

# Extended BFD

draft-mirmin-bfd-extended

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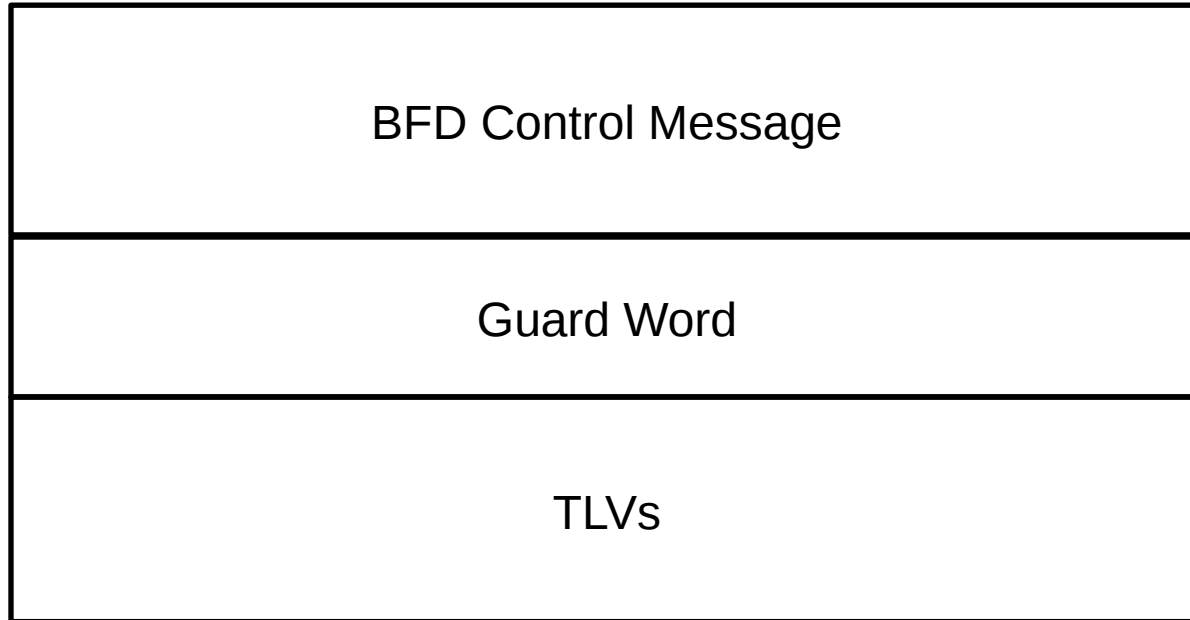
Xiao Min

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# Motivation

- Observed proposals to monitor:
  - quality of a BFD session;
  - performance;
  - path MTU
- Extend BFD beyond continuity checking/ connectivity verification to:
  - ensure backward compatibility;
  - extensibility

# Extended BFD Control Message Format



- BFD Control Message as defined in RFC 5880
- Guard Word – unique four octets long word to identify Sender and Responder
- TLVs - optional

# Capability Negotiation

- No Extended BFD by default
- Capability negotiation using the Poll sequence and the Capability TLV

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



- L – Loss measurement
- D – Delay measurement
- M – Link MTU discovery

# Performance Measurement

- Use Loss and Delay messages defined in RFC 6473:
  - Loss Measurement
    - Direct mode
    - Inferred, a.k.a. synthetic, mode
  - Delay Measurement
    - Explicit timestamp format of a Sender and Responder
  - Combined Loss/Delay Measurement
    - All of the above
- Telemetry query/collection in support of
  - one-way PM
  - direct LM

