



MUC Mage UNCONFERENCE

MAGENTO PEOPLE
A LOT OF TIME
YOUR TOPICS
YOUR TALKS

#mageuc15
mageunconference.org

BERLIN 2015

HTTP

Hypertext Transfer Protocol

The Hypertext Transfer Protocol (HTTP) is an application-level protocol for distributed, collaborative, hypermedia information systems.

Hypertext Transfer Protocol -- HTTP/1.1 IETF. RFC 2616

Why this talk?

- Know your tools

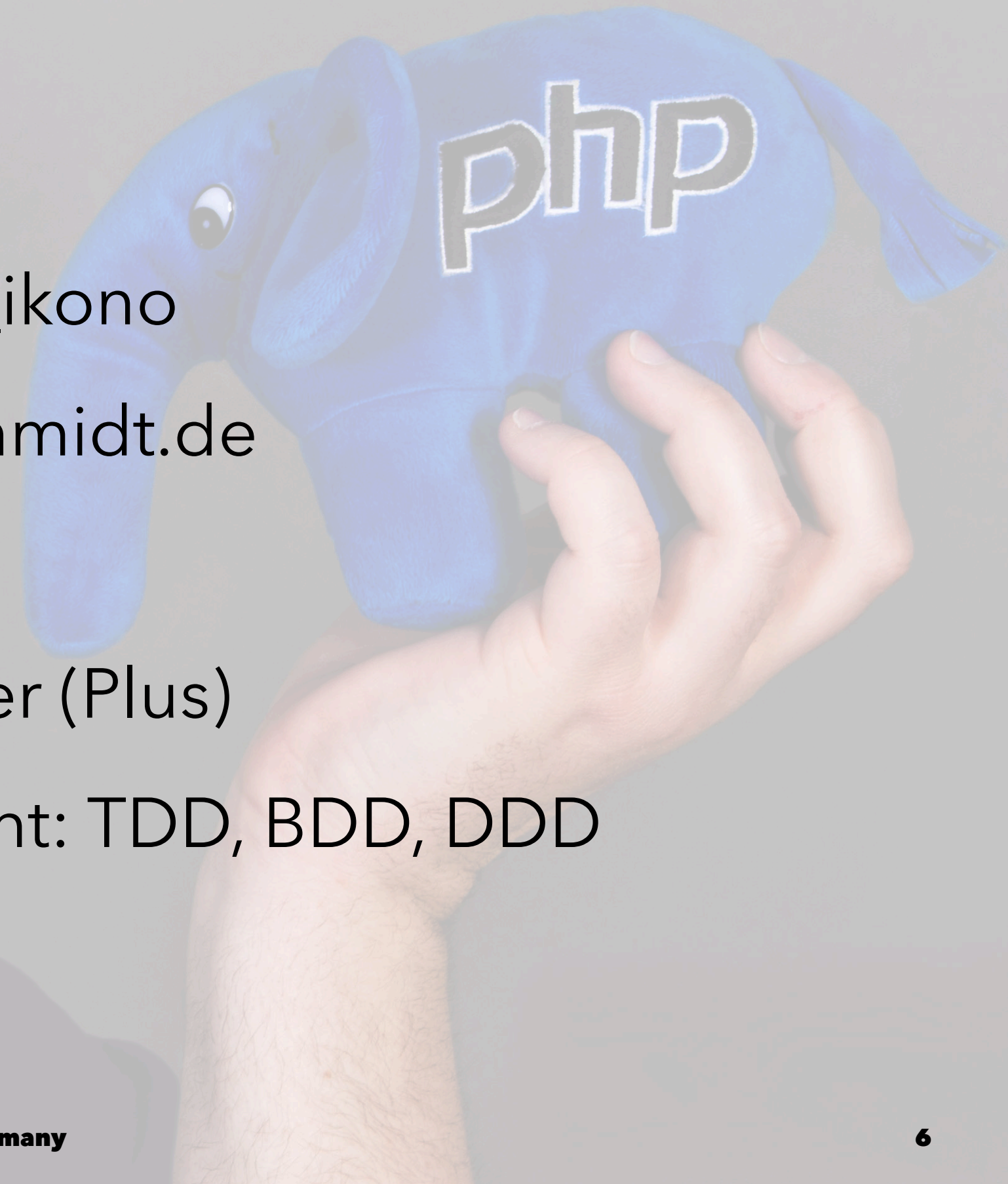
Why this talk?

