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Characterization of Proposed Standards  
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## Abstract

[RFC 2026](#) describes the review performed by the IESG on IETF Proposed Standard RFCs and characterizes the maturity level of those documents. This document updates [RFC 2026](#) by providing a current and more accurate characterization of Proposed Standards.

## Status of this Memo

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[1.](#) Introduction

[Editor Note: [ietf@ietf.org](mailto:ietf@ietf.org) is the mailing-list for discussing this draft.]

In the two decades after publication of [RFC 2026](#) [[RFC2026](#)] the IETF has evolved its review processes of Proposed Standard RFCs and thus [RFC 2026 section 4.1.1](#) no longer accurately describes IETF Proposed Standards.

This document only updates the characterization of Proposed Standards from [RFC2026 Section 4.1.1](#) and does not speak to or alter the procedures for the maintenance of Standards Track documents from [RFC 2026](#) and [RFC 6410](#) [[RFC6410](#)]. For complete understanding of the requirements for standardization those documents should be read in conjunction with this document.

[2.](#) IETF Review of Proposed Standards

The entry-level maturity for the standards track is "Proposed Standard". A specific action by the IESG is required to move a specification onto the standards track at the "Proposed Standard"

level.

Initially it was intended that most IETF technical specifications would progress through a series of maturity stages starting with Proposed Standard, then progressing to Draft Standard then, finally, to Internet Standard (see [RFC 2026 section 6](#)). For a number of reasons this progression is not common. Many Proposed Standards are actually deployed on the Internet and used extensively, as stable protocols. This proves the point that the community often deems it unnecessary to upgrade a specification to Internet Standard. Actual practice has been that full progression through the sequence of standards levels is typically quite rare, and most popular IETF

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protocols remain at Proposed Standard. Over time, the IETF has developed a more extensive review process.

IETF Proposed Standards documents have been subject to open development and review by the Internet technical community, generally including a number of formal cross-discipline reviews including, specifically, a security review. This is further strengthened in many cases by implementations and even the presence of interoperable code. Hence IETF Proposed Standards are of such quality that they are ready for the usual market-based product development and deployment efforts into the Internet.

### [3.](#) Characterization of Specifications

The text in the following section replaces [RFC 2026 Section 4.1.1](#). [Section 3.2](#) is a verbatim copy of the characterization of Internet Standards from [RFC 2026 Section 4.1.3](#) and is provided for convenient reference. The text only provides the characterization, process issues for Draft and Internet standards are described in [RFC2026](#) and its updates, specifically [RFC6410](#).

#### [3.1.](#) Characterization of IETF Proposed Standard Specifications

The entry-level maturity for the standards track is "Proposed Standard". A specific action by the IESG is required to move a specification onto the standards track at the "Proposed Standard" level.

A Proposed Standard specification is stable, has resolved known design choices and has received significant community review, and

appears to enjoy enough community interest to be considered valuable.

Usually, neither implementation nor operational experience is required for the designation of a specification as a Proposed Standard. However, such experience is highly desirable, and will usually represent a strong argument in favor of a Proposed Standard designation.

The IESG may require implementation and/or operational experience prior to granting Proposed Standard status to a specification that materially affects the core Internet protocols or that specifies behavior that may have significant operational impact on the Internet.

A Proposed Standard will have no known technical omissions with respect to the requirements placed upon it. Proposed Standards are of such quality that implementations can be deployed in the Internet. However, as with all technical specifications, Proposed Standards may be revised if problems are found or better solutions are identified, when experiences with deploying implementations of such technologies at scale is gathered.

### [3.2.](#) Characteristics of Internet Standards

A specification for which significant implementation and successful operational experience has been obtained may be elevated to the Internet Standard level. An Internet Standard (which may simply be referred to as a Standard) is characterized by a high degree of technical maturity and by a generally held belief that the specified protocol or service provides significant benefit to the Internet community.

