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Requirement Keywords in RFC-Style Documents

Abstract

RFCs use a small vocabulary of capitalized keywords -- MUST, SHOULD, MAY, and their negations -- to indicate the strength of a requirement. This document is a short, self-contained summary of the convention, suitable as a primer for readers and authors. It is drawn from [BCP14] and does not replace it.

Status of This Memo

This memo documents an Internet Best Current Practice.

This document is a product of an independent submission. It has been approved for publication by the RFC Editor, but is not a candidate for any level of Internet Standard; see Section 2 of RFC 7841.

Information about the current status of this document, any errata, and how to provide feedback on it may be obtained at https://www.rfc-editor.org/info/rfc0003.

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Table of Contents

Abstract 1
1. Introduction 4
2. The Keywords 4
2.1. MUST, REQUIRED, SHALL 4
2.2. SHOULD, RECOMMENDED 4
2.3. MAY, OPTIONAL 4
3. Usage Conventions 5
4. Security Considerations 5
5. References 5
6. Author's Address 5

1. Introduction

Interoperability between independent implementations depends on a shared understanding of what is required of an implementation, what is recommended, and what is merely permitted. The RFC Series uses a small set of English keywords to make this distinction precise and machine-checkable.

When these words are written in ALL CAPS in an RFC, they carry the specific meanings defined in [BCP14]. When written in lower case they have their ordinary English meaning.

2. The Keywords

2.1. MUST, REQUIRED, SHALL

MUST, or the equivalents "REQUIRED" and "SHALL", mean that the definition is an absolute requirement of the specification. An implementation that does not comply is not a conforming implementation.

MUST NOT, or "SHALL NOT", mean that the definition is an absolute prohibition.

2.2. SHOULD, RECOMMENDED

SHOULD, or "RECOMMENDED", mean that there may exist valid reasons in particular circumstances to ignore this item, but the full implications must be understood and carefully weighed before choosing a different course.

SHOULD NOT, or "NOT RECOMMENDED", carry the same force in the negative direction.

2.3. MAY, OPTIONAL

MAY, or "OPTIONAL", mean that an item is truly optional. One vendor may choose to include it; another may not. Implementations that do not include a particular option MUST be prepared to interoperate with those that do, though perhaps with reduced functionality. Implementations that include the option MUST be prepared to interoperate with those that do not.

3. Usage Conventions

These words SHOULD be used only where they are actually needed to specify a requirement. Authors sometimes overuse them for emphasis; this dilutes their force. If a sentence is not defining a requirement, its key words should not be capitalized.

In particular, imperative sentences describing an algorithm ("the server adds the entry to the cache") do not need capitalized keywords unless the requirement on the implementation is load-bearing.

NOTE: Authors SHOULD include a short paragraph near the start of the document stating that the keywords have their [BCP14] meanings, so that readers of the document are not left to guess.

4. Security Considerations

Misuse of requirement keywords can lead to interoperability failures -- an implementation may believe itself compliant while failing to satisfy what the author intended as a mandatory requirement. Authors SHOULD review their use of capitalized keywords carefully before publication.

5. References

[BCP14] Bradner, S. and B. Leiba, "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, RFC 8174, May 2017

6. Author's Address

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