- Caching
- SEO

About me

- Fabian Blechschmidt @Fabian_ikono
- blechschmidt@fabian-blechschmidt.de
- Magento since 2011
 - Certified Magento Developer (Plus)

playing alot around, at the moment: TDD, BDD, DDD



Outline

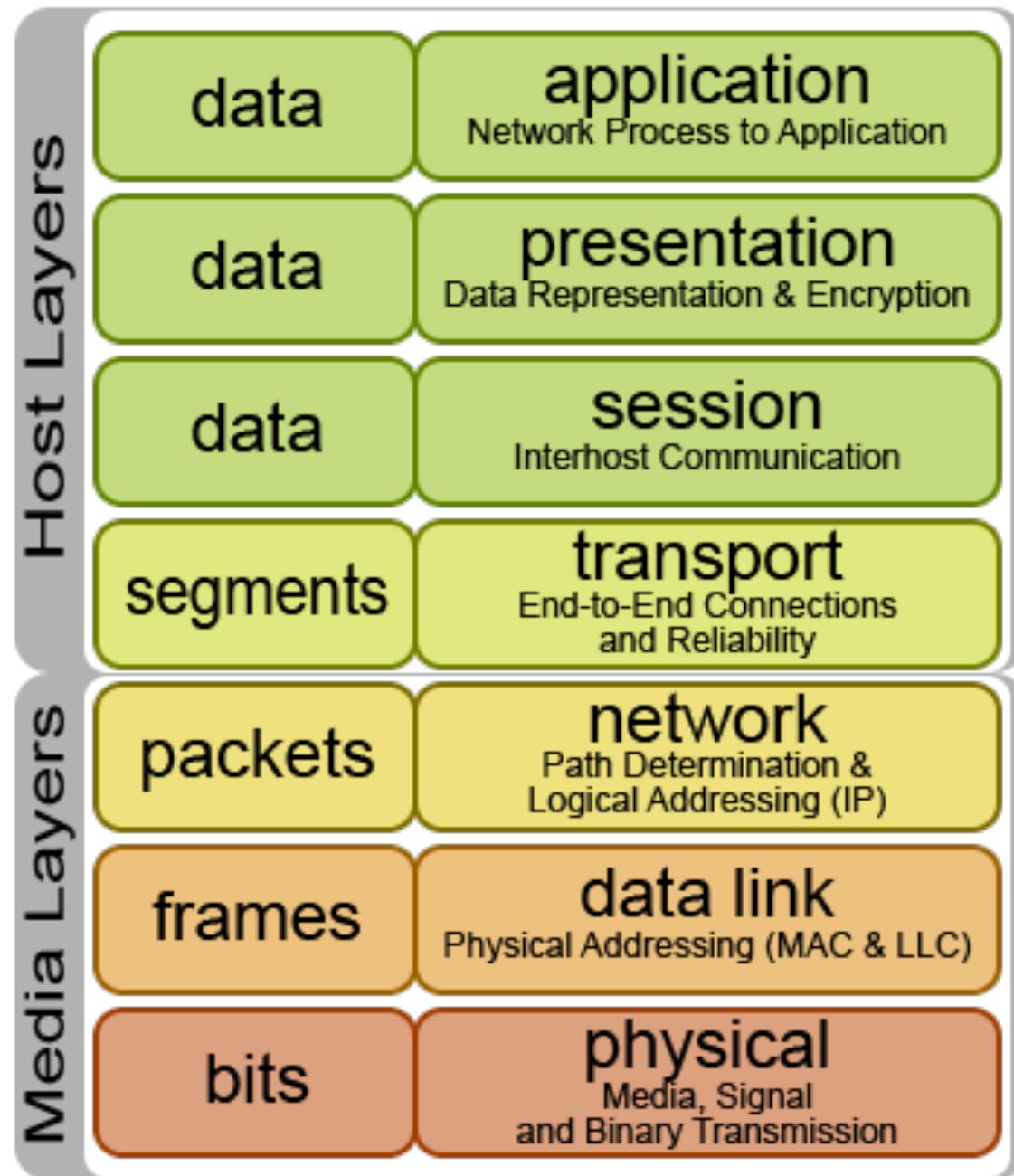
- History
- Request and Response
- Methods
- Status codes
- Caching
- (Future)

