



adtelligent



HTTP

Обзорный рассказ в вольном стиле



HTTP - один из основных протоколов

1. HyperText Transfer Protocol



HTTP - один из основных протоколов

1. Гипертекст



HTTP - один из основных протоколов

1. Гипертекст
2. Картинки



HTTP - один из основных протоколов

1. Гипертекст
2. Картинки
3. Видео
4. музыка
5. Реклама
6. Транспорт для других протоколов
прикладного уровня



Адресация: URL



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URL - Uniform Resource Locator

Отвечает на вопрос

“где и как найти что то?”



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URL - Uniform Resource Locator

Отвечает на вопрос

“где и как найти что то?”

Общий вид

<https://www.pinterest.com/search/pins/?q=%23wallpaper>



Адресация: URL

<https://www.pinterest.com/search/pins/?q=%23wallpaper>

<схема>://<хост>/<путь>?<параметры>#<якорь>



Адресация: URL

<https://www.pinterest.com/search/pins/?q=%23wallpaper>

<схема>://<хост>/<путь>?<параметры>#<якорь>

схема: https

хост: www.pinterest.com

путь: /search/pins/

параметры: q=%23wallpaper



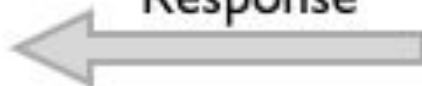
Структура протокола



Request



Response





Структура протокола

Request / Запрос



Структура протокола

Request / Запрос

GET /explore/tags/girls/ HTTP/1.1

Host: www.instagram.com

User-Agent: curl/7.47.0

Accept: */*



Структура протокола

Response / Ответ

HTTP/1.1 200 OK

Content-Type: text/html

Content-Language: en

Server: www.instagram.com

Date: Wed, 21 Feb 2018 22:58:43 GMT

Content-Length: 285942

{ [285942 bytes of data]



Структура протокола

Request / Запрос

<Метод> <URI> HTTP/1.1

Заголовки

[пустая строка]

Тело сообщения

POST /r/funny/12 HTTP/1.1

Host: reddit.com

Content-Lenght: 223381

User-Agent: curl/2.2.27

Content-Type: text/plain

Pizza's Here!



Структура протокола

Response / Ответ

HTTP/1.1 <Код> <Статус>

Заголовки

[пустая строка]

Тело документа

Заголовки	Ответ	Кэш	HTML	Cookies
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Заголовки ответа

[симпатичный print](#)

```
HTTP/1.1 200 Ok
Server: nginx
Date: Thu, 20 Sep 2012 13:59:02 GMT
Content-Type: text/html; charset=UTF-8
Transfer-Encoding: chunked
Connection: close
Cache-Control: no-cache,no-store,max-age=0,must-revalidate
Expires: Thu, 20 Sep 2012 13:59:03 GMT
Last-Modified: Thu, 20 Sep 2012 13:59:03 GMT
P3P: policyref="/w3c/p3p.xml", CP="NON DSP ADM DEV PSD IVDo OUR IND STP PHY PRE NAV UNI"
Set-Cookie: t=p; Domain=.yandex.ru; Path=/
z=; Expires=Mon, 23-Sep-2002 13:59:02 GMT; Domain=.yandex.ru; Path=/
X-Frame-Options: DENY
X-XRDS-Location: http://openid.yandex.ru/server_xrds/
Content-Encoding: gzip
```

Заголовки запроса

[симпатичный print](#)

```
GET / HTTP/1.1
Host: www.yandex.ru
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.6; rv:15.0) Gecko/20100101 Firefox/15.0.1
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language: ru-ru,ru;q=0.8,en-us;q=0.5,en;q=0.3
Accept-Encoding: gzip, deflate
Connection: keep-alive
Cookie: yandexuid=8187969851326274991; my=YycCAAEoAYDVNgEBAA==; yp=1662904536.udn.eW5keC5jb2xsYXBzdXMu
```

