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-----Original Message-----

From: Allison Mankin

Sent: Saturday, November 21, 2009 8:07 AM

To: Dae Young KIM

Cc: Jooran Lee; mankin@psg.com

Subject: FW: Last Call: draft-eastlake-nlpid-iana-considerations (IANA Considerations for NLPIDs) to BCP

Dear Professor Kim and Miss Lee,

I have been asked by the Operations Area Director of the IESG to request review and comment from JTC1 SC6 for the subject candidate for IETF Best Common Practices Document.

The deadline is approximately four weeks from now. As described in the forwarded message, comments should be sent as email to the ietf@ietf.org mailing list or exceptionally to the IESG. Please read the email below for additional information.

I can add that any Last Call comments that SC6 identifies will be given careful and written response.

Best regards,

Allison

-----Original Message-----

From: ietf-announce-bounces@ietf.org

[<mailto:ietf-announce-bounces@ietf.org>] On Behalf Of The IESG

Sent: Wednesday, November 18, 2009 4:04 PM

To: IETF-Announce

Subject: Last Call: draft-eastlake-nlpid-iana-considerations (IANA Considerations for NLPIDs) to BCP

The IESG has received a request from an individual submitter to consider the following document:

- 'IANA Considerations for NLPIDs'
 <draft-eastlake-nlpid-iana-considerations-03.txt> as a BCP

The IESG plans to make a decision in the next few weeks, and solicits final comments on this action. Please send substantive comments to the ietf@ietf.org mailing lists by 2009-12-16. Exceptionally, comments may be sent to iesg@ietf.org instead. In either case, please retain the beginning of the Subject line to allow automated sorting.

The file can be obtained via
<http://www.ietf.org/internet-drafts/draft-eastlake-nlpid-iana-considerations-03.txt>

IESG discussion can be tracked via
https://datatracker.ietf.org/public/pidtracker.cgi?command=view_id&dTag=18692&rfc_flag=0

IETF-Announce mailing list
IETF-Announce@ietf.org
<https://www.ietf.org/mailman/listinfo/ietf-announce>

Network Working Group
Internet-Draft
Intended Status: Best Current Practice
Expires: May 13, 2009

Donald Eastlake 3rd
Stellar Switches
November 14, 2009

IANA Considerations for NLPIDs

<draft-eastlake-nlpid-iana-considerations-03.txt>

Status of This Document

This Internet-Draft is submitted to IETF in full conformance with the provisions of BCP 78 and BCP 79.

This document is intended to become a Best Current Practice. Distribution of this document is unlimited. Comments should be sent to the author.

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Abstract

Some protocols being developed or extended by the IETF make use of the ISO/IEC (International Organization for Standardization / International Electrotechnical Commission) Network Layer Protocol Identifier (NLPID). This document provides NLPID IANA Considerations.

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IANA Considerations for NLPIDs

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IANA Considerations for NLPIDs

1. Introduction

Some protocols being developed or extended by the IETF make use of the ISO/IEC (International Organization for Standardization / International Electrotechnical Commission) Network Layer Protocol Identifier (NLPID).

The term "NLPID" is not actually used in [ISO9577], which refers to one octet IPIs (Initial Protocol Identifiers) and SPIs (Subsequent Protocol Identifiers). While these are two logically separate kinds of one octet identifiers, most values are usable as both an IPI and an SPI. In the remainder of this document, the term NLPID is used for these values.

This document provides NLPID IANA Considerations.

[RFC5226] is incorporated herein except to the extent that there are contrary provisions in this document.

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].

1.1 Acknowledgements

The contributions and support of the following people, listed in alphabetic order, are gratefully acknowledged:

Ayan Banerjee, Dinesh Dutt, Don Fedyk, Russ Housley, Radia Perlman, Dan Romascanu, and Peter Ashwood-Smith.

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2. NLPIDs

[ISO9577] defines one octet network layer protocol identifiers that are commonly called NLPIDs, which is the term used in this document. The registry of NLPID values is maintained by ISO/IEC by updating that document.

NLPIDs are used in a number of protocols. For example, in the `mar$pro.type` field of the multicast address resolution server protocol [RFC2022], the `ar$pro.type` field of the NBMA (Non-Broadcast Multi-Access) next hop resolution protocol [RFC2332] and in the IS-IS Protocols Supported TLV [RFC1195]. See Appendix B.