History

- First idea:
Vannevar Bush's vision (1930's) of the microfilm-based information retrieval and management **memex**
As We May Think (1945)
- Ted Nelson in 1965 in the Xanadu Project
- First version: 1991 HTTP 0.9

OSI Model

data unit layers



OSI

Application Protocol - Layer 7

- HTTP
- TCP
- IP
- Ethernet

Basics

HTTP is

- stateless
- plaintext (readable)
- request/response pattern

HTTP

request & response

HTTP Request

```
GET /my-cool-path/filename HTTP/1.1
Host: www.example.com
User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:12.0) Gecko/20100101 Firefox/21.0
Referer: http://en.wikipedia.org/wiki/Main_Page
Range: bytes=500-999

Accept-Encoding: gzip, deflate, sdch
Accept-Language: de-DE, de; q=0.8, en-US; q=0.6, en; q=0.4
Cache-Control: max-age=0
Cookie: $Version=1; Skin=new;
Connection: keep-alive
If-Modified-Since: Tue, 25 Nov 2014 03:08:54 GMT
Accept: text/html, application/xhtml+xml, application/xml; q=0.9, image/webp, */*; q=0.8
```

HTTP Response

HTTP/1.1 200 OK

Date: Mon, 23 May 2005 22:38:34 GMT

Server: Apache/1.3.3.7 (Unix) (Red-Hat/Linux)

Last-Modified: Wed, 08 Jan 2003 23:11:55 GMT

ETag: "3f80f-1b6-3e1cb03b"

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

Content-Length: 131

Accept-Ranges: bytes

Connection: close

<html>

<head>

 <title>An Example Page</title>

</head>

<body>

 Hello World, this is a very simple HTML document.

</body>

</html>

OPERATION	SQL	HTTP
Create	INSERT	PUT/POST
Read	SELECT	GET
Update	UPDATE	PUT/PATCH
Delete	DELETE	DELETE