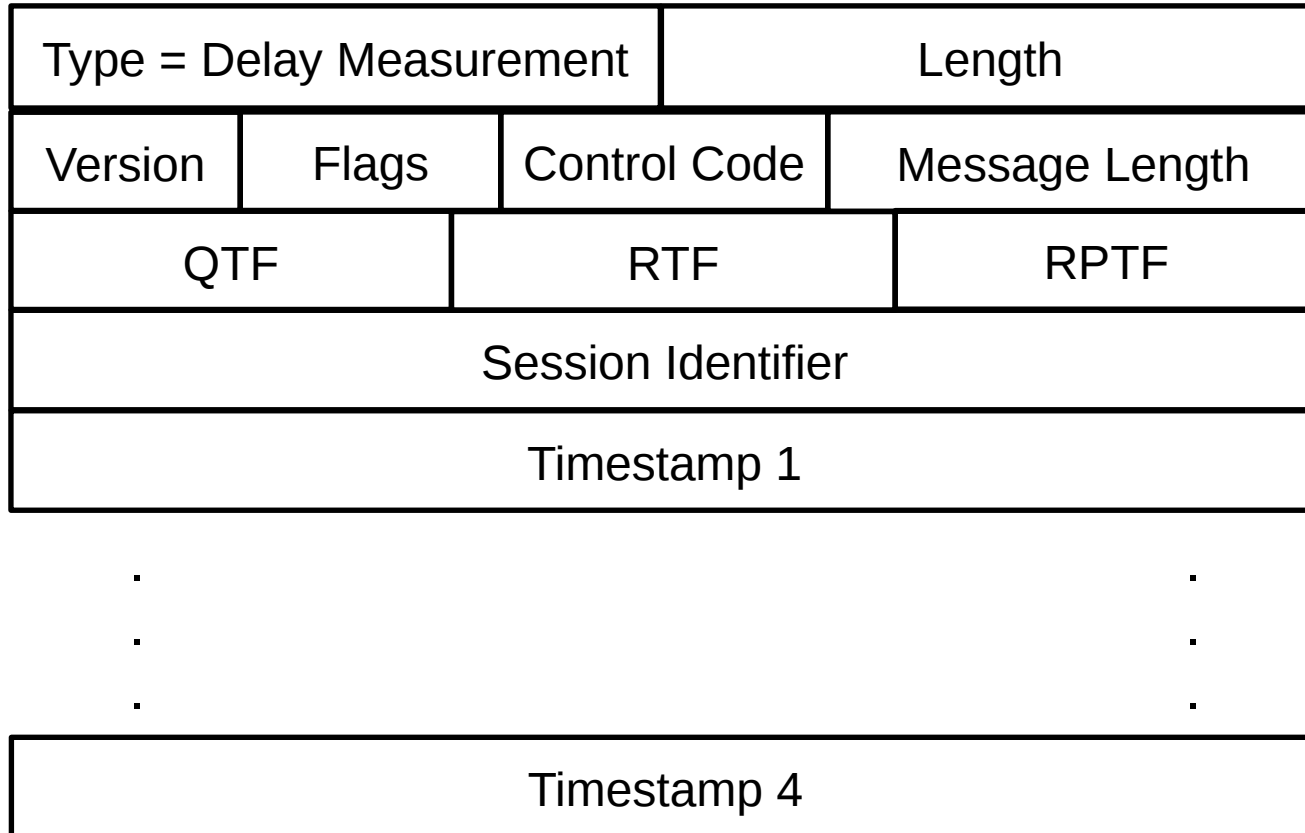
# Loss Measurement

Type = Loss Measurement		Length	
Version	Flags	Control Code	Message Length
DFlags		OTF	
Session Identifier			
Origin Timestamp			
Counter 1			

