

# HTTP 500 Series Status Codes

## 501 Not Implemented

Definition:

The server does not support the functionality required to fulfill the request.

Use Cases:

- HTTP method not supported (e.g., PATCH on an old server)
- Feature declared but not yet built

Example:

PATCH /api/data -> 501 Not Implemented

Difference from 405:

- 501 = Method not recognized
- 405 = Method recognized but not allowed for that resource

Spring Boot Example:

```
@RequestMapping(value = "/feature-x", method = RequestMethod.POST)
public ResponseEntity<?> featureX() {
    return ResponseEntity.status(HttpStatus.NOT_IMPLEMENTED)
        .body("Feature X is not implemented yet");
}
```

## 502 Bad Gateway

Definition:

The server, while acting as a gateway or proxy, received an invalid response from the upstream server.

Use Cases:

- Server A (proxy) forwards to Server B, but B crashes or gives bad response

Example:

Client -> Proxy -> App Server (crashed) -> 502 Bad Gateway

Fixes:

- Restart upstream servers
- Check network/firewall settings

## 504 Gateway Timeout

Definition:

The server, while acting as a gateway or proxy, did not receive a timely response from the upstream server.

Use Cases:

- Backend is too slow or down
- Network latency issues

Example:

Client -> Proxy -> App Server (hangs) -> 504 Gateway Timeout

Fixes:

- Optimize backend performance
- Increase timeout settings

## 505 HTTP Version Not Supported

Definition:

The server does not support the HTTP protocol version used in the request.

Use Cases:

- Client uses unsupported HTTP/0.9, HTTP/2, or HTTP/3 on a legacy server

Example:

GET /index.html HTTP/2.0 -> 505 HTTP Version Not Supported

Fix:

Use a supported HTTP version, typically HTTP/1.1