



HTTP status codes

Setting status of an
HTTPServletResponse



What are HTTP status codes?

The HTTP protocol standard includes three digit status codes to be included in the header of an HTTP response.

There are five classes of response statuses, identified by the first digit of the status code (with examples below):

- 1xx Informational 101 Switching Protocols (server agrees to switch)
- 2xx Success 200 OK
- 3xx Redirection 301 Moved Permanently
- 4xx Client Error 404 Not Found
- 5xx Server Error 500 Internal Server Error (something bad happened)

Setting the status in a Servlet

If your servlet succeeds in sending the response to the client, you can set the HTTP status code like this:

```
response.setStatus(HttpServletResponse.SC_OK);
```

If your servlet runs into any trouble, you should let the client know, by sending an appropriate status code (which you should document), e.g.:

```
HttpServletResponse.SC_NOT_FOUND
```

What code to send depends on the type of problem of course.

If your servlet is an API for data

If your servlet is an API for getting data as e.g. Json, you should document the behaviour on the API documentation page.

You can use `SC_NOT_FOUND` if the data cannot be served because it doesn't exist. You can also send an error message encoded as Json:

```
StringBuilder page = new StringBuilder();
response.setStatus(SC_NOT_FOUND); // needs import static...
page.append("{studentAPIError:\"")
    .append(nsse.getMessage()) // you can include exception messages if you want
    .append("\"}");
out.println(page);
out.close();
```

Example - student data API error - not found

```
$ lwp-request -m GET http://localhost:8080/jsonstudents?id=666  
{studentAPIError:"No such student with ID: 666"}
```

```
$ lwp-request -m HEAD http://localhost:8080/jsonstudents?id=666
```

404 Not Found

Connection: Keep-Alive

Date: Thu, 26 Jan 2017 11:37:39 GMT

Server: Winstone Servlet Engine v0.9.10

Content-Length: 49

Content-Type: application/json

Client-Date: Thu, 26 Jan 2017 11:37:39 GMT

Client-Peer: 127.0.0.1:8080

Client-Response-Num: 1

X-Powered-By: Servlet/2.5 (Winstone/0.9.10)

Example - student data API error - parameters

```
$ lwp-request -m HEAD http://localhost:8080/jsonstudents?wrong=very-wrong
```

400 Bad Request

Connection: Keep-Alive

Date: Thu, 26 Jan 2017 11:39:12 GMT

Server: Winstone Servlet Engine v0.9.10

Content-Length: 59

Content-Type: application/json

Client-Date: Thu, 26 Jan 2017 11:39:11 GMT

Client-Peer: 127.0.0.1:8080

Client-Response-Num: 1

X-Powered-By: Servlet/2.5 (Winstone/0.9.10)

```
$ lwp-request -m GET http://localhost:8080/jsonstudents?wrong=very-wrong
```

```
{name: "JSONRequestError",message: "missing id parameter"}
```

Example - student data API error - parameters

```
public void doGet(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException{
    String id = request.getParameter("id");
    if(id!=null){
        response.setContentType("application/json");
        PrintWriter out = response.getWriter();
        try{
            printResult(out,id);
        }catch(NoSuchStudentException nsse){
            StringBuilder page = new StringBuilder();
            response.setStatus(SC_NOT_FOUND);
            page.append("{studentAPIError:\").append(nsse.getMessage()).append("\}");
            out.println(page);
            out.close();
        }
    }else{
        printError(response); // Missing required ID parameter
    }
}
```

Example - student data API error - parameters

```
// Handles the missing ID parameter response
private void printError(HttpServletRequest response) throws IOException{
    response.setContentType("application/json");
    response.setStatus(SC_BAD_REQUEST);
    PrintWriter out = response.getWriter();
    out.print("{name: \"JSONRequestError\",");
    out.println("message: \"missing id parameter\"}");
    out.close();
}
```


Normal response

```
$ lwp-request -m GET http://localhost:8080/jsonstudents?id=5
```

```
{  
  "studentName": "Edward Eriksson",  
  "studentID": "5",  
  "courses": [  
    {  
      "courseCode": "TIG058"  
    }  
  ]  
}
```

```
$ lwp-request -m HEAD http://localhost:8080/jsonstudents?id=5
```

```
200 OK
```

```
Connection: Keep-Alive
```

```
Date: Thu, 26 Jan 2017 11:46:41 GMT
```

```
Server: Winstone Servlet Engine v0.9.10
```

```
Content-Length: 0
```

```
Content-Type: application/json
```

```
Client-Date: Thu, 26 Jan 2017 11:46:41 GMT
```

```
Client-Peer: 127.0.0.1:8080
```

```
Client-Response-Num: 1
```

```
X-Powered-By: Servlet/2.5 (Winstone/0.9.10)
```

```
#valid call with existing ID
```

Links

- https://en.wikipedia.org/wiki/List_of_HTTP_status_codes
- <https://www.tutorialspoint.com/servlets/servlets-http-status-codes.htm>
- <https://kodejava.org/how-do-i-send-a-response-status-in-servlet/>