2.1 Sub-ranges of the NLPID

Sub-ranges of the possible NLPID values are categorized by [ISO9577] for organizations as shown below, primarily for the ISO/IEC (International Organization for Standardization / International Electrotechnical Commission) and the ITU-T (International Telecommunication Union – Telecommunication Standardization Sector):

Code Point	Category
0x00	ISO/IEC
0x01-0x0F	ITU-T
0x10-0x3F	ITU-T Rec. X.25 and ISO/IEC 8208
0x40-0x43	ISO/IEC
0x44	ITU-T
0x45-0x4F	ISO/IEC
0x50-0x6F	ITU-T Rec. X.25 and ISO/IEC 8208
0x70-0x7F	Joint ITU-T and ISO/IEC
0x80	ISO/IEC (see Section 2.2)
0x81-0x8F	ISO/IEC
0x90-0xAF	ITU-T Rec. X.25 and ISO/IEC 8208
0xB0-0xBF	ITU-T
0xC0-0xCF	Potentially available for IANA (see Section 2.3)
0xD0-0xEF	ITU-T Rec. X.25 and ISO/IEC 8208
0xF0-0xFE	Joint ITU-T and ISO/IEC
0xFF	Reserved for an Extension mechanism to be jointly developed by ITU-T and ISO/IEC

2.2 Code Point 0x80

NLPID 0x80 is known as the IEEE (Institute of Electrical & Electronics Engineers) SNAP (SubNetwork Access Protocol) code point. It is followed by five octets, using the IEEE SNAP SAP (Service

Access Point) conventions, to specify the protocol. Those conventions are described in Section 3 of [RFC5342]. In particular, it is valid for such a five-octet sequence to start with the IANA OUI (Organizationally Unique Identifier) followed by two further octets assigned by IANA as provided in [RFC5342]. The same IANA registry is used for such protocol identifiers whether they are planned to be introduced by the 0x80 NLPID or the IEEE SNAP SAP LSAPs (Link-Layer Subnet Access Points) (0xAAAA). Values allocated by IANA may be used in either context as appropriate.

Because of the limited number of NLPID code points available for IANA allocation, use of the IEEE SNAP NLPID is RECOMMENDED rather than allocation of a new single octet NLPID code point.

2.3 NLPIDs Available for IANA Allocation

A limited number of code points are available that could be allocated by IANA under [ISO9577]. Because of this, it is desirable, where practical, to use code point 0x80, as discussed in Section 2.2 above, or to get code points allocated from the ranges categorized to other organizations. For example, code point 0x8E was allocated for IPv6 [RFC2460], although it is in a range of code points categorized for ISO/IEC.

The table below, which includes two new code point allocations made by this document, shows those still available.

Code Point	Status
0xC0	TRILL [TRILL]
0xC1	IEEE 802.1aq [802.1aq]
0xC2-0xCB	Available
0xCC	IPv4 [RFC791]
0xCD-0xCE	Available
0xCF	PPP [RFC1661]

3. IANA Considerations

As long as code points are available, IANA will allocate additional values when required by an IETF Standards Action.

Whenever it allocates an NLPID, IANA will inform the IETF liaison to ISO/IEC JTC1 SC6 (Joint Technical Committee 1, Study Committee 6) [JTC1SC6], or if IANA is unable to determine that IETF liaison, the IAB. The liaison (or the IAB) will then assure that ISO/IEC JTC1 SC6 is informed so that [ISO9577] can be updated since ISO/IEC JTC1 SC6 is the body that maintains [ISO9577]. To simplify this process, it is desirable to maintain an IETF Liaison to ISO/IEC JTC1 SC6.

This document allocates the code points 0xC0 and 0xC1 as shown in Section 2.3 and IANA shall request the liaison (or the IAB) to so inform ISO/IEC JTC1 SC6.

IANA will maintain a web page showing NLPIDs that have been allocated to a protocol being developed or extended by the IETF or are otherwise of interest. The initial state of the web page shall be as shown in Appendix A. IANA will update this web page for (1) NLPIDs allocated by IANA and (2) other allocations or de-allocations when IANA is requested to make such changes in this web page by the IETF liaison mentioned above.

4. Security Considerations

This document is concerned with allocation of NLPIDs. It is not directly concerned with security.

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5. Normative References

- [IS09577] Information technology – Protocol identification in the network layer, ISO/IEC TR 957:1999(E)7, 1999-12-15.
- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.
- [RFC5226] Narten, T. and H. Alvestrand, "Guidelines for Writing an IANA Considerations Section in RFCs", BCP 26, RFC 5226, May 2008.
- [RFC5342] Eastlake 3rd., D., "IANA Considerations and IETF Protocol Usage for IEEE 802 Parameters", BCP 141, RFC 5342, September 2008.