Methods

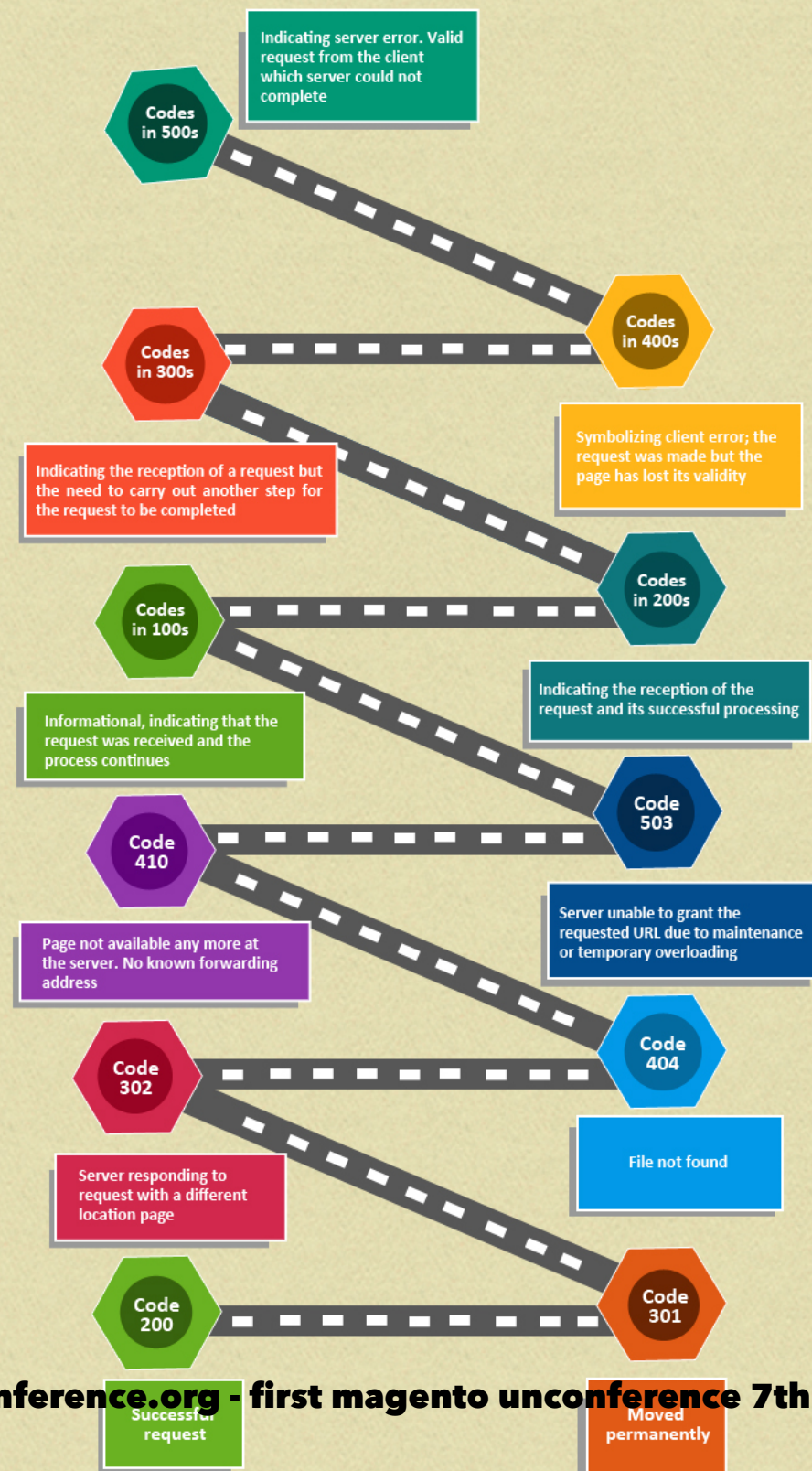
Methods

- GET
- POST
- PUT
- DELETE

more Methods

- HEAD
- TRACE
- OPTIONS
- PATCH

Understanding HTTP Status Codes



Status codes



100

Continue

1xx: Informational Messages

100: Continue

101: Switching Protocols

2xx: Successful

Everything is ok!

200 OK

202 Accepted

204 No Content

205 Reset Content

206 Partial Content

The Perfect Guy



(Always Delivers.)

3xx: Redirection

Try it somewhere else!

300 Multiple Choices

301 Moved Permanently

302 Found

303 See Other

304 Not Modified

305 Use Proxy

307 Temporary Redirect



304

Not Modified

SEO

301 - Permanent redirect

302 - Temporary redirect

302 Found

Learned through reading RFCs:

- should follow Location header WITHOUT changing method!

All browsers do this wrong.



302
Found



Client Error 4xx

You made something wrong.

- 400 Bad Request
- 401 Unauthorized
- 402 Payment Required
- 403 Forbidden
- 404 Not Found
- 405 Method Not Allowed
- 406 Not Acceptable
- 407 Proxy Authentication Required
- 408 Request Timeout
- 409 Conflict
- 410 Gone

SEO

- 404 should include options where to go now
- should be 301 whenever possible

Server Error 5xx

We made something wrong.

