



Web Services PS 703128

HTTP

Exercise 1 – HTTP Status codes

Explain in your own words in which situation you can experience the following HTTP status codes:

- **403 Forbidden**

You will receive an HTTP 403 response whenever you try to visit a web page that you are not allowed to access. E.g.: Apache web servers (with disabled directory listing) send an HTTP 403 response if you try to access a path that would show the web server's directories and files.

- **408 Request timeout**

You will receive an HTTP 408 response if your computer takes too much time to respond to the server.

- **415 Unsupported Media Type**

You will receive an HTTP 415 response when you for example try to upload a .png image but the server requires you to upload a .jpg image.

- **500 Internal Server Error**

You will receive an HTTP 500 response if there is a server sided error. For example there is a runtime error in a .php file.

- **505 HTTP Version Not Supported**

Whenever your browser sends a HTTP GET request, it specifies the expected HTTP version in the header. If the web server does not support the specified HTTP version you will receive an HTTP 505 response.

Exercise 2 – HTTP request

Get familiar with **curl** ¹ and use it to send the following HTTP requests against the given servers. Paste the headers from the response of the server and give an explanation to the status code.

GET /en/Main_Page HTTP/1.1

Host: wikitravel.org

```
HTTP/1.1 200 OK
Set-Cookie: wikitravel_ip=10.16.82.37; path=/; domain=.wikitravel.org
Expires: Fri, 23 Oct 2015 11:50:50 GMT
Content-Type: text/html; charset=utf-8
Content-Language: en
Set-Cookie: BIGipServerwikitravel-web_POOL=2894991370.20480.0000; path=/
thisTTL: 3600.000
Transfer-Encoding: chunked
Date: Fri, 23 Oct 2015 11:58:47 GMT
Age: 477
Connection: keep-alive
X-Cache: HIT
X-Cache-nHIT: 183
Cache-Control: private
Pragma: private
Vary: Accept-Encoding,User-Agent
Set-Cookie: BIGipServerwikitravel-varnish1_POOL=3264090122.52514.0000; path=/
200 OK means the request was successful.
```

GET / HTTP/1.1

Host: wikitravel.org

```
HTTP/1.1 302 Found
Set-Cookie: wikitravel_ip=213.47.244.67; path=/; domain=.wikitravel.org
Status: 302 Found
Location: /en/Main_Page
Content-Type: text/html; charset=utf-8
Set-Cookie: BIGipServerwikitravel-web_POOL=3096317962.20480.0000; path=/
Content-Length: 0
Accept-Ranges: bytes
Date: Fri, 23 Oct 2015 12:00:42 GMT
Age: 0
Connection: keep-alive
X-Cache: MISS
Cache-Control: private
Pragma: private
Vary: Accept-Encoding,User-Agent
Set-Cookie: BIGipServerwikitravel-varnish1_POOL=3264090122.52514.0000; path=/
302 Found (Moved Temporarily) means that the requested resource has been moved
temporarily and this and all future requests should be directed to /en/Main_Page.
```

¹<http://curl.haxx.se/>

GET /en/innsbruck HTTP/1.1**Host: wikitravel.org**

HTTP/1.1 301 Moved Permanently
Set-Cookie: wikitravel_ip=213.47.244.67; path=/; domain=.wikitravel.org
X-Content-Type-Options: nosniff
X-Vary-Options: Accept-Encoding;list-contains=gzip, Cookie;string-contains=wikitravel_org_enToken;string-contains=wikitravel_org_enLoggedOut;string-contains=forceHTTPS;string-contains=wikitravel_org_en_session;string-contains=mf_useformat;string-contains=stopMobileRedirect;string-contains=optin;string-contains=disableImages
Location: http://wikitravel.org/en/Innsbruck
Expires: Fri, 23 Oct 2015 12:34:21 GMT
Content-Type: text/html; charset=utf-8
Content-Language: en
Set-Cookie: BIGipServerwikitravel-web_POOL=3163426826.20480.0000; path=/
Transfer-Encoding: chunked
Date: Fri, 23 Oct 2015 12:34:21 GMT
Age: 0
Connection: keep-alive
X-Cache: MISS
Cache-Control: private
Pragma: private
Vary: Accept-Encoding,User-Agent
Set-Cookie: BIGipServerwikitravel-varnish1_POOL=3264090122.52514.0000; path=/
301 Moved Permanently means that the requested resource /en/innsbruck has been moved permanently and this and all future requests should be directed to /en/Innsbruck (capital I).

