CoAP Compression

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Modifications

- Change text to explain the difference between CoAP and UDP/IPv6
- Add OSCORE section
  - Ricardo Andreasen is co-author
Modification

• Explain how each field must be compressed
  – Version: MUST be compressed
  – Type:
    • Explain how to split value in two sets and mapping list
    • Mandate a rule to send RST to client
  – Code:
    • Same as type
    • Mandate a rule to process error codes
Message ID

• Dev is client:
  – Size can be reduced with MSB

• Dev is server:
  – Use a proxy to reduce the size
Token

• Number of active REST transaction

• Two fields
  – Token Length: regular field processed normally by SCHC
  – Token Value: length is given by a specific function TKL
    • This function uses the value a Token Length after decompression
    • Avoid to put directly the size in the Field Length
      – Avoid conflict between a token length value and a field length in the rule

• Token can also be shortened by a proxy
Options: Accept and Content

- recommend mapping list to reduce the size
- If sent, must be viewed as a variable length field (in Bytes)
Size1, Size2, Max-Age, Uri-Host and Uri-Port

• Regular compression
  – Elided
  – Mapping-list/MSB
  – Ignored
Uri-Path and Uri-Query

• Core of CoAP Compression
  – Use position for each elements
  – Each element can be a matching list
• What do we do with /a/b/x and /c/d/x
  – Define a matching list for each element.
    • Reduce compression efficiency (2 bits instead of 1 in the example)
    • Allows unwanted decompression /a/d, /c/b
  – Define a matching list with several elements [“/a/b”, “/c/d”]
    • No modification to SCHC, more complex implementation
    • Position remains the same (x is in position 3)
Uri-Path and Uri-Query (continued)

• Variable length options
  – Use MSB, but
    • MSB unit is in bit
    • Variable unit is in byte
  – Mandate MSB to be a multiple of 8
  – Explained the length coding in the residue

• Ticket #27 -> close?
Proxy-URI and Proxy-Scheme

• Regular compression
  – Equal
  – MSB
  – Matching list
  – Ignore
ETag, If-Match, If-None-Match, Location-Path and Location-Query

• Always ignore
Other RFC/Drafts

• **Block: incompatible with LPWAN?**
  - Both are possible, for SCHC: ignore/value-sent
• **Observe:**
  - Regular compression: MSB, mapping list, ignore
  - Proxy to shorten the value
• **NoResponse:**
  - Regular compression
• **Time Scale:**
  - Regular compression
To do

• Language revision (Ivyalo):
  – Avoid MUST

• More examples?