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Ambiguity of Uppercase vs Lowercase in RFC 2119 Key Words
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Abstract

RFC 2119 specifies common key words that may be used in protocol specifications. This document aims to reduce the ambiguity by clarifying that only UPPERCASE usage of the key words have the defined special meanings, and by deprecating some versions of the key words.

Status of this Memo

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1. Introduction

RFC 2119 specifies common key words, such as "MUST", "SHOULD", and "MAY", that may be used in protocol specifications. It says that those key words "are often capitalized," and that has caused confusion about how to interpret non-capitalized words such as "must" and "should".

This document updates RFC 2119 by clarifying that only UPPERCASE usage of the key words have the defined special meanings. It also reduces wording conflicts by deprecating some synonymous key words. This document will become part of BCP 14 when it is approved. [[RFC-Editor: Please change the previous sentence to "This document is part of BCP 14."]]

1.1. Some Notes for Reviewers (not for publication)

[[RFC-Editor: Please remove this section before publishing.]]

This update is intentionally small and focused, and quite intentionally updates, but does not replace, RFC 2119. The author considers it important to retain the reference to RFC 2119 because of the general familiarity with the number, and to phase in the use of "BCP 14". Note, though, that the References section uses the RFC numbers, not the BCP number. This is because is needs to be clear when a document has adopted this update, and the dual reference to RFC 2119 *and* this document gives that clarity.

The point has been made by some that having case be significant to the meanings of words is unusual and may be a bad idea. There is specific concern about causing confusion to readers whose native languages do not have a distinction between upper and lower case (consider Chinese and Hebrew, for example). The author believes this has been discussed and addressed, and that those maintaining this point are in the rough. That said, it may still be worth continuing the discussion a bit.

There have been suggestions that while we're here we should consider a broader BCP 14 update that also talks about proper use of the key words, when they should not be used, avoiding overuse, and so on. The author agrees, but thinks is best to keep that as a separate effort, as coming to consensus on such an update is likely to be much more difficult, and is likely to take much longer.

2. Clarifying Capitalization of Key Words

The following change is made to [RFC2119]:

=== OLD ===
In many standards track documents several words are used to signify

the requirements in the specification. These words are often capitalized. This document defines these words as they should be interpreted in IETF documents. Authors who follow these guidelines should incorporate this phrase near the beginning of their document:

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC 2119.

=== NEW ===
In many standards track documents several words are used to signify the requirements in the specification. These words are often capitalized, as shown below, but they do not have to be. This document defines how these words are interpreted in IETF documents when the words are capitalized.

- These words can be used as defined here, but it is not required that they be. Specifically, normative text does not require the use of these key words. They are used for clarity and consistency when that is what's wanted, but a lot of normative text does not use them, and does not need to use them.

- The words have the meanings specified herein only when they are capitalized.

- When these words are not capitalized, they have their normal English meanings; this document has nothing to do with them.

Authors who follow these guidelines should incorporate this phrase near the beginning of their document:

> The key words "MUST", "MUST NOT", "SHOULD", "SHOULD NOT", and "MAY" in this document are to be interpreted as described in BCP 14 [RFC2119],[RFCxxxx] when, and only when, they appear capitalized, as shown.

=== END ===

[[RFC Editor: Please replace "RFCxxxx", above, with a reference to this RFC number, and remove this note.]]

3. Deprecating some synonymous key words

To reduce the number of reserved key words, the following key words are deprecated, and no longer have special meanings defined by BCP 14:

REQUIRED, SHALL, SHALL NOT, RECOMMENDED, NOT RECOMMENDED, OPTIONAL

4. IANA Considerations

There are no IANA considerations for this document.

5. Security Considerations

This document is purely procedural, and there are no related security considerations.

6. Normative References

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.

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