Via: 1.1 varnish
```

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" id="typepad-standard"
xmlns:fb="http://www.facebook.com/2008/fbml">
...
</html>
```

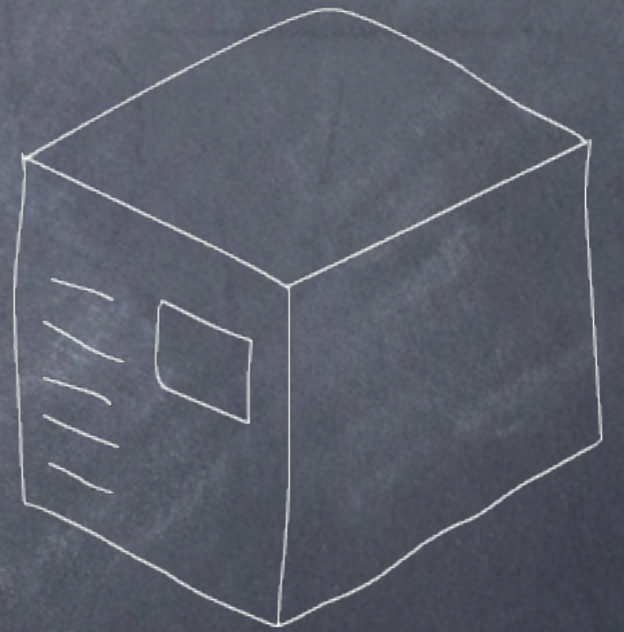
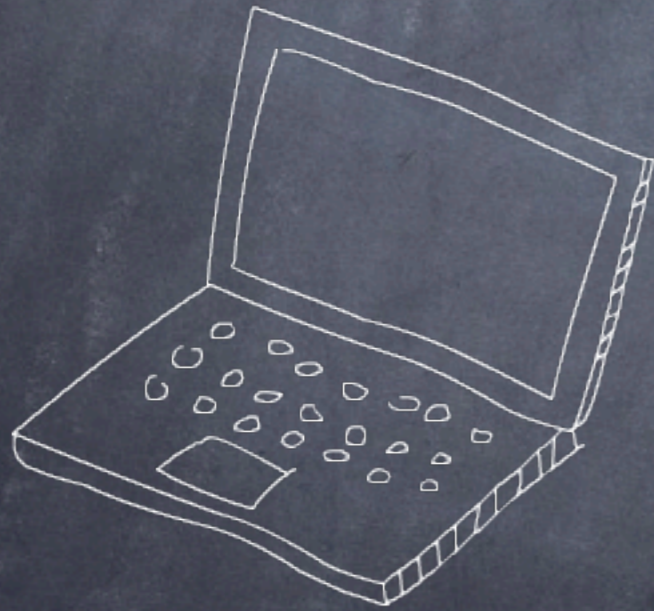








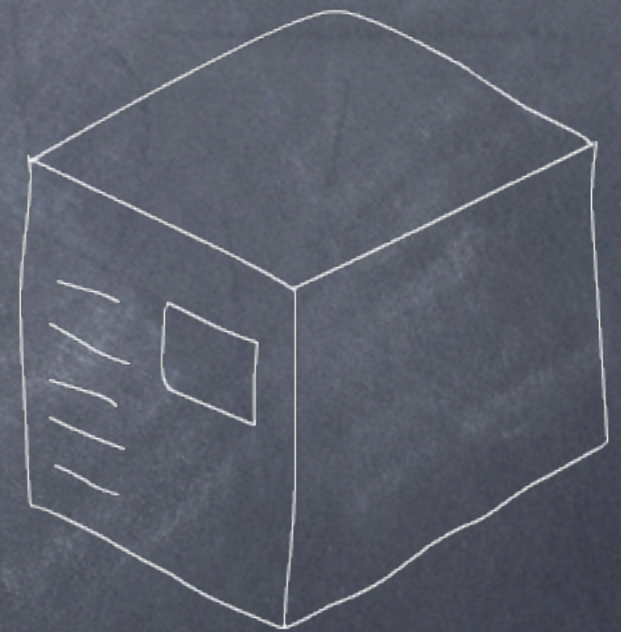
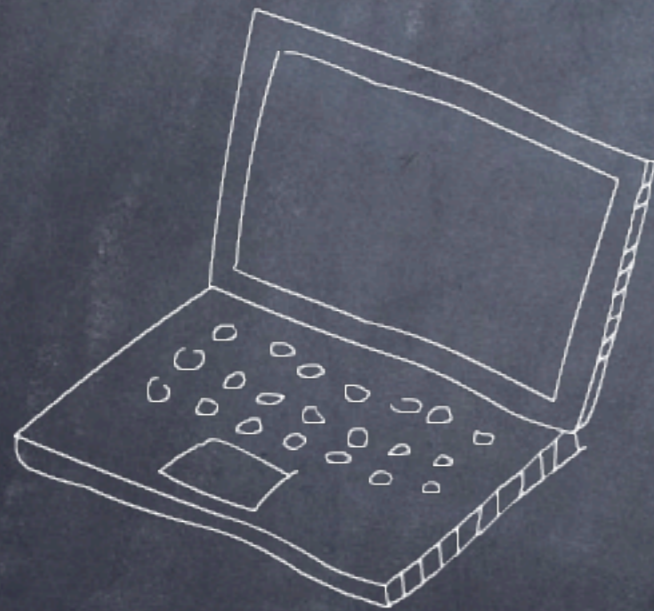
GET /index.html HTTP/1.1  
Host: boulderjug.org  
User-Agent: ...