6. Informative References

- [802.1aq] Standard for Local and Metropolitan Area Networks / Virtual Bridged Local Area Networks / Amendment 9: Shortest Path Bridging, Draft IEEE P802.1aq/D2.1, 21 August 2009.
- [JTC1SC6] ISO/IEC JTC1 SC6 (International Organization for Standardization / International Electrotechnical Commission, Joint Technical Committee 1, Study Committee 6), http://www.iso.org/iso/iso_technical_committee.html?commid=45072
- [RFC791] Postel, J., "Internet Protocol", STD 5, RFC 791, September

1981.

- [RFC1195] Callon, R., "Use of OSI IS-IS for routing in TCP/IP and dual environments", RFC 1195, December 1990.
- [RFC1661] Simpson, W., Ed., "The Point-to-Point Protocol (PPP)", STD 51, RFC 1661, July 1994.
- [RFC1707] McGovern, M. and R. Ullmann, "CATNIP: Common Architecture for the Internet", RFC 1707, October 1994.
- [RFC2022] Armitage, G., "Support for Multicast over UNI 3.0/3.1 based ATM Networks", RFC 2022, November 1996.
- [RFC2332] Luciani, J., Katz, D., Piscitello, D., Cole, B., and N. Doraswamy, "NBMA Next Hop Resolution Protocol (NHRP)", RFC 2332, April 1998
- [RFC2460] Deering, S. and R. Hinden, "Internet Protocol, Version 6 (IPv6) Specification", RFC 2460, December 1998.

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- [TRILL] Radia, P., Eastlake, D., Dutt, D., Gai, S., and Ghanwani, A., "RBriges: Base Protocol Specification", draft-ietf-trill-rbridge-protocol-14.txt, Work in Progress, October 2009.

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Appendix A: Initial IANA Web Page

NLPIDs of Interest

Code Point	Use
0x00	Null
0x80	IEEE SNAP (RFC this document)
0x81	ISO CLNP (Connectionless Network Protocol)
0x82	ISO ES-IS
0x83	IS-IS (RFC 1195)
0x8E	IPv6 (RFC 2460)
0xC0	TRILL (draft-ietf-trill-rbridge-protocol)
0xC1	IEEE 802.1aq
0xCC	IPv4 (RFC 791)
0xCF	PPP (RFC 1661)

Note: According to [RFC1707], NLPID 0x70 was assigned to IPv7. That assignment appears to no longer be in effect as it is not listed in ISO/IEC 9577. IPv7 was itself a temporary code point assignment made while a decision was being made between three candidates for the next generation of IP after IPv4. Those candidates were assigned IPv6, IPv7, and IPv8. IPv6 was selected.

RFC Editor Note: In "(RFC this document)" above, "this document" should be replaced with the RFC number assigned to this document and this paragraph deleted before publication.

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Appendix B: RFC References to NLPID

The following RFCs, issued before the end of March 2009, excluding other survey RFCs and obsolete RFCs, reference the NLPID as such:

- RFC 1195 Use of OSI IS-IS for Routing in TCP/IP and Dual Environments
- RFC 1356 Multiprotocol Interconnect on X.25 and ISDN in the Packet Mode

RFC 1377 The PPP OSI Network Layer Control Protocol (OSINLCP)
RFC 1661 The Point-to-Point Protocol (PPP)
RFC 1707 CATNIP: Common Architecture for the Internet
RFC 1755 ATM Signaling Support for IP over ATM
RFC 2022 Support for Multicast over UNI 3.0/3.1 based ATM Networks
RFC 2332 NBMA Next Hop Resolution Protocol (NHRP)
RFC 2337 Intra-LIS IP multicast among routers over ATM using Sparse
Mode PIM
RFC 2363 PPP Over FUNI
RFC 2390 Inverse Address Resolution Protocol
RFC 2427 Multiprotocol Interconnect over Frame Relay
RFC 2590 Transmission of IPv6 Packets over Frame Relay Networks
Specification
RFC 2684 Multiprotocol Encapsulation over ATM Adaptation Layer 5
RFC 2955 Definitions of Managed Objects for Monitoring and
Controlling the Frame Relay/ATM PVC Service Interworking
Function
RFC 3070 Layer Two Tunneling Protocol (L2TP) over Frame Relay
RFC 5308 Routing IPv6 with IS-IS

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