GET /en/Innsbruck HTTP/1.1**Host: wikitravel.org**

HTTP/1.1 200 OK
Set-Cookie: wikitravel_ip=220.233.14.232; path=/; domain=.wikitravel.org
X-Content-Type-Options: nosniff
Content-language: en
X-Vary-Options: Accept-Encoding;list-contains=gzip, Cookie;string-contains=wikitravel_org_enToken;string-contains=wikitravel_org_enLoggedOut;string-contains=forceHTTPS;string-contains=wikitravel_org_en_session;string-contains=mf_useformat;string-contains=stopMobileRedirect;string-contains=optin;string-contains=disableImages
Expires: Fri, 23 Oct 2015 11:51:52 GMT
Content-Type: text/html; charset=UTF-8
Set-Cookie: BIGipServerwikitravel-web_POOL=3029209098.20480.0000; path=/
thisTTL: 3600.000
Transfer-Encoding: chunked
Date: Fri, 23 Oct 2015 12:35:43 GMT
Age: 2631
Connection: keep-alive
X-Cache: HIT
X-Cache-nHIT: 5
Cache-Control: private
Pragma: private
Vary: Accept-Encoding,User-Agent
Set-Cookie: BIGipServerwikitravel-varnish1_POOL=3264090122.52514.0000; path=/
200 OK means the request was successful.

OPTIONS / HTTP/1.1**Host: www.uibk.ac.at**

HTTP/1.1 405 Method Not Allowed
Date: Fri, 23 Oct 2015 12:37:53 GMT
Server: Apache
Content-Location: index.html.de
Vary: negotiate,accept-language,cookie,user-agent
TCN: choice
Allow: ARRAY(0x7fd897f8b768)
Content-Length: 29
Cache-Control: max-age=60
Expires: Fri, 23 Oct 2015 12:38:53 GMT
Content-Type: text/html
Content-Language: de
Via: 1.1 www.uibk.ac.at

405 Method Not Allowed means that the requested resource does not support the OPTIONS method (in this case).

Use the following HTTP request to post data over HTTP and get a result back, paste the result in the box and explain what the service does.

POST /webservices/tempconvert.asmx/CelsiusToFahrenheit HTTP/1.1**Host: www.w3schools.com****Content-Type: application/x-www-form-urlencoded****Content-Length: 215****Celsius=21**

```
<?xml version="1.0" encoding="utf-8"?>
<string xmlns="http://www.w3schools.com/webservices/">69.8</string>
```

The service converts temperature from celsius to fahrenheit. The response is in xml format.

21 degrees celsius is 69.8 degrees fahrenheit.

Exercise 3 – HTTP 1.1

What is the main difference between HTTP 1.0 and HTTP 1.1, regarding the number of connections? Which headers are involved in the process?

HTTP 1.0 had to open a new connection for each request/response pair.
HTTP 1.1 uses persistent connections.

The headers involved are:

On HTTP 1.0 → Connection: close

On HTTP 1.1 → Connection: keep-alive

→ Transfer-Encoding: chunked

Explain your answer by comparing the headers of the following two HTTP requests.

GET /en/innsbruck HTTP/1.0

Host: wikitravel.org

HTTP/1.1 200 OK

Set-Cookie: wikitravel_ip=220.233.14.232; path=/; domain=.wikitravel.org

X-Content-Type-Options: nosniff

Content-language: en

X-Vary-Options: Accept-Encoding;list-contains=gzip,Cookie;string-contains=wikitravel_org_enToken;string-contains=wikitravel_org_enLoggedInOut;string-contains=forceHTTPS;string-contains=wikitravel_org_en_session;string-contains=mf_useformat;string-contains=stopMobileRedirect;string-contains=optin;string-contains=disableImages

Expires: Fri, 23 Oct 2015 11:51:52 GMT

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

Set-Cookie: BIGipServerwikitravel-web_POOL=3029209098.20480.0000; path=/thisTTL: 3600.000

Date: Fri, 23 Oct 2015 12:50:46 GMT

Age: 3534

Connection: close

X-Cache: HIT

X-Cache-nHIT: 8

Cache-Control: private

Pragma: private

Vary: Accept-Encoding,User-Agent

Set-Cookie: BIGipServerwikitravel-varnish1_POOL=3264090122.52514.0000; path=/

Note → "Connection: close"

GET /en/innsbruck HTTP/1.1

Host: wikitravel.org

HTTP/1.1 200 OK

Set-Cookie: wikitravel_ip=220.233.14.232; path=/; domain=.wikitravel.org

X-Content-Type-Options: nosniff

Content-language: en

X-Vary-Options: Accept-Encoding;list-contains=gzip,Cookie;string-contains=wikitravel_org_enToken;string-contains=wikitravel_org_enLoggedInOut;string-contains=forceHTTPS;string-contains=wikitravel_org_en_session;string-contains=mf_useformat;string-contains=stopMobileRedirect;string-contains=optin;string-contains=disableImages

Expires: Fri, 23 Oct 2015 11:51:52 GMT

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

Set-Cookie: BIGipServerwikitravel-web_POOL=3029209098.20480.0000; path=/thisTTL: 3600.000

Transfer-Encoding: chunked

Date: Fri, 23 Oct 2015 12:51:28 GMT

Age: 3576

Connection: keep-alive

X-Cache: HIT

X-Cache-nHIT: 9

Cache-Control: private

Pragma: private

Vary: Accept-Encoding,User-Agent

Set-Cookie: BIGipServerwikitravel-varnish1_POOL=3264090122.52514.0000; path=/

Note → "Transfer-Encoding: chunked" and "Connection: keep-alive"