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GET /index.html HTTP/1.1
Host: boulderjug.org
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Content-Length: 11923
Date: Thu, 05 Jan 2012 04:39:04 GMT
X-Varnish: 3293735202

<html>...</html>
```



# Troubleshooting HTTP

# Browser Developer Tools

| Method                    | Status                | Response                 | Size    | Time               | Duration |
|---------------------------|-----------------------|--------------------------|---------|--------------------|----------|
| GET javanet_button_170.   | 200 OK                | today.java.net           | 2.1 KB  | 209.189.227.38:80  | 487ms    |
| GET typepad.js            |                       | twitter.com              | 0       |                    |          |
| GET boulderjug.json?ca... |                       | twitter.com              | 0       |                    |          |
| GET jobroll?q=Java&l=Bc   | 301 Moved Permanently | indeed.com               | 266 B   | 50.57.17.148:80    | 491ms    |
| GET typepad.js            | 200 OK                | twitter.com              | 759 B   | 199.59.149.198:443 | 1.13s    |
| GET boulderjug.json?ca... | 200 OK                | twitter.com              | 1.3 KB  | 199.59.149.198:443 | 1.13s    |
| GET base-weblog.css       | 200 OK                | static.typepad.com       | 23.2 KB | 204.9.178.11:80    | 272ms    |
| GET tipjar.css            | 200 OK                | static.typepad.com       | 3.6 KB  | 204.9.178.11:80    | 107ms    |
| GET theme-journal_blacl   | 200 OK                | static.typepad.com       | 350 B   | 204.9.178.11:80    | 104ms    |
| GET quant.js              |                       | edge.quantserve.com      | 0       |                    |          |
| GET blogside-toolbar-cc   | 200 OK                | boulderjug.org           | 27.9 KB | 204.9.177.195:80   | 198ms    |
| GET quant.js              | 304 Not Modified      | edge.quantserve.com      | 2.1 KB  | 64.94.107.20:443   | 1.19s    |
| GET theme-journal.css     | 200 OK                | static.typepad.com       | 15.9 KB | 204.9.178.11:80    | 202ms    |
| GET ga.js                 |                       | google-analytics.com     | 0       |                    |          |
| GET join.gif              | 200 OK                | us.il.yimg.com           | 1.6 KB  | 64.145.92.50:80    | 482ms    |
| GET embed?title=Future.   | 200 OK                | google.com               | 1.7 KB  | 74.125.227.50:443  | 1.77s    |
| GET ga.js                 | 304 Not Modified      | ssl.google-analytics.com | 12.7 KB | 74.125.227.30:443  | 745ms    |
| GET date-header-bg.gif    | 200 OK                | static.typepad.com       | 274 B   | 204.9.178.11:80    | 53ms     |
| GET jobroll?q=Java&l=Bc   | 200 OK                | jobroll.indeed.com       | 1 KB    | 50.57.17.148:80    | 155ms    |
| GET tab.js                | 200 OK                | cdn.uservoice.com        | 5.6 KB  | 184.29.145.107:80  | 165ms    |
| GET feed-icon-16x16.gif   | 200 OK                | static.typepad.com       | 651 B   | 204.9.178.11:80    | 56ms     |
| GET __utm.gif?utmwv=5.    |                       | google-analytics.com     | 0       |                    |          |
| GET __utm.gif?utmwv=5.    | 200 OK                | ssl.google-analytics.com | 35 B    | 74.125.227.30:443  | 152ms    |
| GET __utm.gif?utmwv=5.    | 304 Not Modified      | ssl.google-analytics.com | 35 B    | 74.125.227.30:443  | 67ms     |
| GET stats?blog_id=1801    |                       | typepad.com              | 0       |                    |          |
| GET feedback_tab_white.   | 200 OK                | cdn.uservoice.com        | 2.3 KB  | 184.29.145.107:80  | 31ms     |
| GET stats?blog_id=1801    | 200 OK                | typepad.com              | 43 B    | 204.9.178.11:443   | 1.02s    |
| GET stats?blog_id=1801    | 200 OK                | typepad.com              | 43 B    | 204.9.178.11:443   | 77ms     |
| GET pixel;r=188702196:    |                       | pixel.quantserve.com     | 0       |                    |          |
| GET beacon.js             | 200 OK                | b.scorecardresearch.com  | 1.1 KB  | 8.18.42.107:80     | 143ms    |
| GET animation-min.js      | 200 OK                | yui.yahooapis.com        | 4.6 KB  | 68.142.213.142:80  | 514ms    |
| GET pixel;r=188702196:    | 204 No Content        | pixel.quantserve.com     | 0       | 64.94.107.44:443   | 945ms    |
| GET pixel;r=188702196:    | 204 No Content        | pixel.quantserve.com     | 0       | 64.94.107.44:443   | 128ms    |
| GET b?c1=2&c2=603566      | 204 No Content        | b.scorecardresearch.com  | 0       | 8.18.42.107:80     | 68ms     |
| GET custom?id=TPTrack     | 200 OK                | ads.sixapart.com         | 99 B    | 204.9.177.132:80   | 108ms    |
| GET 05235dc491c970d9      | 301 Moved Permanently | google.com               | 227 B   | 74.125.227.50:443  | 149ms    |
| GET 05235dc491c970d9      | 301 Moved Permanently | google.com               | 223 B   | 74.125.227.50:443  | 247ms    |
| GET 05235dc491c970d9      | 200 OK                | google.com               | 4.7 KB  | 74.125.227.50:443  | 73ms     |
| GET 05235dc491c970d9      | 200 OK                | google.com               | 54.6 KB | 74.125.227.50:443  | 266ms    |
| GET calendar_plus_en.gif  | 301 Moved Permanently | google.com               | 194 B   | 74.125.227.50:443  | 80ms     |
| GET free-busy?ctz=Ame     | 200 OK                | google.com               | 669 B   | 74.125.227.50:443  | 825ms    |
| GET toolbar?blog_id=6a.   | 302 Found             | typepad.com              | 35 B    | 204.9.178.11:443   | 62ms     |

Firebug - Boulder JUG

Console HTML CSS Script DOM Net Cookies CSS Usage

Clear Persist All HTML CSS JS XHR Images Flash Media

| URL                | Status | Domain         | Size    | Remote IP        | Timeline |
