



**DIME WG**

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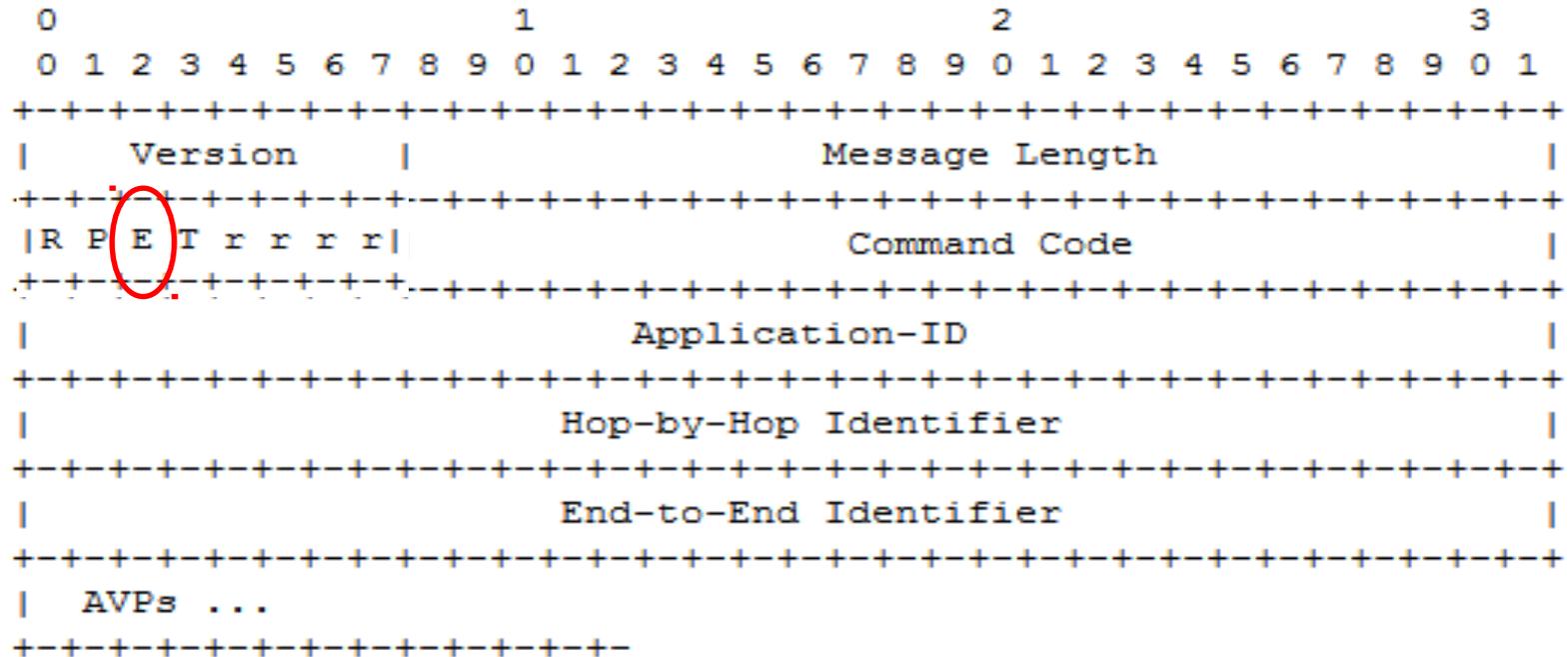
# Update of Diameter Design Guidelines

Friday, July 22<sup>nd</sup> 2016

Presenter: Lionel Morand



# 'E' bit used in RFC6733



E(rror)

If set, the message contains a **protocol error**, and **the message will not conform to the CCF described for this command**.

Messages with the 'E' bit set are commonly referred to as error messages. This bit **MUST NOT** be set in request messages (see Section 7.2).

# Generic answer CCF

The 'E' (Error Bit) in the Diameter header is set **when the request caused a protocol-related error (see Section 7.1.3)**. A message with the 'E' bit MUST NOT be sent as a response to an answer message. Note that a message with the 'E' bit set is still subjected to the processing rules defined in Section 6.2. **When set, the answer message** will not conform to the CCF specification for the command; instead, it and **will conform to the following CCF**:

```
<answer-message> ::= < Diameter Header: code, ERR [, PXY] >  
    0*1< Session-Id >  
        { Origin-Host }  
        { Origin-Realm }  
        { Result-Code }  
        [ Origin-State-Id ]  
        [ Error-Message ]  
        [ Error-Reporting-Host ]  
        [ Failed-AVP ]  
        [ Experimental-Result ]  
        * [ Redirect-Host ]  
          [ Redirect-Host-Usage ]  
          [ Redirect-Max-Cache-Time ]  
        * [ Proxy-Info ]  
        * [ AVP ]
```



# So...

- When a protocol error occurs (e.g. `DIAMETER_UNABLE_TO_DELIVER` (3002) or `DIAMETER_REDIRECT_INDICATION` (3006)) when processing a request (e.g. DER), the answer must not conform to the normal CCF grammar of the answer command (e.g. DEA) but must conform to the grammar given in the section 7.2.
- If an protocol error, no need to generate an full answer complying to the CCF grammar of the answer command
- Not even possible for a Relay



# Recommendations 1/2

- When defining the commands for a new application, it is **RECOMMENDED** to specifically refer to the section 7.2 of [RFC6733] for the CCF specification for the answer command when 'E' bit is set. AVPs that are supposed to be only used when the 'E' bit is set **SHOULD NOT** be included in the definition of new answer commands e.g. Redirect-Host AVP.
- Diameter nodes supporting any application **MUST** expect to receive answer commands that does not comply with the definition given in the application specification, as long as they are compliant with the generic answer command's CCF when the 'E' bit is set.

# Recommendations 2/2

- Protocol implementors SHOULD ensure that some protocol errors are only handled on a per-hop basis and are not forwarded to other peers:
  - `DIAMETER_REDIRECT_INDICATION`
  - If not able to forward the request, the agent SHOULD return a `DIAMETER_UNABLE_TO_DELIVER` to the initiator of the request
  - The same principle for `DIAMETER_TOO_BUSY` and `DIAMETER_LOOP_DETECTED`.



# Other points?

- Other clarifications/recommendations to add

# WG document... SO

- Review
- Comment
- Propose
- Correct
- Dream