### [4.](#) Further Considerations

Occasionally the IETF may choose to publish as Proposed Standard a document that contains areas of known limitations or challenges. In such cases any known issues with the document will be clearly and prominently communicated in the document, for example in the abstract, the introduction, or a separate section or statement.

### [5.](#) Security Considerations

This document does not directly affect the security of the Internet.

## [6.](#) IANA Considerations

There are no actions for IANA.

## [7.](#) References

- [RFC2026] Bradner, S., "The Internet Standards Process -- Revision 3", [BCP 9](#), [RFC 2026](#), October 1996.
- [RFC6410] Housley, R., Crocker, D. and E. Burger, "Reducing the Standards Track to Two Maturity Levels", [BCP 9](#), [RFC 6410](#), October 2011.

## [Appendix A.](#) Acknowledgements

This document is inspired by a discussion at the open microphone session during the technical plenary at IETF 87. Thanks to, in alphabetical order: Jari Arkko, Carsten Bormann, Scott Brim, Spencer Dawkins, Randy Bush, Benoit Claise, Dave Cridland, Adrian Farrel, Stephen Farrel, Subramanian Moonesamy, and Pete Resnick for motivation, input, and review.

John Klensin and Dave Crocker have provided significant contributions.

## [Appendix B.](#) Internet Draft Notes and RFC Editor Instructions

This section is to assist reviewers of this document.

[Editor Note: Please remove this section and its subsections at publication]

### [Appendix B.1.](#) Version 00

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Introduction and motivation

Verbatim copy from [section 4.1.1](#) and 4.1.3 of [RFC2026] of the Proposed and ant Internet Draft characterization into [Section 3.1](#) and [Section 3.2](#)

Modification of paragraphs of the Proposed Standards characterization, namely:

OLD:

A Proposed Standard specification is generally stable, has resolved known design choices, is believed to be well-understood, has received significant community review, and appears to enjoy enough community interest to be considered valuable. However, further experience might result in a change or even retraction of the specification before it advances.

NEW:

A Proposed Standard specification is stable, has resolved known design choices, is well-understood, has received significant community review, and appears to enjoy enough community interest to be considered valuable. However, as with all technical standards, further experience might result in a change or even retraction of the specification in the future.

OLD:

A Proposed Standard should have no known technical omissions with respect to the requirements placed upon it. However, the IESG may waive this requirement in order to allow a specification to advance to the Proposed Standard state when it is considered to be useful and necessary (and timely) even with known technical omissions.

Implementors should treat Proposed Standards as immature specifications. It is desirable to implement them in order to gain experience and to validate, test, and clarify the specification. However, since the content of Proposed Standards may be changed if problems are found or better solutions are identified, deploying implementations of such standards into a disruption-sensitive environment is not recommended.

NEW:

A Proposed Standard will have no known technical omissions with respect to the requirements placed upon it. Proposed Standards are of such quality that implementations can be deployed in the Internet. However, as with all technical specifications, Proposed Standards may be revised if problems are found or better solutions are identified, when experiences with deploying implementations of such technologies

at scale is gathered.

#### [Appendix B.2.](#) Version 00->01

Added "Updates 2026" and added Sean's initial"

Copied the whole characterization paragraph for Internet Standards from 2026, instead of only the line that is the actual characterization itself.

Added the Further Consideration section based on discussion on the mailinglist.

#### [Appendix B.3.](#) Version 01->02

Sharpened the 2nd paragraph of the Introduction to be clear that the scope of the update is limited to [section 4.1.1](#). and that this document should not be read stand-alone.

Refined the "Further Considerations" Sections to express that as part of the process less mature specs are sometimes approved as Proposed Standards but that in those cases the documents should clearly indicate that.

Minor editorial nits, and corrections.

#### [Appendix B.4.](#) Version 02->03

Changed a number of occurrences where IESG review was used to the intended IETF review.