|--------------------|--------|----------------|---------|------------------|----------|
| GET boulderjug.org | 200 OK | boulderjug.org | 11.8 KB | 204.9.177.195:80 | 1.13s    |

Headers Response Cache HTML Cookies

Response Headers [view source](#)

```

Age 0
Content-Encoding gzip
Content-Length 12035
Content-Type text/html; charset=utf-8
Date Tue, 10 Jan 2012 05:50:58 GMT
Keep-Alive timeout=300, max=100
Server Apache
Vary cookie, Accept-Encoding
Via 1.1 varnish
X-PhApp oak-tp-web033
X-Varnish 3885397351
X-Webserver oak-tp-web033
  
```

Request Headers [view source](#)

















```

Accept text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Charset ISO-8859-1,utf-8;q=0.7,*;q=0.7
Accept-Encoding gzip, deflate
Accept-Language en-us,en;q=0.5
Connection keep-alive
Cookie __utma=1.709566692.1315366607.1322798594.1322835520.7; __utms=1.1322835520.7.7.utmcsr=typepad.com|utmccn=(referral)|utmcmd=referral|utmctt=/site/blogs/6a010536bb2e9f970b010536bb2ea2970b/post/6a010536bb2e9f970b0162fd355a5a970d/edit; __qca=P0-138304784-1315366608389
Host boulderjug.org
User-Agent Mozilla/5.0 (Macintosh; Intel Mac OS X 10.7; rv:8.0.1) Gecko/20100101 Firefox/8.0.1
  
```

|                             |                       |                      |         |                    |       |
|-----------------------------|-----------------------|----------------------|---------|--------------------|-------|
| ▶ GET styles.css?v=6        | 200 OK                | boulderjug.org       | 194 B   | 204.9.177.195:80   | 57ms  |
| ▶ GET print.css             | 200 OK                | static.typepad.com   | 3.6 KB  | 204.9.178.11:80    | 146ms |
| ▶ GET flyouts-min.js        | 200 OK                | static.typepad.com   | 33.3 KB | 204.9.178.11:80    | 372ms |
| ▶ GET 6a010536bb2e9f97      | 200 OK                | boulderjug.org       | 42.7 KB | 204.9.177.195:80   | 438ms |
| ▶ GET 6a010536bb2e9f97      | 200 OK                | boulderjug.org       | 27.8 KB | 204.9.177.195:80   | 398ms |
| ▶ GET 6a010536bb2e9f97      | 200 OK                | boulderjug.org       | 37.7 KB | 204.9.177.195:80   | 432ms |
| ▶ GET 6a010536bb2e9f97      | 200 OK                | boulderjug.org       | 38.7 KB | 204.9.177.195:80   | 457ms |
| ▶ GET 6a010536bb2e9f97      | 200 OK                | boulderjug.org       | 40.7 KB | 204.9.177.195:80   | 428ms |
| ▶ GET 6a010536bb2e9f97      | 200 OK                | boulderjug.org       | 39.5 KB | 204.9.177.195:80   | 446ms |
| ▶ GET 6a010536bb2e9f97      | 200 OK                | boulderjug.org       | 33.5 KB | 204.9.177.195:80   | 623ms |
| ▶ GET 6a010536bb2e9f97      | 200 OK                | boulderjug.org       | 47.7 KB | 204.9.177.195:80   | 641ms |
| ▶ GET UberConf_125x125_     | 200 OK                | nofluffjuststuff.com | 23.7 KB | 63.246.7.41:80     | 653ms |
| ▶ GET javanet_button_170.   | 200 OK                | today.java.net       | 2.1 KB  | 209.189.227.38:80  | 487ms |
| ▶ GET typepad.js            |                       | twitter.com          | 0       |                    |       |
| ▶ GET boulderjug.json?ca... |                       | twitter.com          | 0       |                    |       |
| ▶ GET jobroll?q=Java&l=Bt   | 301 Moved Permanently | indeed.com           | 266 B   | 50.57.17.148:80    | 491ms |
| ▶ GET typepad.js            | 200 OK                | twitter.com          | 759 B   | 199.59.149.198:443 | 1.13s |
| ▶ GET boulderjug.json?ca... | 200 OK                | twitter.com          | 1.3 KB  | 199.59.149.198:443 | 1.13s |

| Name<br>Path  | Method | Status<br>Text   | Type       | Size<br>Transfer   | Time<br>Latency | Timeline | 842ms | 1.26s | 1.68s | 2.11s | 2.53s | 2.95s | 3.37s |
|---|--------|------------------|------------|--------------------|-----------------|----------|-------|-------|-------|-------|-------|-------|-------|
| http://boulderjug.org/                                  | GET    | 200<br>OK        | text/html  | 47.80KB<br>12.06KB | 210ms<br>105ms  |          |       |       |       |       |       |       |       |
| styles.css  | GET    | 200<br>OK        | text/css   | 415B<br>540B       | 147ms<br>146ms  |          |       |       |       |       |       |       |       |
| print.css<br>static.typepad.com/.shared:v               | GET    | 200<br>OK        | text/css   | 3.59KB<br>3.84KB   | 652ms<br>647ms  |          |       |       |       |       |       |       |       |
| flyouts-min.js<br>static.typepad.com/.shared:v          | GET    | 200<br>OK        | applica... | 33.25KB<br>33.49KB | 391ms<br>210ms  |          |       |       |       |       |       |       |       |
| typepad.js<br>twitter.com/javascrip                     | GET    | 200<br>OK        | applica... | 1.69KB<br>1.06KB   | 184ms<br>184ms  |          |       |       |       |       |       |       |       |
| boulderjug.json<br>twitter.com/statuses/user_tin        | GET    | 302<br>Found     | text/html  | 0B<br>561B         | 180ms<br>180ms  |          |       |       |       |       |       |       |       |
| jobroll<br>www.indeed.com                               | GET    | 301<br>Moved Per | text/html  | 0B<br>697B         | 185ms<br>185ms  |          |       |       |       |       |       |       |       |
| quant.js<br>edge.quantserve.com                         | GET    | (from c...       | applica... | (from c...         | Pending         |          |       |       |       |       |       |       |       |
| blogside-toolbar-combined<br>/.shared/js/toolbar        | GET    | 200<br>OK        | applica... | 27.85KB<br>28.14KB | 339ms<br>142ms  |          |       |       |       |       |       |       |       |
| base-weblog.css<br>static.typepad.com/.shared:v         | GET    | 200<br>OK        | text/css   | 23.21KB<br>23.46KB | 300ms<br>107ms  |          |       |       |       |       |       |       |       |
