Summary

• Drafts have been split according to discussions at IETF 101 and 102, unchanged for a very long time
  1. draft-ietf-manet-dlep-credit-flow-control
  2. draft-ietf-manet-dlep-traffic-classification
  3. draft-ietf-manet-dlep-da-credit-extension
  4. draft-berger-manet-dlep-ether-credit-extension

• Questions from the list?
  o Why use TID (and not LID)?
  o Why have extensions with no data items?

• Other questions?

Wrapping up LC ;-) Minor updates in the works (Thanks Ronald!)

Multiple adoption calls
Next Steps

• Identify changes desired by WG?
  o This is a very minimal document, when should we discuss LC?

• If interested in RFC8175 …
  o https://github.com/search?q=dlep
Details As Time Permits
Presented at IETF103

• Now in separate documents
  o Credit Window Control – draft-ietf-manet-dlep-credit-flow-control-03
    • Messages: Credit Control, Credit Control Response
    • Credit Window Data Items: Initialization, Associate, Grant, Status, Request
    • Stan (re) added as co-author
  o Traffic Classification Data Item – draft-ietf-manet-dlep-traffic-classification-00
    • DiffServ Traffic Classification Sub Data Item
    • Ethernet Traffic Classification Sub Data Item
  o No technical changes

• Other documents updated to reflect split
  o No technical changes
  o Use common credit window control and traffic classification data item
  o DiffServ Aware Credit Window Extension – draft-ietf-manet-dlep-da-credit-extension-06
  o IEEE 802.1Q Aware Credit Window Extension – draft-berger-manet-dlep-ether-credit-extension-01
DLEP IEEE 802.1Q Aware Credit Window Extension

• Ethernet Traffic Classification defined in draft-ietf-manet-dlep-traffic-classification
  o Ethernet Traffic Classification Sub Data Item
    
    | Must be two (2) | Length |
    +------------------|--------|
    | Flow Identifier (FID) | NumPCPs| VLAN Identifier (VID) |
    +------------------|--------|
    | Pri. 1 | Pri. 2 | ..... | ..... | ..... | Pad |
    +------------------|

• draft-berger-manet-dlep-ether-credit-extension
  o Defines usage of Ethernet Traffic Classification DI with Credit Window Control
  o Requests IANA Extension Type
    • TBA: IEEE 802.1Q Aware Credit Window
RFC 8651 - Control-Plane-Based Pause Extension

- A simple flow control mechanism
  - Useful when a simple control plane “xon/xoff” capability is good enough
- Modem can send DLEP messages to pause and restart traffic
- May be device wide or per destination
  - To match different link technologies
  - May be DSCP specific
  - For modems with multiple queues
  - Somewhat equivalent to Ethernet PFC, but without C-Tags (VLANs) and flow control is per destination

draft-ietf-manet-dlep-da-credit-extension

- Credit-window flow control
  - More sophisticated flow control, for a wide range of applications
- Modem send initial size and credit grants, routers only send traffic when have credits
- Credit Windows are device wide
  - May be shared across destinations or per destination to match different link technologies
  - Each window maps to a modem logical transmit queue
  - May be DSCP or VLAN+PCP specific
### Credit Window Initialization Data Item

<table>
<thead>
<tr>
<th>Data Item Type</th>
<th>Length (16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Identifier (FID)</td>
<td>Reserved</td>
</tr>
<tr>
<td>Credit Value</td>
<td></td>
</tr>
<tr>
<td>Scale</td>
<td>Credit Window Size</td>
</tr>
</tbody>
</table>

### Traffic Classification Data Item

<table>
<thead>
<tr>
<th>Data Item Type</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic Classification Sub Data Item 1</td>
<td></td>
</tr>
</tbody>
</table>

### DiffServ Credit Window Traffic Classification Sub Data Item

<table>
<thead>
<tr>
<th>Must be two (2)</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Identifier (FID)</td>
<td></td>
</tr>
<tr>
<td>DS Field 2</td>
<td>DS Field n</td>
</tr>
</tbody>
</table>

### Ethernet Credit Window Traffic Classification Sub Data Item

<table>
<thead>
<tr>
<th>TBD</th>
<th>Length (8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Identifier (FID)</td>
<td>NumPCPs</td>
</tr>
<tr>
<td>Pri. 1</td>
<td>Pri. 2</td>
</tr>
</tbody>
</table>

### Credit Window Associate Data Item

<table>
<thead>
<tr>
<th>Data Item Type</th>
<th>Length (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic Class. Identifier (TID)</td>
<td></td>
</tr>
</tbody>
</table>

---

**Simplified DLEP messaging**

- **Session Init**
- **Session Init Response**
- **Session Update**
- **Destination Up**
- **Destination Update**

---

**Operation**

- (Per CW) Credit Window Initialization Data Item is:
- Traffic Classification Data Item:
- DiffServ Credit Window Traffic Classification Sub Data Item:
- Ethernet Credit Window Traffic Classification Sub Data Item:
- Credit Window Associate Data Item:
Credit Window Maintenance

• Credit Grants
  o Destination Up, Destination Announce Response, Destination Update Messages
    • But not destination specific
  o Credit Control Messages, and Credit Control Response Messages

• Credit Status
  o Destination Up Response Message or Credit Control Response Messages

• Credit Window Request
  o Credit Control Messages
Thank you!