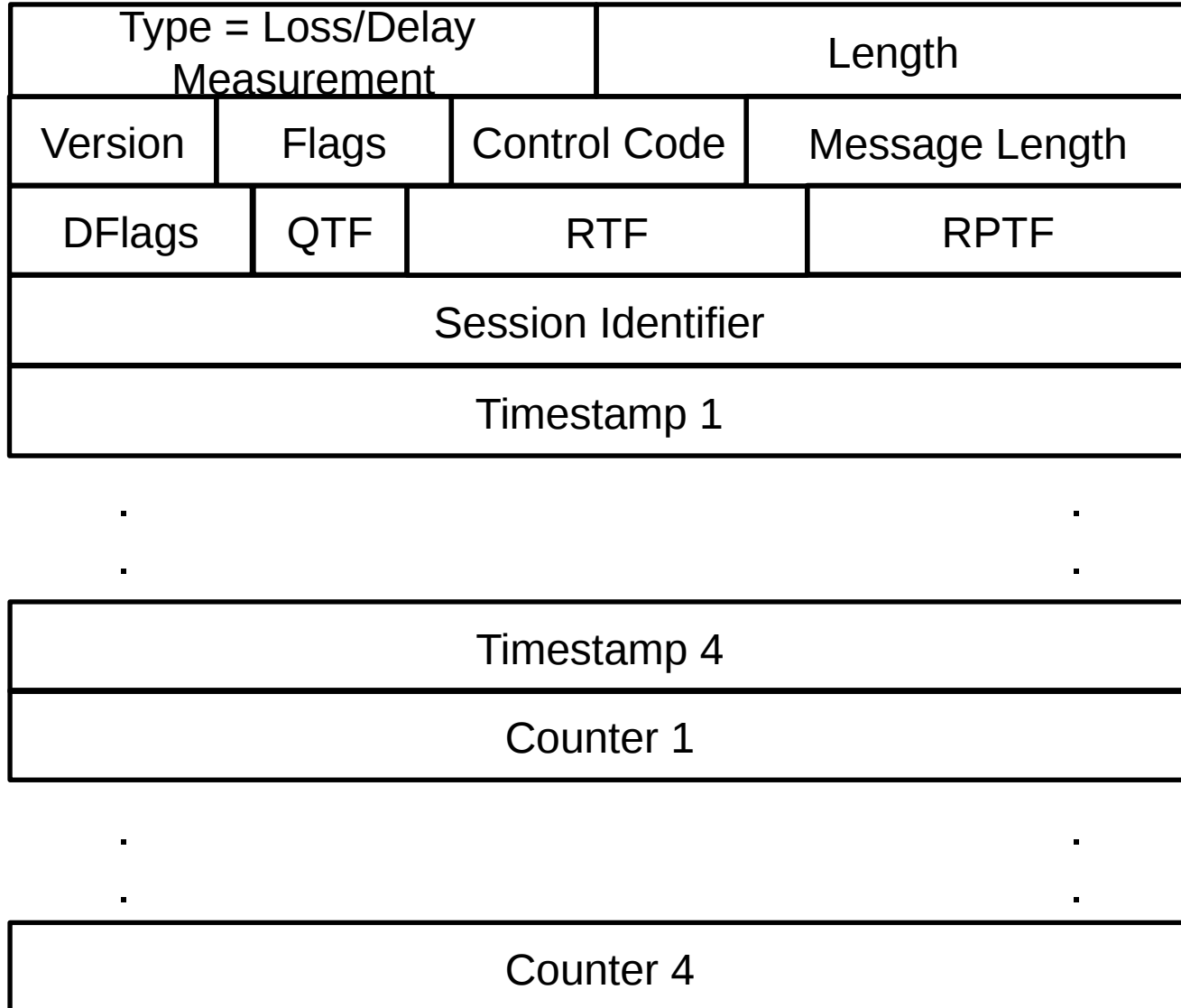
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Counter 4
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# Delay Measurement



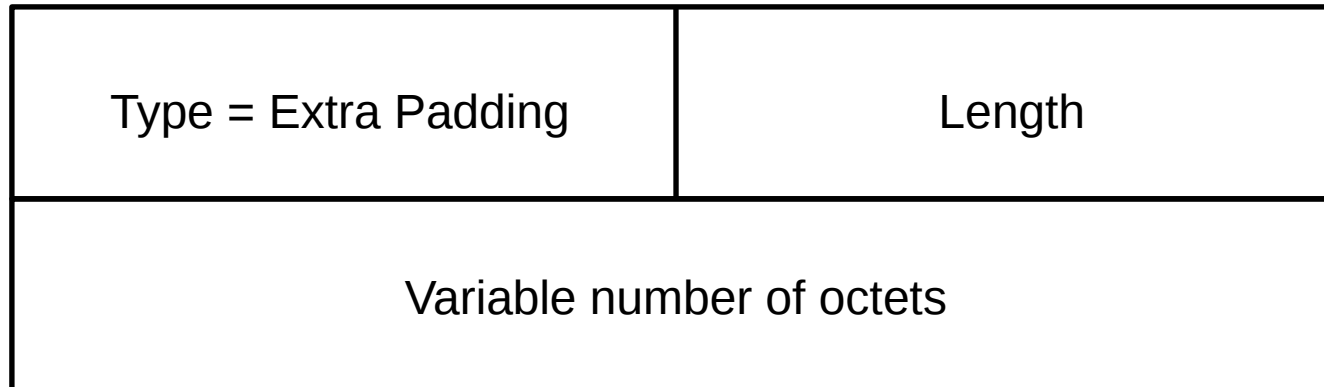
# Combined Loss/Delay Measurement





# Path MTU Monitoring

- Use the Extra Padding TLV



# Next Steps

- Continue adding details
- Discuss, discuss, discuss
- Welcome comments, suggestions, and cooperation