Sec-WebSocket-Key header

- Syntax
- Directives
- Examples
  - WebSocket opening handshake
- Specifications
- Browser compatibility
- See also

The HTTP **Sec-WebSocket-Key** request header is used in the WebSocket opening handshake to allow a client (user agent) to confirm that it "really wants" to request that an HTTP client is upgraded to become a WebSocket.

The value of the key is computed using an algorithm defined in the WebSocket specification, so this *does not provide security*. Instead, it helps to prevent non-WebSocket clients from inadvertently, or through misuse, requesting a WebSocket connection.

This header is automatically added by user agents when a script opens a WebSocket; it cannot be added using the fetch() or XMLHttpRequest.setRequestHeader() methods.

The server's Sec-WebSocket-Accept response header should include a value computed based upon the specified key value. The user agent can then validate this before this before confirming the connection.

Header type	[Request header](https://developer.mozilla.org/en-US/docs/Glossary/Request%20header)
[Forbidden request header](https://developer.mozilla.org/en-US/docs/Glossary/Forbidden%20request%20header)	Yes (`Sec-` prefix)

Syntax

```
Sec-WebSocket-Key: <key>
```

Directives

- `<key>`
  - : The key for this request to upgrade. This is a randomly selected 16-byte nonce that has been base64-encoded and isomorphic encoded. The user agent adds this when initiating the WebSocket connection.

Examples

WebSocket opening handshake

The client will initiate a WebSocket handshake with a request like the following. Note that this starts as an HTTP `GET` request (HTTP/1.1 or later), in addition to `Sec-WebSocket-Key`, the request includes the Upgrade header, indicating the intent to upgrade from HTTP to a WebSocket connection.

```
GET /chat HTTP/1.1
Host: example.com:8000
Upgrade: websocket
Connection: Upgrade
Sec-WebSocket-Key: dGhlIHNhbXBsZSBub25jZQ==
Sec-WebSocket-Version: 13
```

The response from the server should include the `Sec-WebSocket-Accept` header with a value that is calculated from the `Sec-WebSocket-Key` header in the request, and confirms the intent to upgrade the connection to a WebSocket connection:

```
HTTP/1.1 101 Switching Protocols
Upgrade: websocket
Connection: Upgrade
Sec-WebSocket-Accept: s3pPLMBiTxaQ9kYGzzhZRbK+xOo=
```

Specifications

Browser compatibility

See also

- Sec-WebSocket-Accept
- Sec-WebSocket-Version
- Sec-WebSocket-Protocol
- Sec-WebSocket-Extensions
- The WebSocket handshake in *Writing WebSocket servers*
- HTTP Protocol upgrade mechanism

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