

PCE Working Group
Internet-Draft
Intended status: Standards Track
Expires: September 28, 2017

D. Dhody
Huawei Technologies
D. King
Lancaster University
March 27, 2017

**Experimental Codepoint Allocation for Path Computation Element
communication Protocol (PCEP)
draft-dhody-pce-pcep-exp-codepoints-03**

Abstract

IANA assigns values to the Path Computation Element (PCE) communication Protocol (PCEP) parameters (messages, objects, TLVs). IANA established a new top-level registry to contain all PCEP codepoints and sub-registries. The allocation policy for each new registry is by IETF Consensus.

This document seeks to mark some codepoints for experimental usage of PCEP.

Requirements Language

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 [[RFC2119](#)].

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of [BCP 78](#) and [BCP 79](#).

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF). Note that other groups may also distribute working documents as Internet-Drafts. The list of current Internet-Drafts is at <http://datatracker.ietf.org/drafts/current/>.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

This Internet-Draft will expire on September 28, 2017.

Copyright Notice

Copyright (c) 2017 IETF Trust and the persons identified as the document authors. All rights reserved.

This document is subject to [BCP 78](#) and the IETF Trust's Legal Provisions Relating to IETF Documents (<http://trustee.ietf.org/license-info>) in effect on the date of publication of this document. Please review these documents carefully, as they describe your rights and restrictions with respect to this document. Code Components extracted from this document must include Simplified BSD License text as described in Section 4.e of the Trust Legal Provisions and are provided without warranty as described in the Simplified BSD License.

Table of Contents

1.	Introduction	2
2.	PCEP Messages	3
3.	PCEP Objects	3
4.	PCEP TLVs	3
5.	Handling of unknown experimentation	3
6.	IANA Considerations	4
6.1.	New PCEP Messages	4
6.2.	New PCEP Objects	4
6.3.	New PCEP TLVs	4
7.	Allocation Policy	5
8.	Security Considerations	5
9.	Acknowledgments	5
10.	References	5
10.1.	Normative References	5
10.2.	Informative References	5
Appendix A.	Other Codepoints	6
Authors' Addresses	6

[1.](#) Introduction

The Path Computation Element communication Protocol (PCEP) provides mechanisms for Path Computation Elements (PCEs) to perform path computations in response to Path Computation Clients (PCCs) requests.

In [section 9 of \[RFC5440\]](#), IANA assigns values to the PCEP protocol parameters (messages, objects, TLVs). IANA established a new top-level registry to contain all PCEP codepoints and sub-registries. The allocation policy for each new registry is by IETF Consensus as described in [\[RFC5226\]](#). Specifically, new assignments are made via RFCs approved by the IESG. Typically, the IESG will seek input on prospective assignments from appropriate persons (e.g., a relevant

Working Group if one exists). Early allocation [[RFC7120](#)] provides some latitude for allocation of these code points, but is reserved for features that are considered appropriately stable.

With some recent advancement, there is an enhanced need to experiment with PCEP. It is often necessary to use some sort of number or constant in order to actually test or experiment with the new function, even when testing in a closed environment. In order to run experiment, it is important that the value won't collide not only with existing codepoints but any future allocation.

This document thus set apart some codepoints in PCEP registry and subregistries for experimental usage.

2. PCEP Messages

Some codepoints are requested to be set aside for experimentation with new PCEP messages. The suggested range is 246-255.

3. PCEP Objects

Some codepoints are requested to be set aside for experimentation with new PCEP objects. The suggested range is 224-255.

4. PCEP TLVs

Some codepoints are requested to be set aside for experimentation with new PCEP TLVs. The suggested range is 65280-65535.

5. Handling of unknown experimentation

A PCEP implementation that receives an experimental PCEP message, that it does not recognize, would react as per [section 6.9 of \[RFC5440\]](#) by sending a PCErr message with Error-value=2 (capability not supported).

