HTTP, CGI y WSGI

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Solicitud (request) hecha por un cliente HTTP

```
GET /index.html HTTP/1.1\n
Host: www.example.com\n
\n
```

Respuesta (response) hecha por un servidor HTTP

```
HTTP/1.1 200 OK\n
Date: Mon, 23 May 2005 22:38:34 GMT\n
Server: Apache/1.3.3.7 (Unix) (Red-Hat/Linux)\n
Last-Modified: Wed, 08 Jan 2003 23:11:55 GMT\n
ETag: "3f80f-1b6-3e1cb03b"\n
Content-Type: text/html; charset=UTF-8\n
Content-Length: 131\n
Accept-Ranges: bytes\n
Connection: close\n
\n
<html>\n
<head>\n
  <title>An Example Page</title>\n
</head>\n
<body>\n
  Hello World, this is a very simple HTML document.\n
</body>\n
</html>\n
```

Solicitud (request) hecha por un cliente HTTP

```
VERBO URI HTTP/<VERSION>\n
Cabecera-1: Valor cabecera 1\n
Cabecera-2: Valor cabecera 2\n
Cabecera-3: Valor cabecera 3\n
Cabecera-N: Valor cabecera N\n
\n
```

Respuesta (response) hecha por un servidor HTTP

```
HTTP/<VERSION> <CODIGO> <DESC>\n
Cabecera-1: Valor cabecera 1\n
Cabecera-2: Valor cabecera 2\n
Cabecera-3: Valor cabecera 3\n
Cabecera-N: Valor cabecera N\n
\n
Cuerpo del documento…
```

Ejemplo de solicitud hecha con cURL (línea de comandos)

```
curl -vv http://www.google.com.pe
```

…si no tienes cURL instalado…

```
apt-get install curl

yum install curl
```

Ejemplo de solicitud hecha con cURL (línea de comandos)

```
$ curl -vv http://www.google.com.pe
* Rebuilt URL to: http://www.google.com.pe/
* Hostname was NOT found in DNS cache
*   Trying 74.125.131.94...
* Adding handle: conn: 0x7f97c4003000
* Adding handle: send: 0
* Adding handle: recv: 0
* Curl_addHandleToPipeline: length: 1
* - Conn 0 (0x7f97c4003000) send_pipe: 1, recv_pipe: 0
* Connected to www.google.com.pe (74.125.131.94) port 80
(#0)
> GET / HTTP/1.1
> User-Agent: curl/7.34.0
> Host: www.google.com.pe
> Accept: */*
>
```

Ejemplo de solicitud hecha con cURL (línea de comandos)

```
< HTTP/1.1 200 OK
< Date: Sat, 25 Jan 2014 19:05:03 GMT
< Expires: -1
< Cache-Control: private, max-age=0
< Content-Type: text/html; charset=ISO-8859-1
< Set-Cookie:
PREF=ID=954f2935a9dd2786:FF=0:TM=1390676703:LM=1390676703:S
=j1z3xVsyGaDLoCzd; expires=Mon, 25-Jan-2016 19:05:03 GMT;
path=/; domain=.google.com.pe
< Server: gws
< X-XSS-Protection: 1; mode=block
< X-Frame-Options: SAMEORIGIN
< Alternate-Protocol: 80:quic
< Transfer-Encoding: chunked
<
<!doctype html><html itemscope="" itemtype="http://
schema.org/WebPage"><head><meta itemprop="image" content="/
images/google_favicon_128.png"><title>Google</title>
```

httpstatus.es

1xx informational

2xx success

3xx redirection

4xx client error

5xx server error

Instalando Apache 2 (Servidor web)

```
apt-get install apache2

yum install httpd
```

Sitio web por omisión (virtual host)

```
<VirtualHost *:80>
        ServerAdmin webmaster@localhost

        DocumentRoot /var/www
        <Directory />
                Options FollowSymLinks
                AllowOverride None
        </Directory>
        <Directory /var/www/>
                Options Indexes FollowSymLinks MultiViews
                AllowOverride None
                Order allow,deny
                allow from all
        </Directory>

        ScriptAlias /cgi-bin/ /usr/lib/cgi-bin/
        <Directory "/usr/lib/cgi-bin">
                AllowOverride None
                Options +ExecCGI -MultiViews +SymLinksIfOwnerMatch
                Order allow,deny
                Allow from all
        </Directory>

        ErrorLog ${APACHE_LOG_DIR}/error.log

        # Possible values include: debug, info, notice, warn, error, crit,
        # alert, emerg.
        LogLevel warn

        CustomLog ${APACHE_LOG_DIR}/access.log combined

    Alias /doc/ "/usr/share/doc/"
    <Directory "/usr/share/doc/">
        Options Indexes MultiViews FollowSymLinks
        AllowOverride None
        Order deny,allow
        Deny from all
        Allow from 127.0.0.0/255.0.0.0 ::1/128
    </Directory>

</VirtualHost>
```

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        ServerAdmin webmaster@localhost

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        <Directory /var/www/>
                Options Indexes FollowSymLinks MultiViews
                AllowOverride None
                Order allow,deny
                allow from all
        </Directory>

        ScriptAlias /cgi-bin/ /usr/lib/cgi-bin/
        <Directory "/usr/lib/cgi-bin">
                AllowOverride None
                Options +ExecCGI -MultiViews +SymLinksIfOwnerMatch
                Order allow,deny
                Allow from all
        </Directory>
```

Sitio web por omisión (virtual host)

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        ErrorLog ${APACHE_LOG_DIR}/error.log

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    <Directory "/usr/share/doc/">
        Options Indexes MultiViews FollowSymLinks
        AllowOverride None
        Order deny,allow
        Deny from all
        Allow from 127.0.0.0/255.0.0.0 ::1/128
    </Directory>

</VirtualHost>
```

Instalando módulo WSGI

```
apt-get install libapache2-mod-wsgi
```

```
rpm -Uvh http://download.fedora.redhat.com/pub/epel/5/i386/epel-release-5-4.noarch.rpm
yum update
```

```
yum install python-setuptools mod_wsgi
```

Directivas WSGI en Apache

```
<VirtualHost *:80>
  . . .

  <Directory /path/to/python/project>
        Order deny,allow
        Allow from all
  </Directory>

  WSGIScriptAlias / /path/to/python/project/wsgi_script.py
  WSGIPassAuthorization On

  . . .

</VirtualHost>
```

Ejemplo script WSGI

```python
def application(environ, start_response):
    start_response('200 OK', [('Content-Type', 'text/html')])
    return ['Hola desde WSGI!']
```

Otro ejemplo de script WSGI

```python
def application(environ, start_response):
    start_response('200 OK', [('Content-Type', 'text/html')])
    if environ['REQUEST_URI'] == '/wsgi/english/':
        return ['Hello from WSGI!']
    else:
        return ['Hola desde WSGI!']
```

Ejemplo script WSGI dentro de virtualenv

http://www.bottlepy.org/

```
$ virtualenv --no-site-packages env

$ source env/bin/activate

$ pip install bottle
```

Ejemplo script WSGI dentro de virtualenv

```python
import os
import sys

ROOT_DIR = os.path.realpath(
    os.path.join(
        os.path.dirname(__file__), '.'
    )
)

VENV_DIR = '%s/env' % ROOT_DIR
activate_this_file = "%s/bin/activate_this.py" % VENV_DIR


execfile(activate_this_file, dict(__file__=activate_this_file))

from bottle import route, template, default_app

#print activate_this_file
#sys.exit()

@route('/hello/<name>')
def index(name='World'):
    return template('<b>Hello {{name}}</b>!', name=name)

application = default_app()
```