| tipjar.css<br>static.typepad.com/.shared:v              | GET    | 200<br>OK        | text/css   | 3.58KB<br>3.83KB   | 109ms<br>108ms  |          |       |       |       |       |       |       |       |
| theme-journal_black.css<br>static.typepad.com/.shared:v | GET    | 200<br>OK        | text/css   | 350B<br>604B       | 108ms<br>107ms  |          |       |       |       |       |       |       |       |
| theme-journal.css<br>static.typepad.com/.shared:v       | GET    | 200<br>OK        | text/css   | 15.92KB<br>16.17KB | 233ms<br>78ms   |          |       |       |       |       |       |       |       |
| boulderjug.json<br>twitter.com/statuses/user_tin        | GET    | 200<br>OK        | applica... | 9.65KB<br>2.54KB   | 352ms<br>348ms  |          |       |       |       |       |       |       |       |
| jobroll<br>jobroll.indeed.com                           | GET    | 200<br>OK        | text/html  | 3.52KB<br>4.03KB   | 157ms<br>156ms  |          |       |       |       |       |       |       |       |
| ga.js<br>www.google-analytics.com                       | GET    | (from c...       | text/ja... | (from c...         | Pending         |          |       |       |       |       |       |       |       |



-  **http://boulderjug.org/**
-  **styles.css**
-  **print.css**  
static.typepad.com/.shared:v
-  **flyouts-min.js**  
static.typepad.com/.shared:v
-  **typepad.js**  
twitter.com/javascrip
-  **boulderjug.json**  
twitter.com/statuses/user\_tir
-  **jobroll**  
www.indeed.com
-  **quant.js**  
edge.quantserve.com
-  **blogside-toolbar-combinec**  
.shared/js/toolbar
-  **base-weblog.css**  
static.typepad.com/.shared:v
-  **tipjar.css**  
static.typepad.com/.shared:v
-  **theme-journal\_black.css**  
static.typepad.com/.shared:v
-  **theme-journal.css**  
static.typepad.com/.shared:v
-  **boulderjug.json**  
twitter.com/statuses/user\_tir
-  **jobroll**  
jobroll.indeed.com
-  **ga.js**  
www.google-analytics.com

✕
Headers
Content

Request URL: http://boulderjug.org/  
 Request Method: GET  
 Status Code: ● 200 OK

▼ **Request Headers** view source

Accept: text/html,application/xhtml+xml,application/xml;q=0.9,\*/\*;q=0.8  
 User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10\_7\_2) AppleWebKit/534.52.7 (KHTML, like Gecko) Version/5.1.2 Safari/534.52.7

▼ **Response Headers** view source

Age: 97  
 Content-Encoding: gzip  
 Content-Length: 12035  
 Content-Type: text/html; charset=utf-8  
 Date: Tue, 10 Jan 2012 05:52:35 GMT  
 Keep-Alive: timeout=300, max=100  
 Server: Apache  
 Vary: cookie,Accept-Encoding  
 Via: 1.1 varnish  
 X-PhApp: oak-tp-web033  
 X-Varnish: 3885507801 3885397351  
 X-Webserver: oak-tp-web033



| Name Path  | Method | Status Text      | Type         | Initiator                     | Size Content       | Time Latency   | Timeline | 541ms | 811ms | 1.08s | 1.35s | 1.62s | 1.89s |
|--|--------|------------------|--------------|-------------------------------|--------------------|----------------|----------|-------|-------|-------|-------|-------|-------|
| http://boulderjug.org/                                     | GET    | 200 OK           | text/html    | Other                         | 12.08KB<br>47.80KB | 217ms<br>109ms |          |       |       |       |       |       |       |
| styles.css   | GET    | 304 Not Modified | text/css     | http://boulderjug.c<br>Parser | 183B<br>415B       | 109ms<br>108ms |          |       |       |       |       |       |       |
| flyouts-min.js<br>static.typepad.com/.shared:v201          | GET    | 304 Not Modified | applicati... | http://boulderjug.c<br>Parser | 216B<br>33.25KB    | 57ms<br>57ms   |          |       |       |       |       |       |       |
| typepad.js<br>twitter.com/javascrip                        | GET    | 304 Not Modified | applicati... | http://boulderjug.c<br>Parser | 170B<br>1.69KB     | 63ms<br>63ms   |          |       |       |       |       |       |       |
| boulderjug.json<br>twitter.com/statuses/user_timelir       | GET    | 200 OK           | applicati... | http://boulderjug.c<br>Parser | 2.30KB<br>9.65KB   | 107ms<br>106ms |          |       |       |       |       |       |       |
| jobroll<br>www.indeed.com                                  | GET    | 301 Moved Peri   | text/html    | http://boulderjug.c<br>Parser | 670B<br>0B         | 51ms<br>51ms   |          |       |       |       |       |       |       |
| print.css<br>static.typepad.com/.shared:v201               | GET    | 304 Not Modified | text/css     | http://boulderjug.c<br>Parser | 238B<br>3.59KB     | 57ms<br>57ms   |          |       |       |       |       |       |       |
| jobroll<br>jobroll.indeed.com                              | GET    | 200 OK           | text/html    | http://www.indeed<br>Redirect | (from ca...)       | 1ms<br>1ms     |          |       |       |       |       |       |       |
| quant.js<br>edge.quantserve.com                            | GET    | 304 Not Modified | applicati... | http://boulderjug.c<br>Parser | 296B<br>5.17KB     | 74ms<br>74ms   |          |       |       |       |       |       |       |
| blogside-toolbar-combined-mi<br>/.shared/js/toolbar        | GET    | 304 Not Modified | applicati... | http://boulderjug.c<br>Parser | 263B<br>27.85KB    | 54ms<br>54ms   |          |       |       |       |       |       |       |
| base-weblog.css<br>static.typepad.com/.shared:v201         | GET    | 304 Not Modified | text/css     | http://boulderjug.c<br>Parser | 238B<br>23.21KB    | 62ms<br>60ms   |          |       |       |       |       |       |       |
| tipjar.css<br>static.typepad.com/.shared:v201              | GET    | 304 Not Modified | text/css     | http://boulderjug.c<br>Parser | 238B<br>3.58KB     | 63ms<br>63ms   |          |       |       |       |       |       |       |
| theme-journal_black.css<br>static.typepad.com/.shared:v201 | GET    | 304 Not Modified | text/css     | http://boulderjug.c<br>Parser | 238B<br>350B       | 123ms<br>123ms |          |       |       |       |       |       |       |