▼ GET www.yandex.ru

Заголовки Ответ Кэш HTML Cookies

Заголовки ответа

симпатичный print

HTTP/1.1 200 Ok

Server: nginx

Date: Thu, 20 Sep 2012 13:59:02 GMT

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

Transfer-Encoding: chunked

Connection: close

Cache-Control: no-cache,no-store,max-age=0,must-revalidate

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P3P: policyref="/w3c/p3p.xml", CP="NON DSP ADM DEV PSD IVDo OUR IND STP PHY PRE NAV UNI"

Set-Cookie: t=p; Domain=.yandex.ru; Path=/

z=; Expires=Mon, 23-Sep-2002 13:59:02 GMT; Domain=.yandex.ru; Path=/

X-Frame-Options: DENY

X-XRDS-Location: http://openid.yandex.ru/server_xrds/

Content-Encoding: gzip

Заголовки запроса

симпатичный print

GET / HTTP/1.1

Host: www.yandex.ru

User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.6; rv:15.0) Gecko/20100101 Firefox/15.0.1

Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8

Accept-Language: ru-ru,ru;q=0.8,en-us;q=0.5,en;q=0.3

Accept-Encoding: gzip, deflate

Connection: keep-alive

Cookie: yandexuid=8187969851326274991; my=YycCAAEoAYDVNgEBAA==; yp=1662904536.udn.eW5keC5jb2xsYXBzdXMi

Заголовки ответа

[симпатичный print](#)

HTTP/1.1 200 Ok

```
Server: nginx
Date: Thu, 20 Sep 2012 13:59:02 GMT
Content-Type: text/html; charset=UTF-8
Transfer-Encoding: chunked
Connection: close
Cache-Control: no-cache,no-store,max-age=0,must-revalidate
Expires: Thu, 20 Sep 2012 13:59:03 GMT
Last-Modified: Thu, 20 Sep 2012 13:59:03 GMT
P3P: policyref="/w3c/p3p.xml", CP="NON DSP ADM DEV PSD IVDo OUR IND STP PHY PRE NAV UNI"
Set-Cookie: t=p; Domain=.yandex.ru; Path=/
z=; Expires=Mon, 23-Sep-2002 13:59:02 GMT; Domain=.yandex.ru; Path=/
X-Frame-Options: DENY
X-XRDS-Location: http://openid.yandex.ru/server_xrds/
Content-Encoding: gzip
```

Заголовки запроса

[симпатичный print](#)

GET / HTTP/1.1

```
Host: www.yandex.ru
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.6; rv:15.0) Gecko/20100101 Firefox/15.0.1
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language: ru-ru;ru;q=0.8,en-us;q=0.5,en;q=0.3
Accept-Encoding: gzip, deflate
Connection: keep-alive
Cookie: yandexuid=8187969851326274991; my=YycCAAEoAYDVNgEBAA==; yp=1662904536.udn.eW5keC5jb2xsYXBzdXM
```



```
> GET /p/BcfUZjhHAQH/ HTTP/1.1
> Host: www.instagram.com
> User-Agent: curl/7.47.0
> Accept: */*
>
< HTTP/1.1 200 OK
< Content-Type: text/html
< X-Frame-Options: SAMEORIGIN
< Cache-Control: private, no-cache, no-store, must-revalidate
< Pragma: no-cache
< Expires: Sat, 01 Jan 2000 00:00:00 GMT
< Vary: Cookie, Accept-Language, Accept-Encoding
< Content-Language: en
< Date: Wed, 21 Feb 2018 23:40:05 GMT
< Strict-Transport-Security: max-age=86400
< Set-Cookie: rur=FTW; Path=/
< Set-Cookie: csrftoken=75eqZ3jzvx9lcSSFGRvVe4linVUiahsw; expires=Wed, 20-Feb-2019 23:40:05 GMT; Max-Age=31449600; Path=/; Secure
< Set-Cookie: mid=W04DVQAEAAESxEqmD76HuT3214RG; expires=Tue, 16-Feb-2038 23:40:05 GMT; Max-Age=630720000; Path=/
< Set-Cookie: urlgen="{\"time\": 1519256405}:leodzZ:g9q6-jzDeViGABuTpBr9r_YRe0o"; Path=/
< Connection: keep-alive
< Content-Length: 23637
<
<!DOCTYPE html>
<!--[if lt IE 7]>      <html lang="en" class="no-js lt-ie9 lt-ie8 lt-ie7 not-logged-in client-root"> <![endif]-->
<!--[if IE 7]>        <html lang="en" class="no-js lt-ie9 lt-ie8 not-logged-in client-root"> <![endif]-->
<!--[if IE 8]>        <html lang="en" class="no-js lt-ie9 not-logged-in client-root"> <![endif]-->
<!--[if gt IE 8]><!--> <html lang="en" class="no-js not-logged-in client-root"> <!--<![endif]-->
  <head><meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">

    <title>
      @ensol3zen on Instagram: "Настроение... Крошить! Ломать! Разбивать и убивать!
      Зубы на бордюр!
      #американскаяисторияX #мояборьба #настроение #удивляюсь🤔
    </title>
```



