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RFC 8810
Revision to Capability Codes Registration Procedures

Abstract

This document updates RFC 5492 by making a change to the registration procedures for BGP Capability Codes. Specifically, the range formerly designated "Private Use" is divided into three new ranges: "First Come First Served", "Experimental Use", and "Reserved".

Status of This Memo

This is an Internet Standards Track document.

This document is a product of the Internet Engineering Task Force (IETF). It represents the consensus of the IETF community. It has received public review and has been approved for publication by the Internet Engineering Steering Group (IESG). Further information on Internet Standards is available in 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/rfc8810.

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1. Introduction

The Border Gateway Protocol uses a mechanism called "Capability Advertisement" [RFC5492] to enable BGP peers to tell one another about their optional protocol extensions. These so-called "Capabilities" are signaled using code points called "Capability Codes".

[RFC5492] designates the range of Capability Codes 128-255 as "Private Use". Subsequent experience has shown this to be not only useless, but actively confusing to implementors.

Accordingly, this document revises the registration procedures for the range 128-255, as follows, using the terminology defined in [RFC8126]:

128-238: First Come First Served
239-254: Experimental Use
255: Reserved

The procedures for the ranges 1-63 and 64-127 are unchanged, remaining "IETF Review" and "First Come First Served", respectively. The full range for "First Come First Served" is now 64-238.

2. Discussion

The reason for providing an "Experimental Use" range is to preserve a range for use during early development. Although there are few practical differences between "Experimental Use" and "Private Use", the change both makes it clear that code points from this space should not be used

long term or in shipping products and reduces the consumption of the scarce Capability Codes space expended for this purpose. Once classified as "Experimental Use", it should be considered difficult to reclassify the space for some other purpose in the future.

The reason for reserving the maximum value is that it may be useful in the future if extension of the number space is needed.

Since the range 128-255 was formerly designated "Private Use", implementors may have chosen to use code points within that range prior to publication of this document. For this reason, a survey was conducted beginning August 14, 2015 (version 01 of the individual draft [SCUDDER]) to find any such uses. A number were contributed and were used to seed Table 2. Of course, there can be no guarantee that all uses were discovered; however, the likelihood seems high that remaining uses, if any, genuinely do fall under the intended use of "Private Use" and are restricted to some special deployment and are not in wide use. Furthermore, any remaining uses would be no worse than any other code point collision, such as occasionally occurs with code point "squatting", and could be dealt with in the same manner.

3. IANA Considerations

IANA has revised the "Capability Codes" registry as follows.

Reference: [RFC5492] and this document.

Note: The IETF will be the Change Controller for all future registrations.

Registration procedures:

Range	Registration Procedures
1-63	IETF Review
64-238	First Come First Served
239-254	Experimental Use

Table 1

IANA has made the following new allocations within the "Capability Codes" registry:

Value	Description	Reference	Change Controller
128	Prestandard Route Refresh (deprecated)	RFC 8810	IETF
129	Prestandard Outbound Route Filtering (deprecated), prestandard Routing Policy Distribution (deprecated)	RFC 8810	IETF

Value	Description	Reference	Change Controller
130	Prestandard Outbound Route Filtering (deprecated)	RFC 8810	IETF
131	Prestandard Multisession (deprecated)	RFC 8810	IETF
184	Prestandard FQDN (deprecated)	RFC 8810	IETF
185	Prestandard OPERATIONAL message (deprecated)	RFC 8810	IETF
255	Reserved	RFC 8810	IETF

Table 2

4. Security Considerations

This revision to registration procedures does not change the underlying security issues inherent in the existing [RFC5492] and [RFC4271].

5. References

5.1. Normative References

[RFC5492] Scudder, J. and R. Chandra, "Capabilities Advertisement with BGP-4", RFC 5492, DOI 10.17487/RFC5492, February 2009, <https://www.rfc-editor.org/info/rfc5492>.

[RFC8126] Cotton, M., Leiba, B., and T. Narten, "Guidelines for Writing an IANA Considerations Section in RFCs", BCP 26, RFC 8126, DOI 10.17487/RFC8126, June 2017, <https://www.rfc-editor.org/info/rfc8126>.

5.2. Informative References

[RFC4271] Rekhter, Y., Ed., Li, T., Ed., and S. Hares, Ed., "A Border Gateway Protocol 4 (BGP-4)", RFC 4271, DOI 10.17487/RFC4271, January 2006, <https://www.rfc-editor.org/info/rfc4271>.

[SCUDDER] Scudder, J., "Revision to Capability Codes Registration Procedures", Work in Progress, Internet-Draft, draft-scudder-idr-capabilities-registry-change-01, 14 August 2015, <https://tools.ietf.org/html/draft-scudder-idr-capabilities-registry-change-01>.

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