| theme-journal.css<br>static.typepad.com/.shared:v201       | GET    | 304 Not Modified | text/css     | http://boulderjug.c<br>Parser | 238B<br>15.92KB    | 74ms<br>56ms   |          |       |       |       |       |       |       |
| ga.js<br>www.google-analytics.com                          | GET    | 304 Not Modified | text/jav...  | http://boulderjug.c<br>Script | 134B<br>31.85KB    | 64ms<br>64ms   |          |       |       |       |       |       |       |
| 6a010536bb2e9f970b015392e:<br>www.boulderjug.org/.a        | GET    | 304 Not Modified | image/j...   | http://boulderjug.c<br>Parser | 207B<br>42.65KB    | 168ms<br>109ms |          |       |       |       |       |       |       |
| embed<br>www.google.com/calendar/hoste                     | GET    | 302 Moved Ten    | text/html    | Other                         | 970B<br>0B         | 163ms<br>112ms |          |       |       |       |       |       |       |
| join.gif<br>us.i1.yimg.com/us.yimg.com/i/y                 | GET    | 304 Not Modified | image/gif    | http://boulderjug.c<br>Parser | 235B<br>1.65KB     | 53ms<br>53ms   |          |       |       |       |       |       |       |



Search Network

Name  
Path

|  |   |
|--|---|
|  | http://boulderjug.org/                                  |
|  | styles.css  |
|  | flyouts-min.js<br>static.typepad.com/.shared:v          |
|  | typepad.js<br>twitter.com/javascripts                   |
|  | boulderjug.json<br>twitter.com/statuses/user_tir        |
|  | jobroll<br>www.indeed.com                               |
|  | print.css<br>static.typepad.com/.shared:v               |
|  | jobroll<br>jobroll.indeed.com                           |
|  | quant.js<br>edge.quantserve.com                         |
|  | blogside-toolbar-combinec<br>/.shared/js/toolbar        |
|  | base-weblog.css<br>static.typepad.com/.shared:v         |
|  | tipjar.css<br>static.typepad.com/.shared:v              |
|  | theme-journal_black.css<br>static.typepad.com/.shared:v |
|  | theme-journal.css<br>static.typepad.com/.shared:v       |
|  | ga.js<br>www.google-analytics.com                       |
|  | 6a010536bb2e9f970b0153<br>www.boulderjug.org/.a         |
|  | embed<br>www.google.com/calendar/h                      |
|  | join.gif<br>us.i1.yimg.com/us.yimg.com                  |

Headers Preview Response Cookies Timing

Request URL: http://boulderjug.org/  
Request Method: GET  
Status Code: 200 OK

▼ Request Headers [view source](#)

Accept: text/html,application/xhtml+xml,application/xml;q=0.9,\*/\*;q=0.8  
Accept-Charset: ISO-8859-1,utf-8;q=0.7,\*;q=0.3  
Accept-Encoding: gzip,deflate,sdch  
Accept-Language: en-US,en;q=0.8  
Cache-Control: max-age=0  
Connection: keep-alive  
Cookie: \_\_qca=P0-532058655-1317926490868; \_\_utma=1.1203207286.1317926491.1317926491.1326174854.2; \_\_utmb=1.1.10.1326174854; \_\_utmc=1; \_\_utmz=1.1317926491.1.1.utmcsr=(direct)|utmccn=(direct)|utmcmd=(none)  
Host: boulderjug.org  
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10\_7\_2) AppleWebKit/535.11 (KHTML, like Gecko) Chrome/17.0.963.26 Safari/535.11

▼ Response Headers [view source](#)

Age: 208  
Content-Encoding: gzip  
Content-Length: 12035  
Content-Type: text/html; charset=utf-8  
Date: Tue, 10 Jan 2012 05:54:27 GMT  
Keep-Alive: timeout=300, max=100  
Server: Apache  
Vary: cookie,Accept-Encoding  
Via: 1.1 varnish  
X-PhApp: oak-tp-web033  
X-Varnish: 3885627987 3885397351  
X-Webserver: oak-tp-web033

curl

```
1. freddyjean@Home-Base: ~ (zsh)
Date: Mon, 09 Jan 2012 05:20:28 GMT
Expires: Mon, 09 Jan 2012 05:20:28 GMT
Server: Apache/2.2.14 (Ubuntu)
Status: 200
Vary: User-Agent,Accept-Encoding
X-Powered-By: Phusion Passenger (mod_rails/mod_rack) 2.2.15
X-Runtime: 0.002604
X-UA-Compatible: IE=Edge,chrome=1
Content-Length: 0
Connection: keep-alive

Home-Base 福 ~
10010 ○: curl -v -I -X options https://iaudit-tst.snugghome.com/api/iaudit/v1/audits
* About to connect() to iaudit-tst.snugghome.com port 443 (#0)
* Trying 50.18.152.252... connected
* Connected to iaudit-tst.snugghome.com (50.18.152.252) port 443 (#0)
* SSLv3, TLS handshake, Client hello (1):
* SSLv3, TLS handshake, Server hello (2):
* SSLv3, TLS handshake, CERT (11):
* SSLv3, TLS handshake, Server finished (14):
* SSLv3, TLS handshake, Client key exchange (16):
* SSLv3, TLS change cipher, Client hello (1):
* SSLv3, TLS handshake, Finished (20):
* SSLv3, TLS change cipher, Client hello (1):
* SSLv3, TLS handshake, Finished (20):
* SSL connection using AES256-SHA
* Server certificate:
*   subject: OU=Domain Control Validated; OU=EssentialSSL Wildcard; CN=*.snugghome.com
*   start date: 2011-11-28 00:00:00 GMT
*   expire date: 2012-11-27 23:59:59 GMT
*   subjectAltName: iaudit-tst.snugghome.com matched
*   issuer: C=GB; ST=Greater Manchester; L=Salford; O=COMODO CA Limited; CN=EssentialSSL CA
*   SSL certificate verify ok.
> options /api/iaudit/v1/audits HTTP/1.1
> User-Agent: curl/7.21.4 (universal-apple-darwin11.0) libcurl/7.21.4 OpenSSL/0.9.8r zlib/1.2.5
> Host: iaudit-tst.snugghome.com
> Accept: /*/*
>
< HTTP/1.1 200 OK
HTTP/1.1 200 OK
< Access-Control-Allow-Headers: X-Requested-With,X-Prototype-Version,X-CSRF-Token,Content-Type,Authorization
Access-Control-Allow-Headers: X-Requested-With,X-Prototype-Version,X-CSRF-Token,Content-Type,Authorization
< Access-Control-Allow-Methods: POST,GET,OPTIONS,PUT
Access-Control-Allow-Methods: POST,GET,OPTIONS,PUT
< Access-Control-Allow-Origin: http://localhost:3000/
Access-Control-Allow-Origin: http://localhost:3000/
< Cache-Control: public
Cache-Control: public
< Content-Type: application/json;charset=utf-8
Content-Type: application/json;charset=utf-8
< Date: Mon, 09 Jan 2012 05:26:55 GMT
Date: Mon, 09 Jan 2012 05:26:55 GMT
< Expires: Mon, 09 Jan 2012 05:26:55 GMT
Expires: Mon, 09 Jan 2012 05:26:55 GMT
< Server: Apache/2.2.14 (Ubuntu)
```

Charles



Structure Sequence

