                     DLEP Lantency Range Extension
                 draft-ietf-manet-dlep-latency-extension-00

Abstract

   This document defines an extension to the DLEP protocol to provide
   the range of latency that may be experienced on a link.

Status of This Memo

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Table of Contents

1. Introduction

   The Dynamic Link Event Protocol (DLEP) is defined in
   [I-D.ietf-manet-dlep]. It provides the exchange of link related
   control information between DLEP peers. DLEP peers are comprised of
   a modem and a router. DLEP defines a base set of mechanisms as well
   as support for possible extensions. This document defines one such
   extension.

   The base DLEP specification includes the Latency metric which
   provides an average latency on a link. This document adds the
   ability to relay the minimum and maximum latency range seen on a
   link. The extension defined in this document is referred to as
   "Latency Range".

   This document defines a new DLEP Extension Type Value in Section 2
   which is used to indicate the use of the extension, and one new DLEP
   Data Items in Section 3.

1.1. Key Words

   The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT",
   "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and
   "OPTIONAL" in this document are to be interpreted as described in BCP
   14, RFC 2119 [RFC2119].

2. Extension Usage and Identification

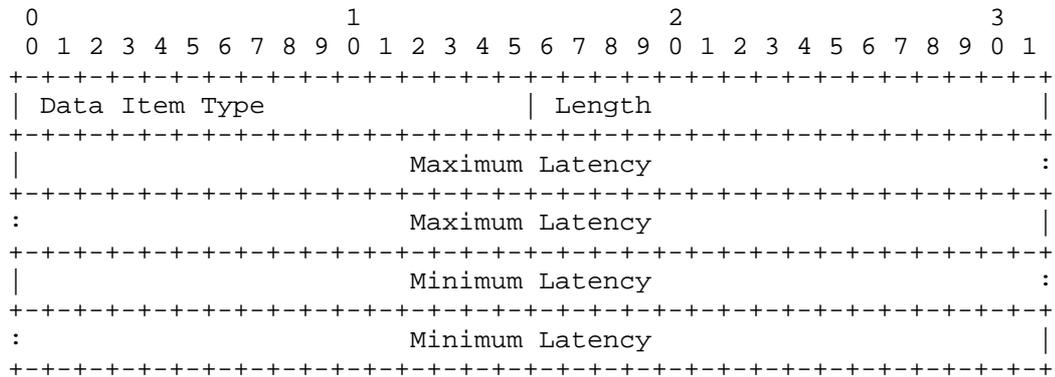   The use of the Latency Range Extension SHOULD be configurable. To
   indicate that the Latency Range Extension is to be used, an
   implementation MUST include the Latency Range Extension Type Value in
   the Extensions Supported Data Item. The Extensions Supported Data
   Item is sent and processed according to [I-D.ietf-manet-dlep].

   The Latency Range Extension Type Value is TBA1, see Section 5.

3. Latency Range Data Items

   The Latency Range Data Item serves much the same purpose as the
   Latency Data Item defined in [I-D.ietf-manet-dlep] with the addition
   of being able to communicate the latency range that may be
   experienced by traffic on a link. The Latency Range Item MAY be
   carried in the same messages and MUST be processed according to the
   same rules as the Latency Range Data Item defined in
   [I-D.ietf-manet-dlep].

   The format of the Latency Range Data Item is:

```
    0                   1                   2                   3
    0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
   +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
   | Data Item Type                | Length                        |
   +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
   |                        Maximum Latency                        :
   +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
   :                        Maximum Latency                        |
   +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
   |                        Minimum Latency                        :
   +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
   :                        Minimum Latency                        |
   +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

   Data Item Type: TBA2

   Length: 16

   Maximum Latency:

      A 64-bit unsigned integer, representing the transmission longest
      delay, in microseconds, that a packet encounters as it is
      transmitted over the link.

   Minimum Latency:

      A 64-bit unsigned integer, representing the transmission shortest
      delay, in microseconds, that a packet encounters as it is
      transmitted over the link.

4. Security Considerations

   The extension introduces a new mechanism for flow control between a
   router and modem using the DLEP protocol. The extension does not
   inherently introduce any additional threats above those documented in
   [I-D.ietf-manet-dlep]. The approach taken to Security in that

document applies equally when running the extension defined in this
document.

5. IANA Considerations

   This document requests the assignment of 2 values by IANA. All
   assignments are to registries defined by [I-D.ietf-manet-dlep].

5.1. Extension Type Value

   This document requests one new assignment to the DLEP Extensions
   Registry named "Extension Tyoe Values" in the range with the
   "Specification Required" policy. The requested value is as follows:

```
                     +------+---------------+
                     | Code | Description   |
                     +------+---------------+
                     | TBA1 | Latency Range |
                     +------+---------------+
```

                  Table 1: Requested Extension Type Value

5.2. Data Item Value

   This document requests one new assignment to the DLEP Data Item
   Registry named "Data Item Values" in the range with the
   "Specification Required" policy. The requested values are as
   follows:

```
                   +-----------+---------------+
                   | Type Code | Description   |
                   +-----------+---------------+
                   | TBA2      | Latency Range |
                   +-----------+---------------+
```

                   Table 2: Requested Data Item Values

6. Normative References

   [I-D.ietf-manet-dlep]
              Ratliff, S., Jury, S., Satterwhite, D., Taylor, R., and (.
              (Unknown), "Dynamic Link Exchange Protocol (DLEP)", draft-
              ietf-manet-dlep-24 (work in progress), July 2016.

   [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>.

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