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Licklider Transmission Protocol (LTP) and Compressed Bundle Header Encoding (CBHE) IANA Registries
draft-dtnrg-ltp-cbhe-registries-00

Abstract

The DTNRG research group has defined the experimental Licklider Transmission Protocol (LTP) **[RFC5326]** and the Compressed Bundle Header Encoding (CBHE) **[RFC6260]** mechanism for the 'ipn' URI scheme. Both documents describe fields that are subject to a registry. For the purpose of its research work, the group has created ad-hoc registries. As the specifications are stable and have multiple interoperable implementations, the group would like to hand off the registries to IANA for official custody. This document describes the actions needed to be executed by IANA.

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 **RFC 2119** [RFC2119].

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1. Introduction

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The DTNRG research group has defined the Licklider Transmission Protocol (LTP)**[RFC5326]**. LTP contains certain fields that are subject to a registry. For the purpose of its research work, the group has created ad-hoc registries. As the specifications are stable and have multiple interoperable implementations, the group would like to hand off the registries to IANA for official custody. This document describes the actions needed to be executed by IANA.

The Compressed Bundle Header Encoding (CBHE) **[RFC6260]** specification defines the concepts of Node Number and Service Number in the 'ipn' URI scheme. In this document we request formation of an IANA registry for the Node Number field in the 'ipn' scheme. There is a separate Internet Draft that will (if approved) establish a registry for the service-nbr portion and relate entries there to a corresponding registry for the 'dtn' URI scheme.

Because of its association with space communication and the Consultative Committee on Space Data Systems **[CCSDS]**, a portion of the CBHE Node Number space and a portion of the LTP Engine ID space is delegated by this document to the CCSDS Space Assigned Numbers Authority **[SANA]**. SANA functions similarly to IANA in that it maintains registries of managed values, with a focus on values used by protocols used by CCSDS member agencies.

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2. Licklider Transmission Protocol

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The Licklider Transmission Protocol has fields requiring registries managed by IANA.

2.1. LTP Engine ID

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The Licklider Transmission Protocol has an LTP Engine ID field (section 2 of **[RFC5326]**). An IANA registry shall be set up as follows.

The registration policy for this registry is:

0
: Reserved

1 -- (2**14)-1
: Expert review required. The designated experts for the review are the chairs of the IRTF DTN Research Group (dtnrg) if the dtnrg is extant, or as determined by the IRSG.

(2**14) -- (2**21)-1
: Allocated to the Space Assigned Numbers Authority (SANA) for use by Consultative Committee for Space Data Systems (CCSDS) missions.

(2**21) -- (2**27)-1
: Private or experimental use. No assignment by IANA.

(2**27) -- (2**42)-1
: First-come, First-Served for requests for less than or equal to 2**14 values. Expert review for requests of more than 2**14 values. The designated experts for the review are the chairs of the IRTF DTN Research Group (dtnrg) if the dtnrg is extant, or as determined by the IRSG.

>= (2**42)
: Reserved

The LTP Engine ID is expressed as a Self-Delimiting Numeric Value (SDNV) in the LTP protocol and no maximum is specified in the protocol definition.

Initial values for the LTP Engine Numbers Registry:

Value	Description	Reference
0	Reserved	This document
1--(2**14)-1	Unassigned	This document
(2**14)--(2**21)-1	Managed by CCSDS SANA	This document
(2**21)--(2**27)-1	Private/Experimental Use	This document
(2**27)--(2**42)-1	Unassigned	This document
>=(2**42)	Reserved	This document

2.2. LTP Client Service ID

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The Licklider Transmission Protocol has a client service ID number field (section 3.2.1 of **[RFC5326]**). An IANA registry shall be set up as follows.

The registration policy for this registry is:

0
: Reserved

1 -- 127
: Expert review required. The designated experts for the review are the chairs of the IRTF DTN Research Group (dtnrg) if the dtnrg is extant, or as determined by the IRSG.

128 -- 255
: Private or experimental use. No assignment by IANA.

>= 256

Expert review required. The designated experts for the review are the chairs of the IRTF DTN Research Group (dtnrg) if the dtnrg is extant, or as determined by the IRSG.

The LTP Engine ID is expressed as a Self-Delimiting Numeric Value (SDNV) in the LTP protocol and no maximum value is specified in the protocol definition.

LTP Client Service Identifiers Registry:

Value	Description	Reference
0	Reserved	[RFC5326]
1	Bundle Protocol	This document
2--127	Unassigned	This document
128--255	Private / Experimental User	This document
>=256	Unassigned	This document

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3. Compressed Bundle Header Encoding

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The Compressed Bundle Header Encoding specification defines concepts of Node Number' and 'Service Number' that require registries managed by IANA. This document addresses the 'Node Number' registry; a separate document addresses the formation and management of the 'Service Number' registry.

3.1. CBHE Node Numbers

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The Compressed Bundle Header Enoding specification defnes a Node Number (node-nbr) field (section 2.1 of **[RFC6260]**). An IANA registry shall be set up as follows.

The registration policy for this registry is:

0
: Reserved

1 -- (2**14)-1
: Expert review required. The designated experts for the review are the chairs of the IRTF DTN Research Group (dtnrg) if the dtnrg is extant, or as determined by the IRSG.

(2**14) -- (2**21)-1
: Allocated to the Space Assigned Numbers Authority (SANA) for use by Consultative Committee for Space Data Systems (CCSDS) missions.

(2**21) -- (2**27)-1
: Private or experimental use. No assignment by IANA.

(2**27) -- (2**42)-1
: First-come, First-Served for requests for less than or equal to 2**14 values. Expert review for requests of more than 2**14 values. The designated experts for the review are the chairs of the IRTF DTN Research Group (dtnrg) if the dtnrg is extant, or as determined by the IRSG.

>= (2**42)
: Reserved

The CBHE Node Number is expressed as a Self-Delimiting Numeric Value (SDNV) in the CBHE specification. Allowable values for the Node Number range from 1 -- 2**64)-1.

Initial values for the CBHE Node Number Registry:

Value	Description	Reference
0	Reserved	This document
1--(2**14)-1	Unassigned	This document
(2**14)--(2**21)-1	Managed by CCSDS SANA	This document
(2**21)--(2**27)-1	Private/Experimental Use	This document
(2**27)--(2**42)-1	Unassigned	This document
>=(2**42)	Reserved	This document

4. Security Considerations

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This document requests the creation of registries managed by IANA. Thera are no security issues involved. Refer to the Security Considerations section of **[RFC5326]** for security issues with the LTP protocol.

5. IANA Considerations

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IANA is requested to create the registries as described in Sections 2 and 3.

6. Acknowledgements

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The editor would like to thank the following people, in no specific order: Marc Blanchet, Scott Burleigh.

7. References

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7.1. Normative References

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[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels," BCP 14, RFC 2119, March 1997 (TXT, HTML, XML).

[RFC5326] Ramadas, M., Burleigh, S., and S. Farrell, "Licklider Transmission Protocol - Specification," RFC 5326, September 2008 (TXT).

[RFC6260] Burleigh, S., "Compressed Bundle Header Encoding (CBHE)," RFC 6260, May 2011 (TXT).

7.2. Informative References

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[CCSDS] "The Consultative Committee for Space Data Systems, http://www.ccsds.org."

[SANA] "The CCSDS SANA Registry page at http://sanaregistry.org."

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