#### [Appendix B.5.](#) Version 03->04

s/In fact, the IETF review is more extensive than that done in most other SDOs/The IETF review is possibly more extensive than that done in most other SDOs/

Minor spelling and style errors.

#### [Appendix B.6.](#) Version 04->05

Comments from the IESG are in: <http://datatracker.ietf.org/doc/draft-kolkman-proposed-standards-clarified/ballot/>

Crocker's comment are in <http://www.ietf.org/mail-archive/web/ietf/current/msg83488.html>

Refinement of the abstract text based on input by Dave Crocker and Pete Resnick

In [Section 2](#) Crocker suggested:

OLD:

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Over time, for a number of reasons, this progression became less common. In response, the IETF strengthened its review of Proposed Standards, basically operating as if the Proposed Standard was the last chance for the IETF to ensure the quality of the technology and the clarity of the Standard Track document. The result was that IETF Proposed Standards approved over the last decade or more have had extensive reviews.

NEW:

For a number of reasons this progression is not common. Many Proposed Standards are actually deployed on the Internet and used extensively, as stable protocols. This proves the point that the community often deems it unnecessary to upgrade a specification to Internet Standard. Actual practice has been that full progression through the sequence of standards levels is typically quite rare, and most popular IETF protocols remain at Proposed Standard. Over time, the IETF has developed a more extensive review process.

In the same section the comparisson with other SDOs triggered quite some comments from the IESG. The following replacement was suggested by Crocker, the reference to security review was based on the ballot write-up by S. Farrel, the text also addresses Claise's point made in his ballot write-up.

OLD:

Because of this change in review assumptions, IETF Proposed Standards should be considered to be at least as mature as final standards from other standards development organizations. The IETF review is possibly more extensive than that done in most other SDOs owing to the cross-area technical review performed by the IETF, exemplified by technical review by the full IESG at the last stage of specification development. That position is further strengthened by the common presence of interoperable running code and implementation before publication as a Proposed Standard.

NEW:

IETF Proposed Standards documents have been subject to open



development and review by the Internet technical community, generally including a number of formal cross-discipline reviews including, specifically, a security review. This is further strengthened in many cases by implementations and even the presence of interoperable code. Hence IETF Proposed Standards are of such quality that they are ready for the usual market-based product development and deployment efforts into the Internet.

In section [Section 3.1](#):

OLD:

design choices, is well-understood, has received significant

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NEW:

design choices and has received significant

RATIONALE: see Crocker's review.

In [Section 4](#):

OLD:

the IETF may, on occasion, publish a specification that still contains areas

NEW:

the IETF may publish a Proposed Standard that still contains

FURTHER:

Minor spelling and style errors

[Appendix B.7](#). Version 05->06

OLD (in section [Section 3](#):

The text in the following section replaces [RFC 2026 Section 4.1.1](#). [Section 3.2](#) is a verbatim copy of the characterization of Internet Standards from [RFC 2026 Section 4.1.3](#) and is provided for convenient reference.

NEW:

The text in the following section replaces [RFC 2026 Section 4.1.1. Section 3.2](#) is a verbatim copy of the characterization of Internet Standards from [RFC 2026 Section 4.1.3](#) and is provided for convenient reference. The text only provides the characterization, process issues for Draft and Internet standards are described in [RFC2028](#) and its updates, specifically [RFC6410](#).

OLD (in section [Section 4](#):

While less mature specifications will usually be published as Informational or Experimental RFCs, the IETF may publish a Proposed Standard that still contains areas for improvement or certain uncertainties about whether the best engineering choices are made. In those cases that fact will be clearly and prominently communicated in the document e.g. in the abstract, the introduction, or a separate section or statement.

NEW:

Occasionally the IETF may choose to publish as Proposed Standard a document that contains areas of known limitations or challenges. In such cases any known issues with the document will be clearly and prominently communicated in the document, for example in the abstract, the introduction, or a separate section or statement.

#### [Appendix B.8](#). Editors versioning info

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