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**New protocol elements for HTTP Status Code 451
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Abstract

This document recommends additional protocol elements to Hypertext Transfer Protocol (HTTP) status code 451 (defined by [RFC7725](#)).

Discussion of this document was conducted on the Human Rights Protocol Considerations Research Group mailing list <https://www.irtf.org/mailman/listinfo/hrpc> [1], briefly on the HTTPBIS Working Group mailing list ietf-http-wg@w3.org [2] and on <https://lists.ghserv.net/mailman/listinfo/statuscode451> [3].

Status of This Memo

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Table of Contents

- [1. Introduction](#) [2](#)
- [2. New Protocol Elements](#) [2](#)
 - [2.1. Blocking Authority](#) [2](#)
 - [2.2. Geographical Scope of Block](#) [3](#)
- [3. Security Considerations](#) [3](#)
- [4. IANA Considerations](#) [3](#)
- Acknowledgements [3](#)
- [6. References](#) [4](#)
 - [6.1. Normative References](#) [4](#)
 - [6.2. Informative References](#) [4](#)
 - [6.3. URIs](#) [4](#)
- Author's Address [4](#)

1. Introduction

[RFC7725] was standardized by the IETF in February 2016. It defined HTTP status code 451 - to be used when "a server operator has received a legal demand to deny access to a resource or to a set of resources".

This document attempts to outline protocol recommendations that would help make the status code more useful to users.

2. New Protocol Elements

2.1. Blocking Authority

An HTTP response with status code 451 should include a "Link" HTTP header field [[RFC8288](#)] which has a "rel" parameter whose value is "blocking-authority", in addition to the "blocked-by" header specified in [[RFC7725](#)]. It's important to distinguish between the implementer of the block, and the authority that mandated the block in the first place [[ERRATA_ID-5181](#)]. This is because these two organizations might not be the same - a government (the blocking authority) could force an Internet Service Provider (the implementer of the block) to deny access to a certain resource. Both provide essential information about the legal block.

2.2. Geographical Scope of Block

HTTP status code 451 is increasingly being used to deny access to resources based on geographical location. The response should contain a provisional header named "geo-scope-block" that specifies the countries in which a resource is blocked. This scope should correspond to a comma-separated list of alpha-2 country codes defined in [[ISO.3166-1](#)]. The rationale for keeping the geographical scope to country-level granularity is that most blocks are mandated by national governments [[IMPL REPORT](#)], [[AUTOMATIC COUNTRY BLOCK LIST](#)].

3. Security Considerations

This document does not add additional security considerations to [[RFC7725](#)].

4. IANA Considerations

The Link Relation Type Registry should be updated with the following entry:

- Relation Name: blocking-authority
- Description: Identifies the authority that has issued the block.
- Reference: this document

In addition, IANA should be updated with the following provisional header:

- Header field name: geo-scope-block
- Applicable protocol: http
- Status: provisional
- Specification document(s): this document

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6. References

6.1. Normative References

[ERRATA_ID-5181]

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<<https://www.rfc-editor.org/errata/eid5181>>.

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<<https://www.rfc-editor.org/info/rfc7725>>.

[RFC8288] Nottingham, M., "Web Linking", [RFC 8288](#), DOI 10.17487/RFC8288, October 2017,
<<https://www.rfc-editor.org/info/rfc8288>>.

6.2. Informative References

[AUTOMATTIC_COUNTRY_BLOCK_LIST]

"Automattic - Country Block List", 2018,
<<https://transparency.automattic.com/country-block-list/>>.

[IMPL_REPORT]

Abraham, S., Canales, MP., Hall, J., Khurstaleva, O., ten Oever, N., Runnegar, C., and S. Sahib, "Implementation Report for HTTP Status Code 451", 2017,
<<https://tools.ietf.org/html/draft-451-imp-report-00>>.

6.3. URIs

[1] <https://www.irtf.org/mailman/listinfo/hrpc>

[2] <mailto:ietf-http-wg@w3.org>

[3] <https://lists.ghserv.net/mailman/listinfo/statuscode451>

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