      Experimental Codepoint Allocation for Path Computation Element
                   communication Protocol (PCEP)
                draft-ietf-pce-pcep-exp-codepoints-00

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].

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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

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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.

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