Структура протокола

Request: Методы

1. GET
2. POST
3. PUT
4. DELETE
5. PATCH
6. HEAD
7. OPTIONS
8. CONNECT



Структура протокола

Request: Методы

		Request		Response
		Idempotency	Body	Body
1.	GET	+	-	+
2.	POST	-	+	+
3.	PUT	+	+	-
4.	DELETE	+	-	-
5.	HEAD	+	-	-



Структура протокола

Response: Статусы ответов

2xx - Успешные



Структура протокола

Response: Статусы ответов

2xx - Успешные

200 Ok

201 Created

202 Accepted

204 No Content



Структура протокола

Response: Статусы ответов

3xx - Перенаправление



Структура протокола

Response: Статусы ответов

3xx - Перенаправление

300 Multiple Choices

301 Moved Permanently

302 Moved Temporarily

304 Not Modified



Структура протокола

Response: Статусы ответов

```
mbikola@mykola-laptop-dell ~ $ curl -vv http://adtelligent.com
* Rebuilt URL to: http://adtelligent.com/
* Trying 34.203.112.31...
* Connected to adtelligent.com (34.203.112.31) port 80 (#0)
> GET / HTTP/1.1
> Host: adtelligent.com
> User-Agent: curl/7.47.0
> Accept: */*
>
< HTTP/1.1 301 Moved Permanently
< Server: nginx/1.10.3 (Ubuntu)
< Date: Wed, 21 Feb 2018 23:57:14 GMT
< Content-Type: text/html
< Content-Length: 194
< Connection: keep-alive
< Location: https://adtelligent.com/
^
.
```



Структура протокола

Response: Статусы ответов

4xx - Ошибки клиента

400 Bad Request

401 Unauthorized

402 Payment Required

403 Forbidden

404 Not Found



Структура протокола

Response: Статусы ответов

5xx - Ошибки сервера

500 Internal Server Error

501 Not Implemented

502 Bad Gateway

503 Service Unavailable

504 Gateway Timeout



Структура протокола

Response: Статусы ответов

2xx - Успешно

3xx - Перенаправление

4xx - Ошибка клиента

5xx - Ошибка сервера



Структура протокола

Заголовки HTTP

<Request/Response Line>

<Headers>

<Body>

GET /explore/tags/girls/
HTTP/1.1

Host: www.instagram.com

User-Agent: curl/7.47.0

Accept: */*



Структура протокола

Заголовки HTTP

- General Headers
- Request Headers
- Response Headers
- Entity Headers



Структура протокола | Заголовки HTTP

```
HTTP/1.1 200 OK
Date: Mon, 17 Sep 2012 13:05:11 GMT
Transfer-Encoding: chunked
Connection: keep-alive
Pragma: no-cache
Cache-Control: no-cache, no-store, max-age=0,
must-revalidate
Server: nginx
Vary: X-Real-SSL-Protocol
Content-Type: text/html; charset=UTF-8
Expires: Mon, 17 Sep 2012 13:05:11 GMT
Content-Encoding: gzip
```