500 Internal Server Error

501 Not Implemented

502 Bad Gateway

503 Service Unavailable

504 Gateway Timeout

505 HTTP Version Not Supported



Caching¹

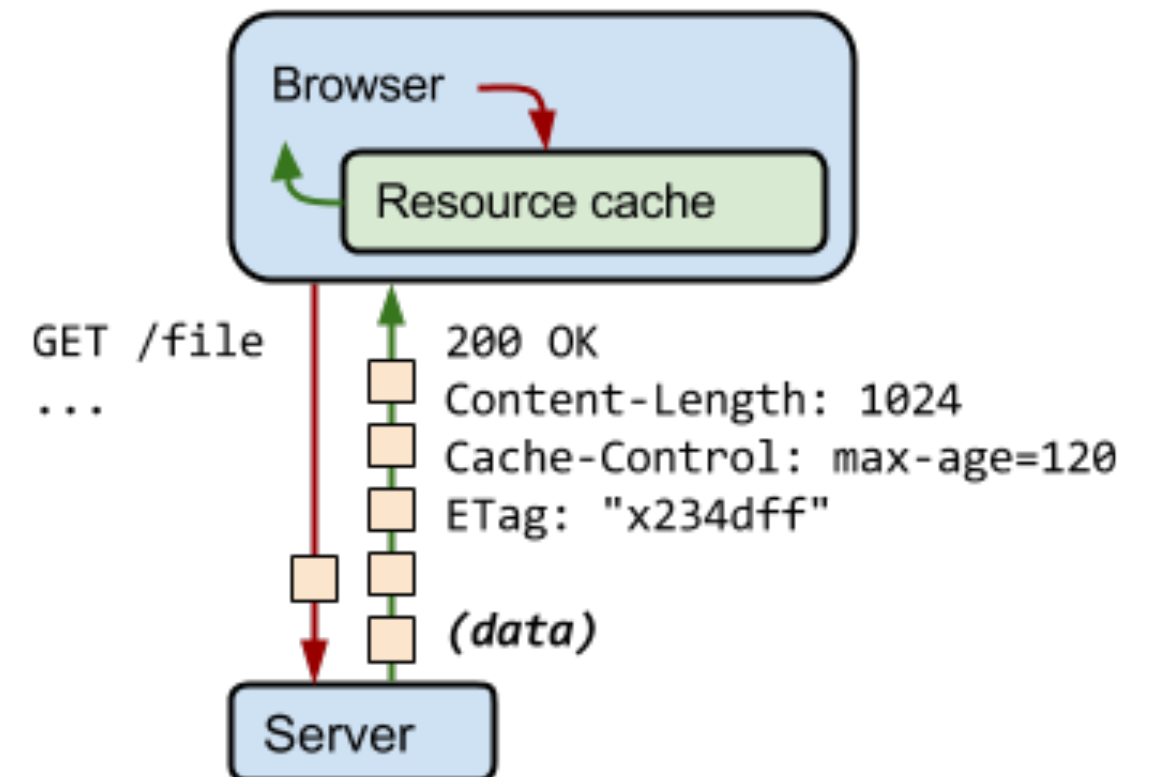
- etag
- Cache-Control header

¹ <https://tools.ietf.org/html/rfc7234>



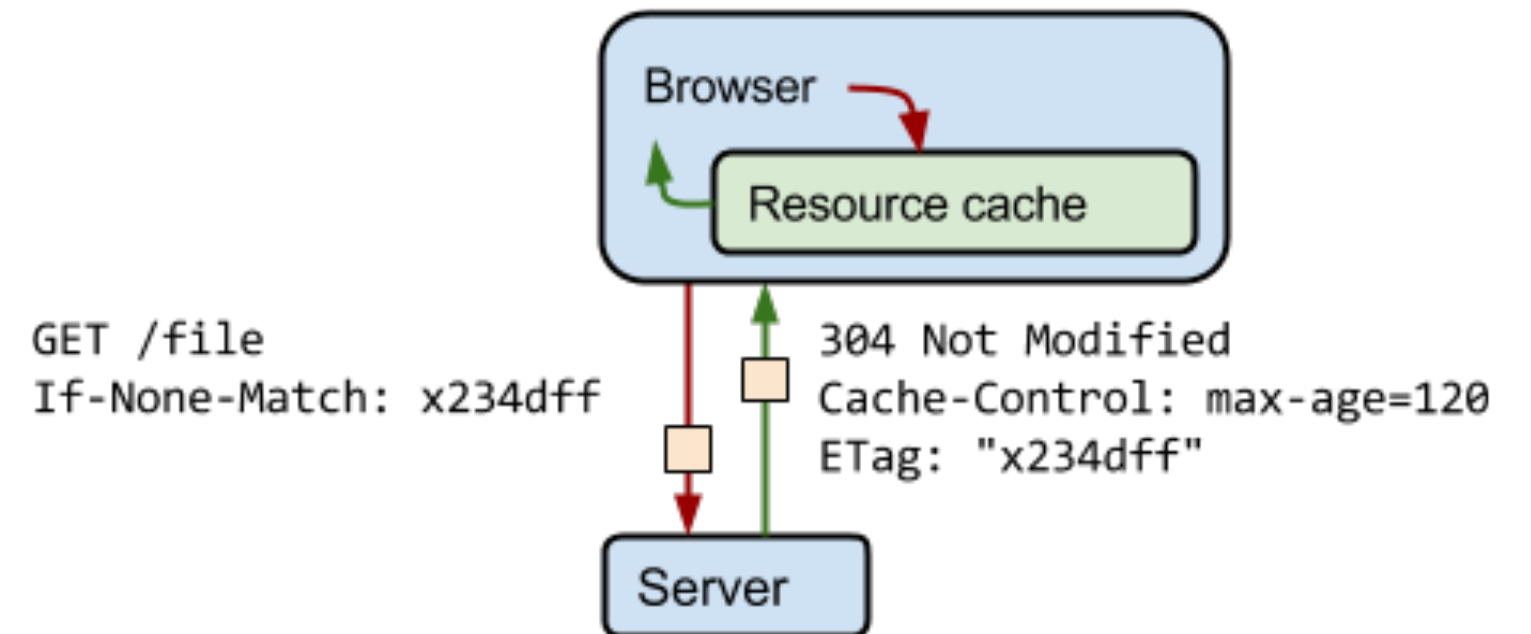
Etags

First request without cached version



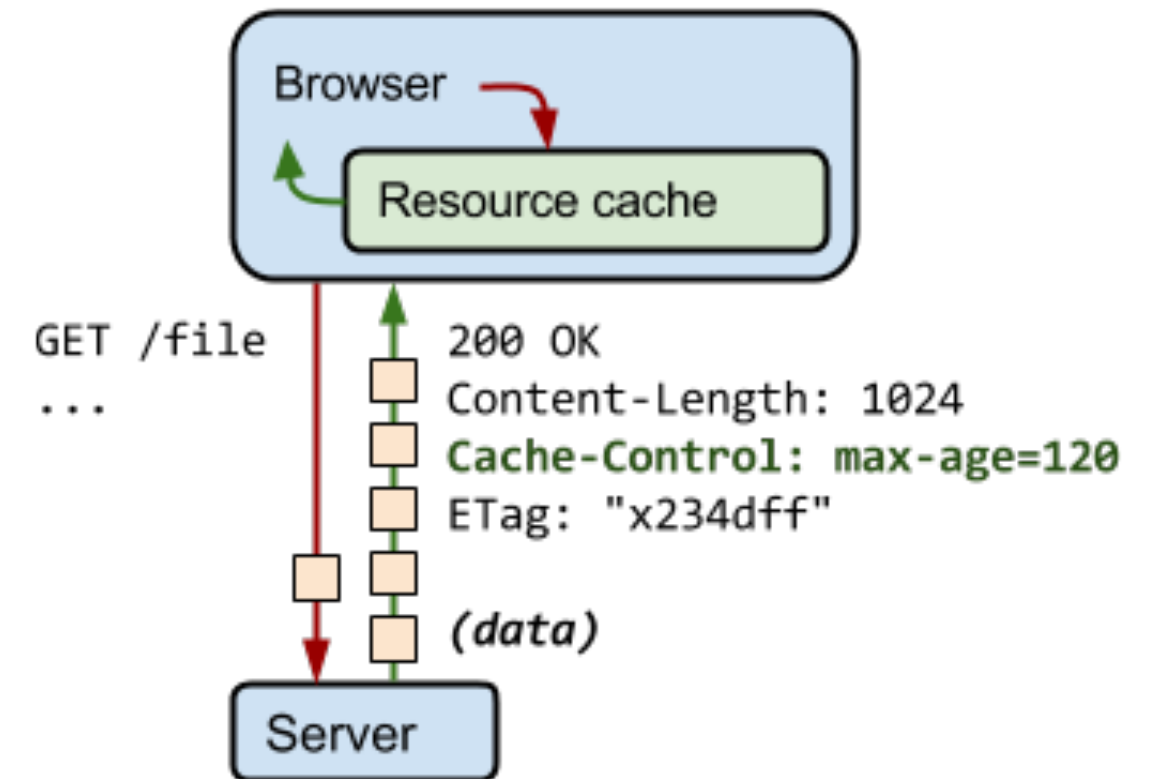
Etags

Validating cached responses with ETags