| RC  | Mthd    | Host                            | Path         | Durati... | Size     | Status            | Info |
|-----|---------|---------------------------------|--------------|-----------|----------|-------------------|------|
| ↑   | CONNECT | docs.google.com:443             |              |           | 14.34... | Sending reque...  |      |
| ↓   | CONNECT | client-lb.dropbox.com:443       |              | 158...    | 16.88... | Complete          |      |
| ↓   | CONNECT | 0-jf-w.channel.facebook.com:443 |              |           | 1.68 KB  | Receiving resp... |      |
| ↓   | CONNECT | skitch.com:443                  |              |           | 1.60 KB  | Receiving resp... |      |
| ... | GET     | crl.securetrust.com             | /STCA.crl    | 140...    | 2.46 KB  | Complete          |      |
| ... | GET     | crl.entrust.net                 | /server1.crl | 129...    | 2.80 KB  | Complete          |      |
| ↑   | CONNECT | 1.docs.google.com:443           |              |           | 252 b... | Sending reque...  |      |

Filter:

Settings

Overview Request Response Summary Chart Notes

| Name               | Value   |
|--------------------|---|
| URL                | https://1.docs.google.com:443   |
| Status             | Sending request header...   |
| Notes              | SSL Proxying not enabled for this host: enable in Proxy Settings, SSL locations |
| Response Code      | -   |
| Protocol           | HTTP/1.1  |
| Method             | CONNECT   |
| Content-Type       | -   |
| Client Address     | /127.0.0.1  |
| Remote Address     | -   |
| ▼ Timing           |   |
| Request Start Time | 1/8/12 11:06:28 PM  |
| Request End Time   | -   |

# Fiddler

Fiddler - HTTP Debugging Proxy

File Edit Rules Tools View Help

Replay Resume Stream Decode Keep: All sessions Any Process Find Save Browse Clear Cache TextWizard Tearoff MSDN Search... Online

Web Sessions

| #  | Result | Protocol | Host                   | URL                    |
|----|--------|----------|------------------------|------------------------|
| 22 | 200    | HTTP     | www.nofluffjuststu...  | /images/2011/uber/Ut   |
| 23 | 200    | HTTP     | today.java.net         | /images/javanet_butb   |
| 24 | 301    | HTTP     | www.indeed.com         | /jobroll?q=Java&l=Bo   |
| 25 | 200    | HTTP     | twitter.com            | /statuses/user_timelin |
| 26 | 200    | HTTP     | edge.quantserve.com    | /quant.js              |
| 27 | 200    | HTTP     | boulderjug.org         | /.shared/js/toolbar/bl |
| 28 | 302    | HTTP     | www.google.com         | /calendar/hosted/fred  |
| 29 | 200    | HTTP     | twitter.com            | /javascripts/typepad.  |
| 30 | 200    | HTTP     | jobroll.indeed.com     | /jobroll?q=Java&l=Bo   |
| 31 | 200    | HTTP     | cdn.uservoice.com      | /javascripts/widgets/t |
| 32 | 200    | HTTP     | static.typepad.com     | /.shared:v20120109.0   |
| 33 | 200    | HTTP     | www.typepad.com        | /t/stats?blog_id=1801  |
| 34 | 200    | HTTP     | Tunnel to              | www.google.com:443     |
| 35 | 204    | HTTP     | pixel.quantserve.com   | /pixel;r=1508634833;   |
| 36 | 204    | HTTP     | b.scorecardresearch... | /b?c1=2&c2=6035669     |
| 37 | 200    | HTTP     | cdn.uservoice.com      | /images/widgets/en/fe  |
| 38 | 200    | HTTP     | ads.sixapart.com       | /custom?id=TPTracker   |
| 39 | 200    | HTTP     | crl.thawte.com         | /ThawteSGCCA.crl       |
| 40 | 200    | HTTP     | yui.yahooapis.com      | /2.5.0/build/animation |
| 41 | 200    | HTTP     | www.typepad.com        | /services/toolbar?blog |
| 42 | 200    | HTTP     | static.typepad.com     | /.shared:v20120109.0   |
| 43 | 200    | HTTP     | Tunnel to              | www.google.com:443     |
| 44 | 200    | HTTP     | static.typepad.com     | /.shared:v20120109.0   |
| 45 | 200    | HTTP     | static.typepad.com     | /.shared:v20120109.0   |
| 46 | 200    | HTTP     | static.typepad.com     | /.shared:v20120109.0   |
| 47 | 200    | HTTP     | static.typepad.com     | /.shared:v20120109.0   |
| 48 | 200    | HTTP     | static.typepad.com     | /.shared:v20120109.0   |
| 49 | 200    | HTTP     | static.typepad.com     | /.shared:v20120109.0   |
| 50 | 200    | HTTP     | Tunnel to              | calendar.google.com:   |
| 51 | 200    | HTTP     | Tunnel to              | calendar.google.com:   |
| 52 | 200    | HTTP     | Tunnel to              | www.google.com:443     |
| 53 | 200    | HTTP     | static.typepad.com     | /.shared:v20120109.0   |
| 54 | 302    | HTTP     | boulderjug.org         | /favicon.ico           |
| 55 | 200    | HTTP     | static.typepad.com     | /.shared:v20120109.0   |
| 56 | 200    | HTTP     | static.typepad.com     | /.shared:v20120109.0   |
| 57 | 200    | HTTP     | static.typepad.com     | /.shared:v20120109.0   |
| 58 | 200    | HTTP     | 6a.typepad.com         | /favicon.ico           |

Statistics Inspectors AutoResponder Composer Filters Log Timeline

Request Headers [Raw] [Header Definitions]

GET / HTTP/1.1

Client

- Accept: image/gif, image/jpeg, image/pjpeg, image/pjpeg, application/x-shockwave-flash, application/x-ms-application, application/x-ms-xbap, application/...
- Accept-Encoding: gzip, deflate
- Accept-Language: en-us
- User-Agent: Mozilla/4.0 (compatible; MSIE 8.0; Windows NT 5.1; Trident/4.0; .NET CLR 2.0.50727; .NET CLR 3.0.4506.2152; .NET CLR 3.5.30729; InfoPa...

Transport

- Connection: Keep-Alive
- Host: boulderjug.org

Get SyntaxView Transformer Headers TextView ImageView HexView WebView Auth Caching Cookies Raw JSON

Response Headers [Raw] [Header Definitions]

HTTP/1.1 200 OK

Cache

- Age: 0
- Date: Tue, 10 Jan 2012 06:02:56 GMT
- Vary: cookie,Accept-Encoding

Entity

- Content-Length: 48944
- Content-Type: text/html; charset=utf-8

Miscellaneous

- Server: Apache
- X-PhApp: oak-tp-web005
- X-Varnish: 3886200888
- X-Webserver: oak-tp-web005

Transport

- Keep-Alive: timeout=300, max=100
- Via: 1.1 varnish

ALT+Q > type HELP...