Структура протокола | Заголовки HTTP

General Headers

- **Date: Tue, 15 Nov 1994 08:12:03 GMT**
- **Cache-Control: no-cache, max-age=0**
- **Transfer-Encoding: chunked**
- **Via: 1.1 vegur**
- **Warning: 110 - “cache down, use slate”**



Структура протокола | Заголовки HTTP

Request Headers

- **Accept: application/json, text/html**
- **Accept-Language: en-US, en;q=0.9**
- **Authorization: Bearer AE344FD.FFB2.....**
- **Transfer-Encoding: chunked**
- **Host: www.instagram.com**
- **User-Agent: Mozilla/5.0 (Windows) Firefox/42**



Структура протокола | Заголовки HTTP

Request Headers

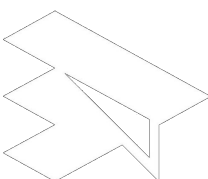
- **Origin: pubads.g.doubleclick.net**
- **Referer: <http://instagram.com/tags>**
- **DNT: 1**



Структура протокола | Заголовки HTTP

Conditional Request Headers

- **If-Match: "sometag"**
- **If-None-Match: "sometag"**
- **If-Modified-Since: 15 Nov 1994**
- **If-Unmodified-Since: 15 Nov 1994**
- **If-Range: [date or etag]**



Client

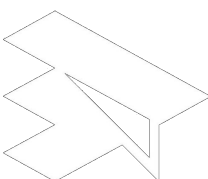
Server

Initial request:
the cache is empty and
the request is *not* conditional

GET /doc HTTP/1.1

HTTP/1.1 200 OK
Last-Modified: *date*
Etag: "xyz"

Resource returned.
Both validators are set.



Client

Server

Request with a stale cache:
the validators are used as
preconditions for the request..

GET /doc HTTP/1.1
If-Modified-Since: date
If-None-Match: "xyz"

HTTP/1.1 304 Not Modified

Resource unchanged.
Not sent again



Структура протокола | Заголовки HTTP

Response Headers

- **Server: nginx/1.27**
- **Location: <http://instagram.com/tag/мояборьба>**
- **Set-Cookie: banned=1**
- **ETag: "sometag"**
- **Last-Modified: Wed, 21 Oct 2015 06:12:32 GMT**
- **Retry-After: 120**



Структура протокола | Заголовки HTTP

Entity Headers

- **Content-Type: text/xml**
- **Content-Length: 25547**
- **Content-Encoding: gzip**
- **Content-Language: en-US, en-CA**
- **Last-Modified: Wed, 21 Oct 2016 04:12:44 GMT**
- **Expires: 3600**



Структура протокола | Заголовки HTTP

Extensions / Нестандартные заголовки

- **X-Frame-Options: DENY;**
- **X-Frame-Options: SAMEORIGIN;**
- **X-Requested-With: XMLHttpRequest**



Cookie

- **Set-Cookie: cookienname=value**
- **Cookie: cookienname=value**



Cookie

- **Set-Cookie: cookienname=value; expires=date;**
- **Cookie: cookienname=value**

- **Аутентификация**
- **Отслеживание переходов**
- **Ведение статистики**
- **Персонализация: темы, язык, настройки**



Cookie

HTTP/1.0 200 OK

Content-type: text/html

Set-Cookie: yummy_cookie=choco

Set-Cookie: tasty_cookie=strawberry

[page content]