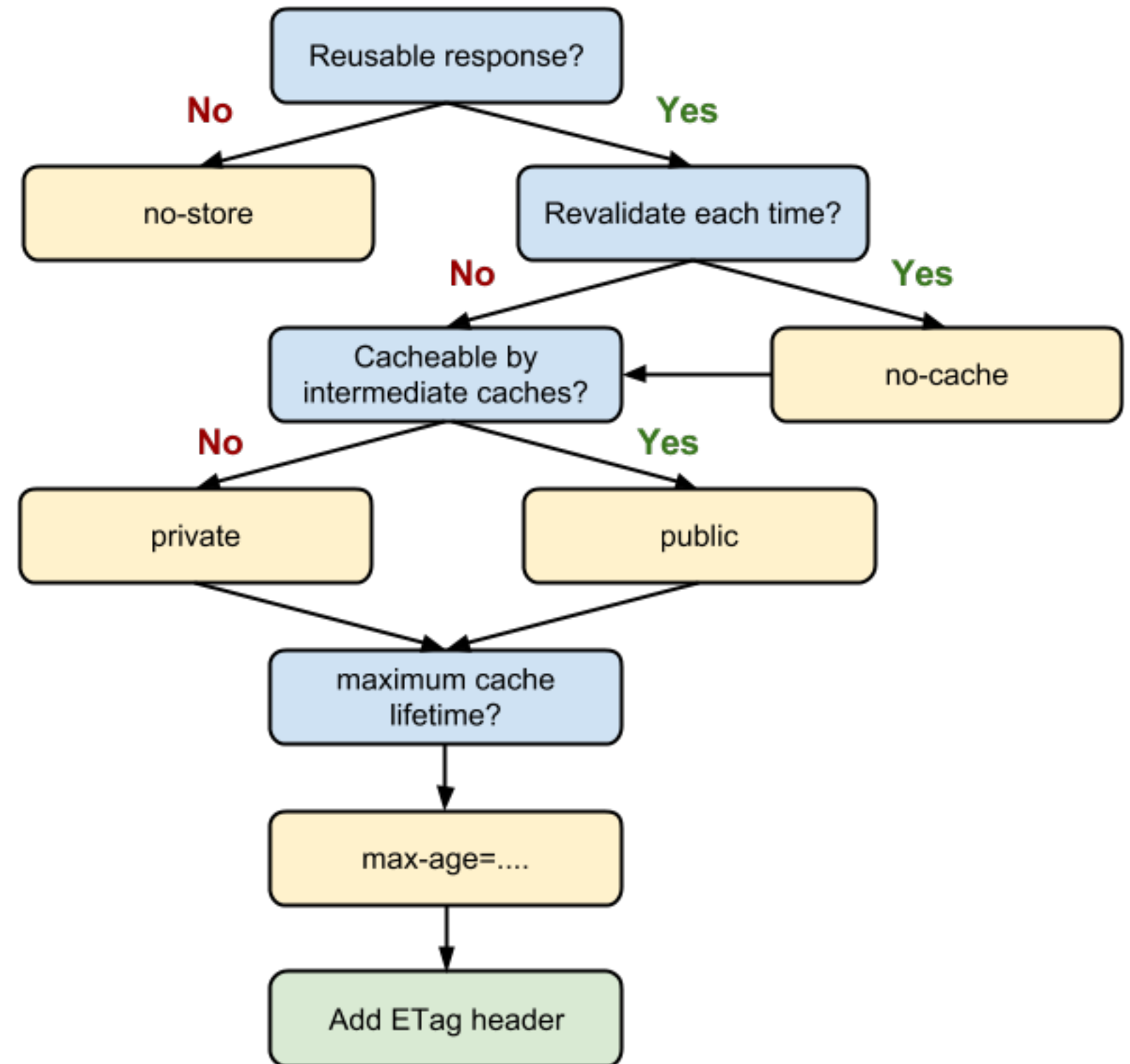


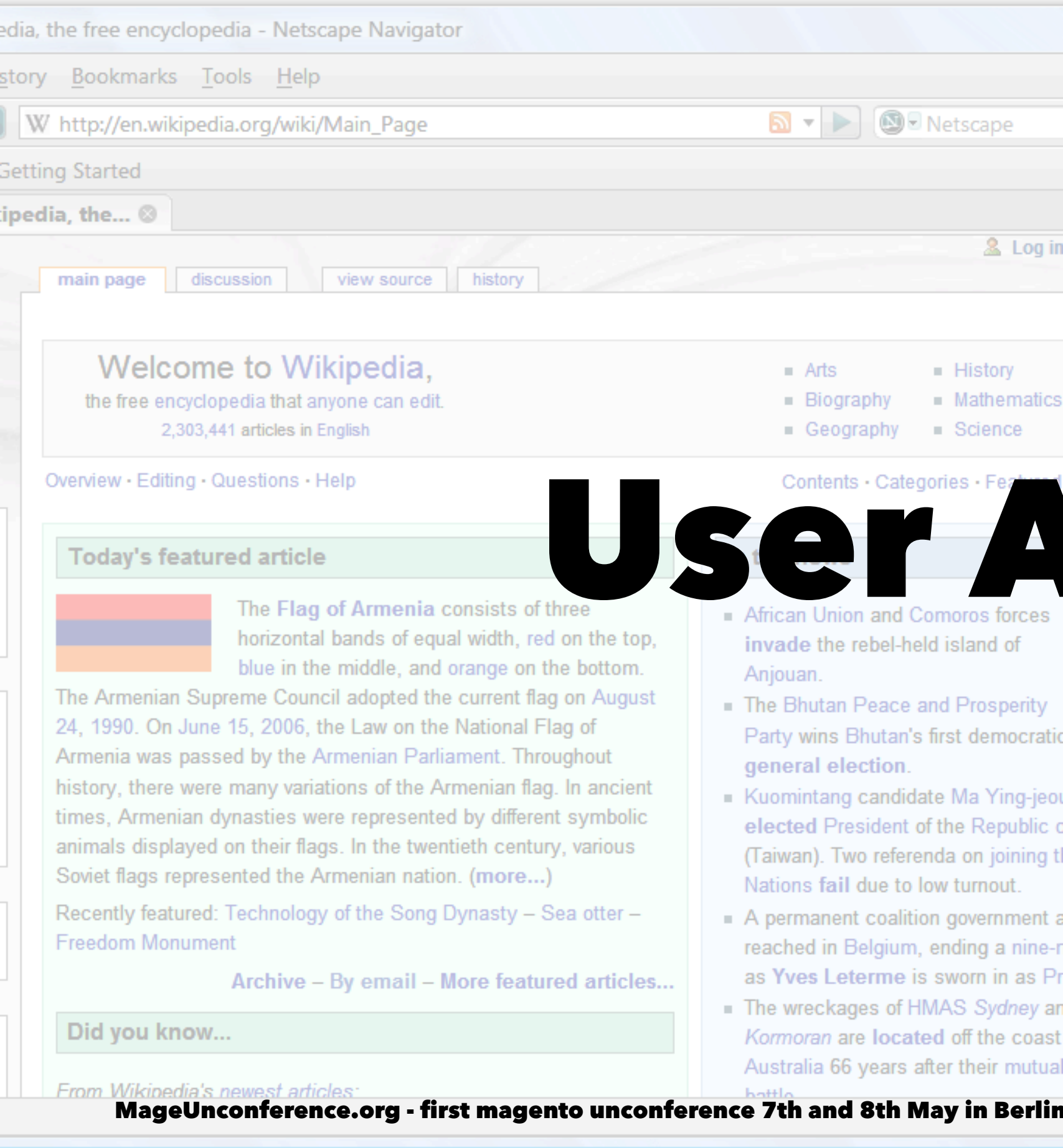
Cache-Control header

Send Cache-Control header



How to cache





User Agents



User Agents

- web browser
- crawler
- search bots -> robots.txt
- screen reader
- HTTP proxy

Future

- SPDY
- HTTP 2.0



Thank you Questions?

<http://theslidesareonline.de/http>

Resources

- <https://developers.google.com/web/fundamentals/performance/optimizing-content-efficiency/http-caching?hl=en>
- <http://code.tutsplus.com/tutorials/http-the-protocol-every-web-developer-must-know-part-1--net-31177>
- <https://en.wikipedia.org/wiki/HypertextTransferProtocol>
- <http://zacstewart.com/2012/04/14/http-options->

Resources

- <https://stackoverflow.com/questions/2068418/whats-the-difference-between-a-302-and-a-307-redirect>
- <http://www.chromium.org/spdy/spdy-whitepaper>
- <https://tools.ietf.org/html/draft-ietf-httpbis-http2-15>

Images

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- <http://www.navigatecorp.com/wp-content/uploads/back-to-the-future-delorean1.jpg>
- <http://httpstatusdogs.com/>
- <http://www.viralseoservices.com/resources/http-status-codes-explained.html>
- http://curriculum.railsbridge.org/job-board/crud_and_resourceful_routing
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