Capturing All Processes 1 / 58 http://boulderjug.org/

# Network Analysis Tools

- Wireshark
- Eavesdrop (Mac OS X)
- tcpdump
- snoop (Solaris)

Untitled

Clear List  Graphs Settings... Start Capture

| ID | Source    | Port  | Flags    | #  | Destination   | Port | Flags    | #  |
|----|-----------|-------|----------|----|---------------|------|----------|----|
| 6  | 10.0.1.13 | 50072 | F---A--- | 15 | 204.9.177.195 | 80   | ---A---  | 17 |
| 7  | 10.0.1.13 | 50073 | --R----- | 4  | 204.9.177.195 | 80   | F---A--- | 2  |
| 25 | 10.0.1.13 | 50089 | F---A--- | 6  | 204.9.177.195 | 80   | ---A---  | 4  |

Unified  
Divided  
Data

3 conversations 48 packets

Conversation

Source: 10.0.1.13 Destination: 204.9.177.195

50072 80

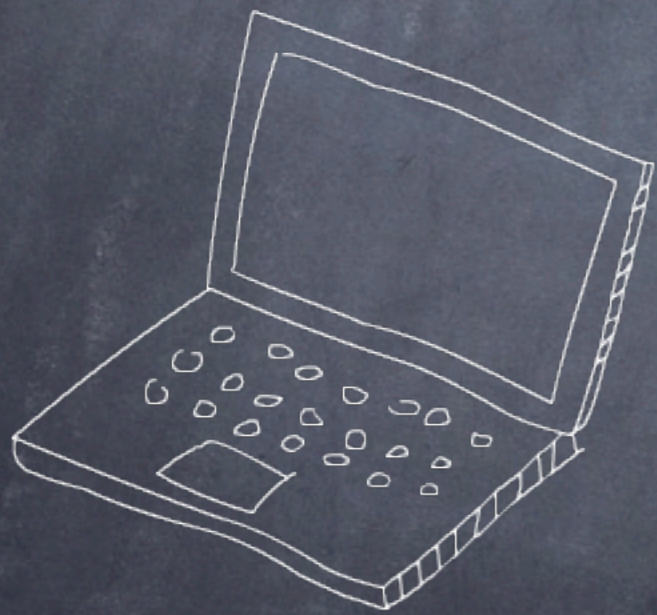
Payload Packets Graphs

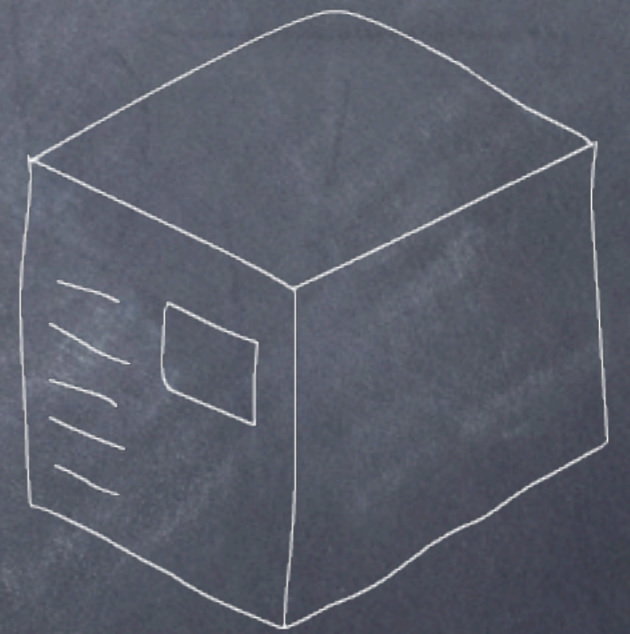
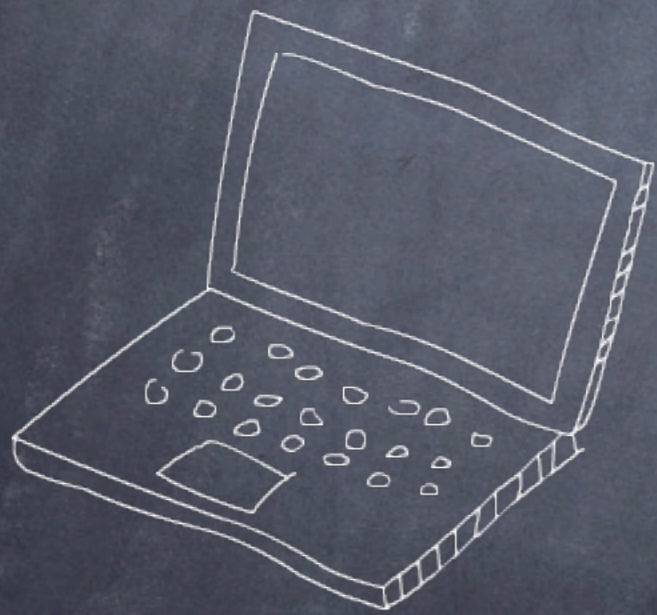
Raw Data Images Conversation

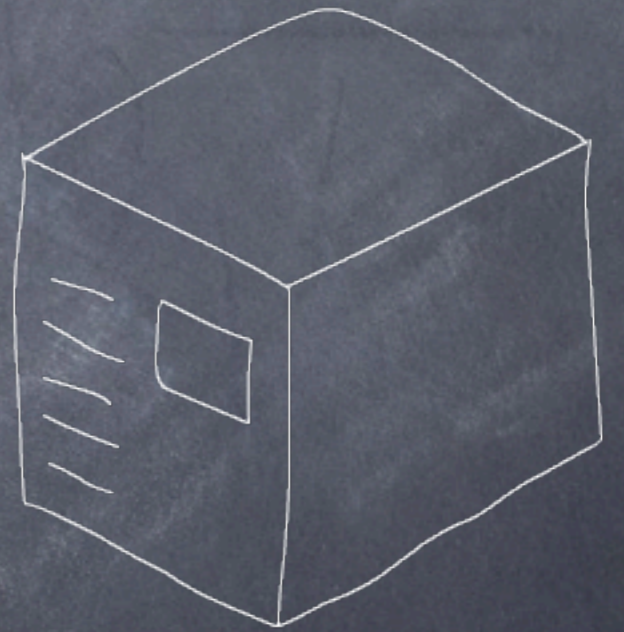
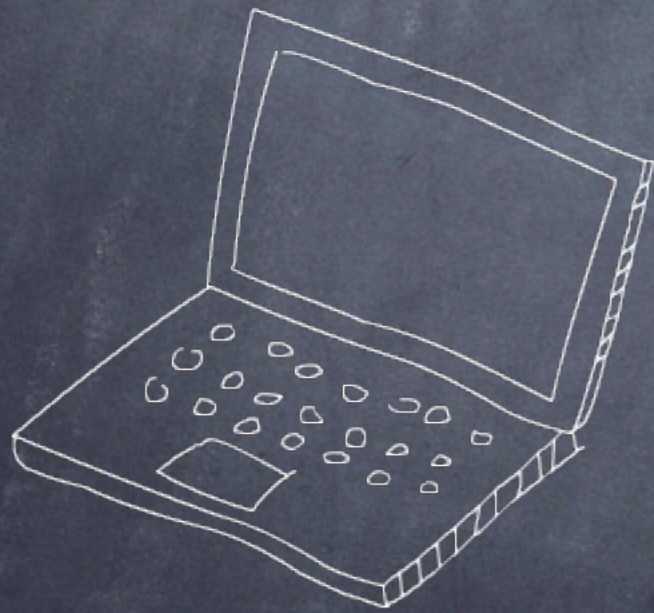
| # | Time  | Source        | Bytes  | Packets |
|---|-------|---------------|--------|---------|
| 1 | 0.55  | 10.0.1.13     | 657    | 1       |
| 2 | 0.27  | 204.9.177.195 | 64,487 | 9       |
| 3 | 0.12  | 10.0.1.13     | 659    | 1       |
| 4 | 4.36  | 204.9.177.195 | 546    | 1       |
| 5 | 0.07  | 10.0.1.13     | 668    | 1       |
| 6 | 10.05 | 204.9.177.195 | 308    | 1       |

GET / HTTP/1.1  
 Host: boulderjug.org  
 User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.7; rv:8.0.1) Gecko/20100101 Firefox/8.0.1  