Cookie

GET /anotherpage HTTP/1.1

Host: www.example.com

Cookie: yummy_cookie=choco; tasty_cookie=strawberry



Cookie

- **Сессионные**

Cookie: yummy_cookie=choco; tasty_cookie=strawberry

- **Постоянные**

Cookie: id=idkfa; Expires=Wed, 21 Oct 2015 07:28:00 GMT

- **Secure/HttpOnly**

Cookie: id=idkfa; Expires=[date]; Secure; HttpOnly



Cookie

- **Сессионные**

Cookie: yummy_cookie=choco; tasty_cookie=strawberry

- **Постоянные**

Cookie: id=idkfa; Expires=Wed, 21 Oct 2015 07:28:00 GMT

- **Secure/HttpOnly**

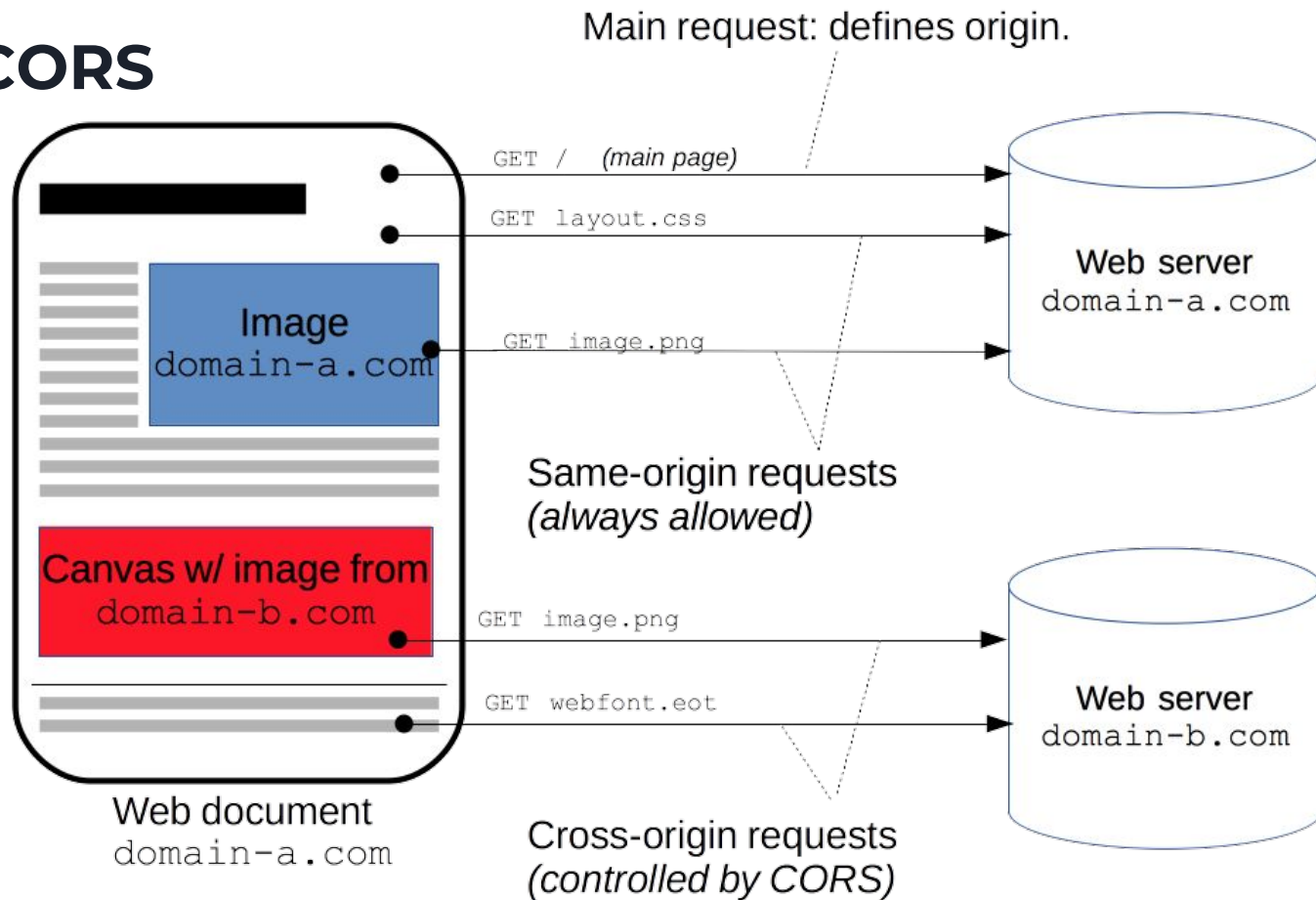
Cookie: id=idkfa; Expires=[date]; Secure; HttpOnly



