

## 6.1 Specifying Status Codes

As just described, the HTTP response status line consists of an HTTP version, a status code, and an associated message. Since the message is directly associated with the status code and the HTTP version is determined by the server, all a servlet needs to do is to set the status code. A code of 200 is set automatically, so servlets don't usually need to specify a status code at all. When they *do* want to, they use `response.setStatus`, `response.sendRedirect`, or `response.sendError`.

### Setting Arbitrary Status Codes: `setStatus`

When you want to set an arbitrary status code, do so with the `setStatus` method of `HttpServletResponse`. If your response includes a special status code and a document, be sure to call `setStatus` *before* actually returning any of the content with the `PrintWriter`. The reason is that an HTTP response consists of the status line, one or more headers, a blank line, and the actual document, *in that order*. Servlets do not necessarily buffer the document, so you have to either set the status code before using the `PrintWriter` or carefully check that the buffer hasn't been flushed and content actually sent to the browser.

#### Core Approach



*Set status codes **before** sending any document content to the client.*

The `setStatus` method takes an `int` (the status code) as an argument, but instead of using explicit numbers, for readability and to avoid typos, use the constants defined in `HttpServletResponse`. The name of each constant is derived from the standard HTTP 1.1 message for each constant, all upper case with a prefix of `SC` (for *Status Code*) and spaces changed to underscores. Thus, since the message for 404 is Not Found, the equivalent constant in `HttpServletResponse` is `SC_NOT_FOUND`. There is one minor exception, however: the constant for code 302 is derived from the message defined by HTTP 1.0 (Moved Temporarily), not the HTTP 1.1 message (Found).

### Setting 302 and 404 Status Codes: `sendRedirect` and `sendError`

Although the general method of setting status codes is simply to call `response.setStatus(int)`, there are two common cases for which a shortcut method in `HttpServletResponse` is provided. Just be aware that both of these methods throw `IOException`, whereas `setStatus` does not. Since the `doGet` and `doPost` methods already throw `IOException`, this difference only matters if you pass the response object to another method.

- `public void sendRedirect(String url)`

The 302 status code directs the browser to connect to a new location. The `sendRedirect` method generates a 302 response along with a `Location` header giving the URL of the new document. Either an absolute or a relative URL is permitted; the system automatically translates relative URLs into absolute ones before putting them in the `Location` header.

- `public void sendError(int code, String message)`

The 404 status code is used when no document is found on the server. The `sendError` method sends a status code (usually 404) along with a short message that is automatically formatted inside an HTML document and sent to the client.

Setting a status code does not necessarily mean that you omit the document. For example, although most servers automatically generate a small File Not Found message for 404 responses, a servlet might want to customize this response. Again, remember that if you do send output, you have to call `setStatus` or `sendError` *first*.

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