 Accept: text/html,application/xhtml+xml,application/xml;q=0.9,\*/\*;q=0.8  
 Accept-Language: en-us,en;q=0.5  
 Accept-Encoding: gzip, deflate  
 Accept-Charset: ISO-8859-1,utf-8;q=0.7,\*;q=0.7  
 Connection: keep-alive  
 Cookie: \_\_utma=1.709566692.1315366607.1322835520.1326174660.8; \_\_utmz=1.1322835520.7.7.utmcsr=typepad.com|utmccn=(referral)|utmcmd=referral|utmctt=/site/blogs/6a010536bb2e9f970b010536bb2ea2970b/post/6a010536bb2e9f970b0162fd355a5a970d/edit; \_\_gca=P0-138304784-1315366608389; \_\_utmb=1.1.10.1326174660; \_\_utmc=1

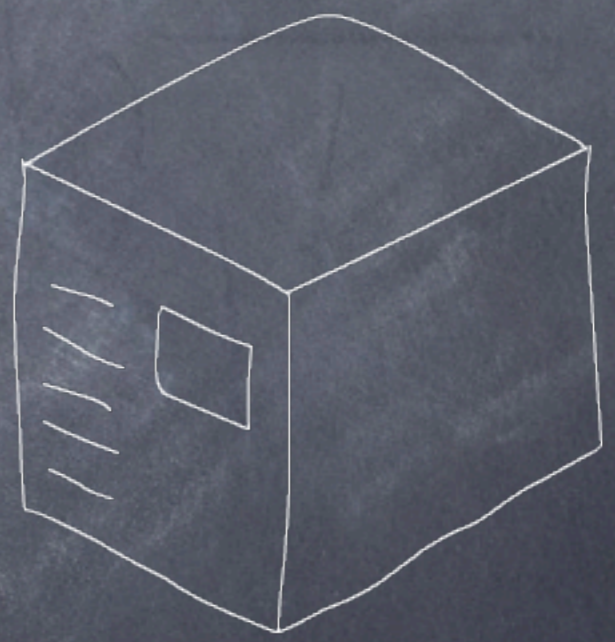
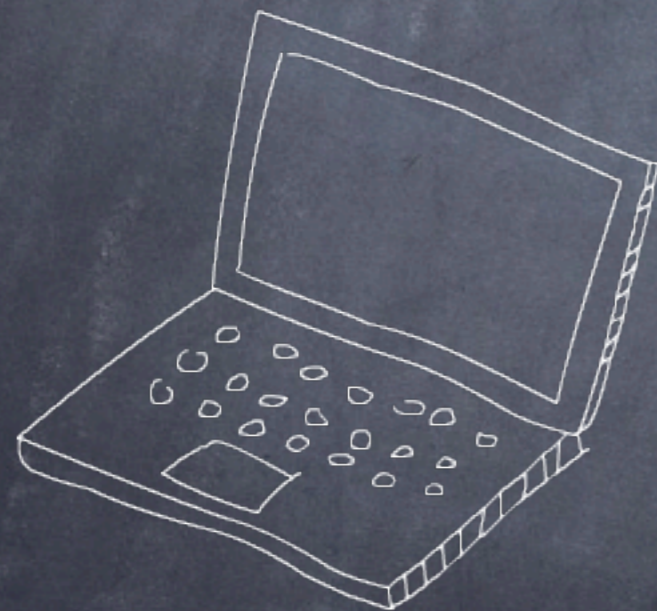








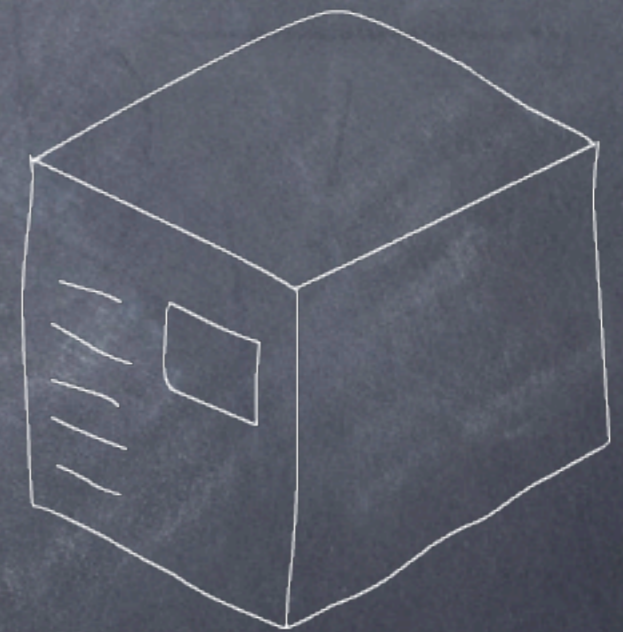
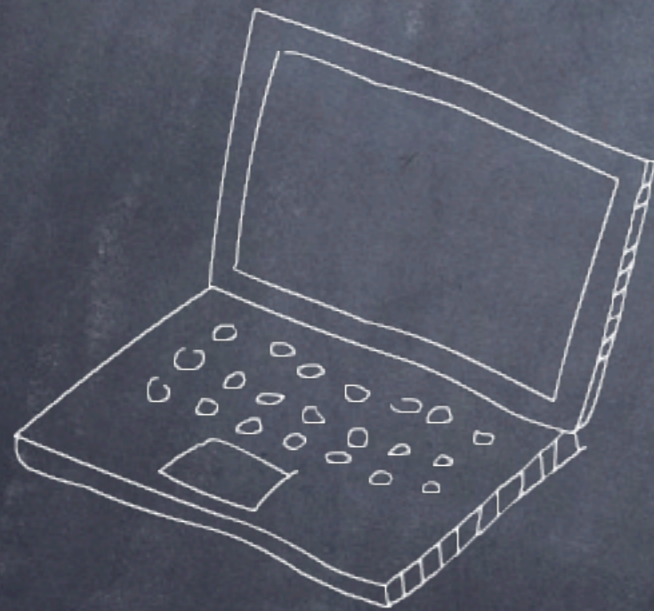
```
GET /index.html HTTP/1.1
Host: boulderjug.org
User-Agent: ...
```



GET /index.html HTTP/1.1  
Host: boulderjug.org  
User-Agent: ...

The diagram shows a laptop on the left and a server on the right. A cloud in the center represents the network. A speech bubble from the laptop contains the request text. Another speech bubble from the server contains the response text.

HTTP/1.1 200 OK  
Content-Encoding: gzip  
Expires: Thu, 05 Jan 2012 04:39:29 GMT  
Content-Type: text/html; charset=utf-8  
Content-Length: 11923  
Date: Thu, 05 Jan 2012 04:39:04 GMT  
X-Varnish: 3293735202  
  
<html>...</html>



Connection: close

# Picture Credits

- 298158373\_a47d6db5cf\_b.jpg (flickr: sbisson)
- HTTP Status Cats:
  - <http://httpcats.herokuapp.com/>
  - Images from GirlieMac