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The ORIGIN Extension in HTTP/3

Abstract

The ORIGIN frame for HTTP/2 is equally applicable to HTTP/3, but needs to be separately registered. This document describes the ORIGIN frame for HTTP/3.

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1. Introduction

Existing RFCs define extensions to HTTP/2 [[HTTP2](#)] which remain useful in HTTP/3. [Appendix A.2.3](#) of [[HTTP3](#)] describes the required updates for HTTP/2 frames to be used with HTTP/3.

[[ORIGIN](#)] defines the HTTP/2 ORIGIN frame, which indicates what origins are available on a given connection. It defines a single HTTP/2 frame type.

2. Basic Mapping Conventions

3. The ORIGIN HTTP/3 Frame

The ORIGIN HTTP/3 frame allows a server to indicate what origin(s) ([[RFC6454](#)]) the server would like the client to consider as members of the Origin Set ([Section 2.3](#) of [[ORIGIN](#)]) for the connection within which it occurs.

Where HTTP/2 reserves Stream 0 for frames related to the state of the connection, HTTP/3 defines a pair of unidirectional streams called "control streams" for this purpose. Where [[ORIGIN](#)] indicates that the ORIGIN frame should be sent on Stream 0, this should be interpreted to mean the HTTP/3 control stream. The ORIGIN frame is sent from servers to clients on the server's control stream.

The layout and semantics of the frame payload are identical to those of the HTTP/2 frame defined in [[ORIGIN](#)]. The ORIGIN frame type is 0xc (decimal 12), as in HTTP/2.

4. Security Considerations

This document introduces no new security considerations beyond those discussed in [[ORIGIN](#)] and [[HTTP3](#)].

5. IANA Considerations

This document registers a frame type in the "HTTP/3 Frame Type" registry ([HTTP3]).

Frame Type	Value	Specification
ORIGIN	0xc	Section 3

Table 1: Registered HTTP/3 Frame Types

6. References

6.1. Normative References

- [HTTP2] Belshe, M., Peon, R., and M. Thomson, "Hypertext Transfer Protocol Version 2 (HTTP/2)", Work in Progress, Internet-Draft, draft-ietf-httpbis-http2-17, 10 February 2015, <<https://datatracker.ietf.org/doc/html/draft-ietf-httpbis-http2-17>>.
- [HTTP3] Bishop, M., "Hypertext Transfer Protocol Version 3 (HTTP/3)", Work in Progress, Internet-Draft, draft-ietf-quic-http-34, 2 February 2021, <<https://datatracker.ietf.org/doc/html/draft-ietf-quic-http-34>>.
- [ORIGIN] Nottingham, M. and E. Nygren, "The ORIGIN HTTP/2 Frame", RFC 8336, DOI 10.17487/RFC8336, March 2018, <<https://www.rfc-editor.org/rfc/rfc8336>>.

6.2. Informative References

- [RFC6454] Barth, A., "The Web Origin Concept", RFC 6454, DOI 10.17487/RFC6454, December 2011, <<https://www.rfc-editor.org/rfc/rfc6454>>.

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