На что скорее всего не хватит времени

- **Content-Security-Policy (CSP)**
- **Cross Origin Requests (CORS)**
- **X-XSS-Protection**
- **X-Content-Type-Options**

CORS



X-XSS-Protection

12:30:42.195 Error parsing header X-XSS-Protection: 1; mode=block; report=https://www.google. ?el=adunit&controls=...is.com&widgetid=1:1 com/appserve/security-bugs/log/youtube: insecure reporting URL for secure page at character position 22. The default protections will be applied.

12:30:43.171 [Violation] 'setTimeout' handler took 201ms www-embed-player.js:291

12:30:43.481 [Violation] 'setTimeout' handler took 156ms www-embed-player.js:291

12:30:43.590 ►Got an adError : code 900 with error message + `Ad Error: The response does not contain any common.min.js?v=3e4d9732:1 valid ads.` for VAST tag http://pubads.g.doubleclick.net/gampad/ads?sz=640x480&iu=/166336097/Filmon...scription_url=http%3A%2F%2Fwww.filmon.com%2Ftv%2Fbbc-news&vid t=BBC%20News

12:30:43.675 ►XHR finished loading: POST "https://www.youtube.com/ad_data_204". www-embed-player.js:343

12:30:44.693 ►Got an adError : code 900 with error message + `Ad Error: The response does not contain any common.min.js?v=3e4d9732:1 valid ads.` for VAST tag http://pubads.g.doubleclick.net/gampad/ads?sz=640x480&iu=/166336097/Filmon...scription_url=http%3A%2F%2Fwww.filmon.com%2Ftv%2Fbbc-news&vid t=BBC%20News

12:30:44.723 ►Got an adError : code 900 with error message + `Ad Error: The response does not contain any common.min.js?v=3e4d9732:1 valid ads.` for VAST tag http://pubads.g.doubleclick.net/gampad/ads?sz=640x480&iu=/166336097/Filmon...scription_url=http%3A%2F%2Fwww.filmon.com%2Ftv%2Fbbc-news&vid t=BBC%20News

12:30:53.404 ►XHR finished loading: POST "https://www.youtube.com/youtubei/v1/log_interaction?alt=json&key=AIz www-embed-player.js:343 aSyA0_FJ2SlqU8Q4STEHLGCilw_Y9_1lqcW8".

12:41:56.683 DOMException: Blocked a frame with origin "https://ssl.duvideo.net" from accessing a cross-origin frame. VM183:1
at new Vars (eval at <anonymous> (https://ssl.duvideo.net/player/player/web/js/uppod.js:4:1), <anonymous>:1:141715)
at Init (eval at <anonymous> (https://ssl.duvideo.net/player/player/web/js/uppod.js:4:1), <anonymous>:1:10893)
at new UpPod (eval at <anonymous> (https://ssl.duvideo.net/player/player/web/js/uppod.js:4:1), <anonymous>:1:3475)
at HTML5Player (https://ssl.duvideo.net/player/player/web/js/player.js:72:11)
at Object.success (https://ssl.duvideo.net/player/player/web/js/player.js:149:5)
at i (https://ajax.googleapis.com/ajax/libs/jquery/3.1.0/jquery.min.js:2:27603)
at Object.fireWith [as resolveWith] (https://ajax.googleapis.com/ajax/libs/jquery/3.1.0/jquery.min.js:2:28369)
at A (https://ajax.googleapis.com/ajax/libs/jquery/3.1.0/jquery.min.js:4:13858)
at XMLHttpRequest.<anonymous> (https://ajax.googleapis.com/ajax/libs/jquery/3.1.0/jquery.min.js:4:16146)

12:41:56.701 ►XHR finished loading: POST "https://ssl.duvideo.net/data/param". jquery.min.js:4

12:41:56.801 ►XHR finished loading: POST "https://ssl.duvideo.net/data/bookmarks". jquery.min.js:4



The End.

Спасибо за внимание.

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