

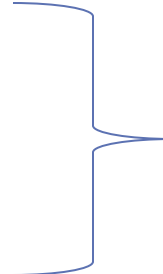
DLEP Extensions Update

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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



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



Multiple adoption calls

- Questions from the list?
 - Why use TID (and not LID)?
 - Why have extensions with no data items?
- Other questions?

Next Steps

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

- If interested in RFC8175 ...
 - <https://github.com/search?q=dlep>

Details As Time Permits

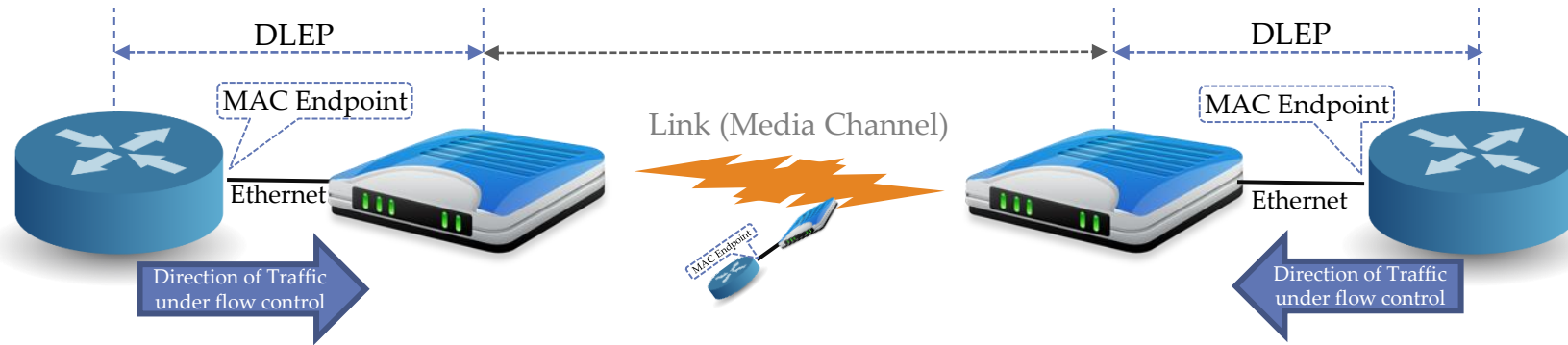
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Presented at IETF103



- Now in separate documents
 - 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
 - Traffic Classification Data Item – [draft-ietf-manet-dlep-traffic-classification-00](#)
 - DiffServ Traffic Classification Sub Data Item
 - Ethernet Traffic Classification Sub Data Item
 - No technical changes
- Other documents updated to reflect split
 - *No technical changes*
 - Use common credit window control and traffic classification data item
 - DiffServ Aware Credit Window Extension – [draft-ietf-manet-dlep-da-credit-extension-06](#)
 - IEEE 802.1Q Aware Credit Window Extension – [draft-berger-manet-dlep-ether-credit-extension-01](#)

Control Plane Based Flow Control



[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

Operation

(Per CW) Credit Window Initialization Data Item is:

Data Item Type	Length (16)
Flow Identifier (FID)	Reserved
	Credit Value
	Credit Value
Scale	Credit Window Size

Traffic Classification Data Item

Data Item Type	Length	
Traffic Class. Identifier (TID)	Num SDIs	Reserved
	Traffic Classification Sub Data Item 1	
	...	
	Traffic Classification Sub Data Item n	

DiffServ Credit Window Traffic Classification Sub Data Item

Must be two (2)	Length	
Flow Identifier (FID)	Num DSCPs	DS Field 1
DS Field 2	...	DS Field n

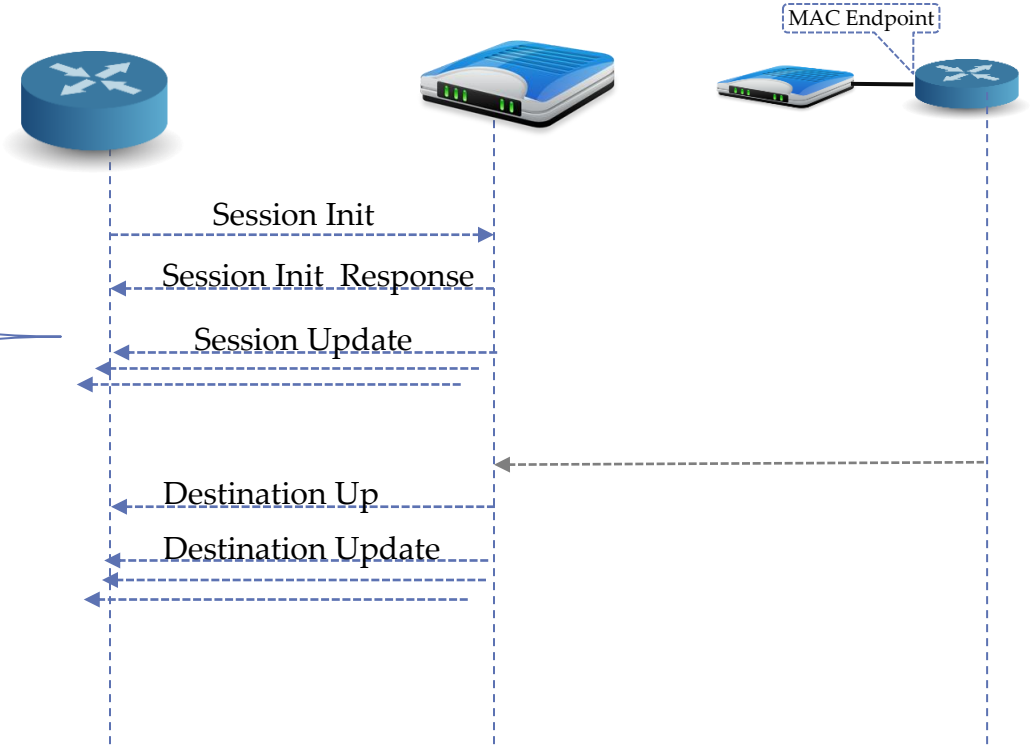
Ethernet Credit Window Traffic Classification Sub Data Item is:

TBD	Length (8)				
Flow Identifier (FID)	NumPCPs	VLAN Identifier (VID)			
Pri. 1	Pri. 2	Pad

Credit Window Associate Data Item is:

Data Item Type	Length (2)
Traffic Class. Identifier (TID)	

Simplified DLEP messaging



Destination messages

Credit Window Maintenance

- Credit Grants

- Destination Up, Destination Announce Response, Destination Update Messages

- But not destination specific

- Credit Control Messages, and Credit Control Response Messages

- Credit Status

- Destination Up Response Message or Credit Control Response Messages

- Credit Window Request

- Credit Control Messages

Credit Window Grant Data Item

```
+++++-----
| Flow Identifier (FID) | Reserved |
+++++-----
| Additional Credits |
+++++-----
:
| Additional Credits |
+++++-----
```

Credit Window Status Data Item

```
+++++-----
| Flow Identifier (FID) | Reserved |
+++++-----
| Credit Window Size |
+++++-----
:
| Credit Window Size |
+++++-----
```

Credit Window Request Data Item

```
+++++-----
| Flow Identifier (FID) | ... |
+++++-----
:
| ... | Credit Window Identifier (CID) |
+++++-----
```

Thank you!

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