A PCE that does not recognize an experimental PCEP object, MUST reject the entire PCEP message and MUST send a PCE error message with Error- Type="Unknown Object" or "Not supported object", defined as per [[RFC5440](#)].

As per [section 7.1 of \[RFC5440\]](#), unknown experimental PCEP TLV would be ignored.

6. IANA Considerations

IANA maintains the "Path Computation Element Protocol (PCEP) Numbers" at <<http://www.iana.org/assignments/pcep>>.

6.1. New PCEP Messages

Within this registry IANA maintains a sub-registry for PCEP Messages (see PCEP Messages at <<http://www.iana.org/assignments/pcep>>).

Upon approval of this document, IANA is requested to make the following allocations:

+-----+	+-----+	+-----+
Type	Description	Allocation Policy
+-----+	+-----+	+-----+
246-255	Unassigned	Experimental Use
+-----+	+-----+	+-----+

6.2. New PCEP Objects

Within this registry IANA maintains a sub-registry for PCEP Objects (see PCEP Objects at <<http://www.iana.org/assignments/pcep>>).

Upon approval of this document, IANA is requested to make the following allocations:

+-----+	+-----+	+-----+
Type	Description	Allocation Policy
+-----+	+-----+	+-----+
224-255	Unassigned	Experimental Use
+-----+	+-----+	+-----+

6.3. New PCEP TLVs

Within this registry IANA maintains a sub-registry for PCEP TLVs (see PCEP TLV Type Indicators at <<http://www.iana.org/assignments/pcep>>).

Upon approval of this document, IANA is requested to make the following allocations:

+-----+	+-----+	+-----+
Type	Description	Allocation Policy
+-----+	+-----+	+-----+
65280-65535	Unassigned	Experimental Use
+-----+	+-----+	+-----+

7. Allocation Policy

The allocation policy for the IANA request in [Section 6](#) is "Experimental". As per [\[RFC5226\]](#), IANA does not record specific assignments for any particular use for this policy.

As the experiment/standard progress and an early IANA allocation or RFC publication happens, the IANA defined codepoints are used and experimental code points are freed up.

8. Security Considerations

This document does not introduce any new security considerations to the existing protocol. Refer to [\[RFC5440\]](#) for further details of the specific security measures.

9. Acknowledgments

The authors would like to thank Ramon Casellas, Jeff Tantsura, Adrian Farrel, Jonathan Hardwick, Julien Mueric, Lou Berger, Michael Shroff, and Andrew Dolganow for their feedback and suggestions.

10. References

10.1. Normative References

- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), DOI 10.17487/RFC2119, March 1997, <<http://www.rfc-editor.org/info/rfc2119>>.
- [RFC5440] Vasseur, JP., Ed. and JL. Le Roux, Ed., "Path Computation Element (PCE) Communication Protocol (PCEP)", [RFC 5440](#), DOI 10.17487/RFC5440, March 2009, <<http://www.rfc-editor.org/info/rfc5440>>.

10.2. Informative References

- [RFC5226] Narten, T. and H. Alvestrand, "Guidelines for Writing an IANA Considerations Section in RFCs", [BCP 26](#), [RFC 5226](#), DOI 10.17487/RFC5226, May 2008, <<http://www.rfc-editor.org/info/rfc5226>>.
- [RFC7120] Cotton, M., "Early IANA Allocation of Standards Track Code Points", [BCP 100](#), [RFC 7120](#), DOI 10.17487/RFC7120, January 2014, <<http://www.rfc-editor.org/info/rfc7120>>.

[Appendix A](#). Other Codepoints

Based on the feedback from the WG, it was decided to focus only on the essentials in the scope of this documents. For others, Experiments can use a new experimental TLV/Object instead.

Authors' Addresses

Dhruv Dhody
Huawei Technologies
Divyashree Techno Park, Whitefield
Bangalore, Karnataka 560066
India

EMail: dhruv.ietf@gmail.com

Daniel King
Lancaster University
UK

EMail: d.king@lancaster.ac.uk

