Group Communication for the Constrained Application Protocol (CoAP)

draft-ietf-core-groupcomm-bis-05

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Goal

› Normative successor of experimental RFC 7390
  – Obsoletes RFC 7390, Updates RFC 7252 / 7641

› New standard reference for implementations now based on RFC 7390

Scope

  – CoAP group communication, including latest features: Observe/Blockwise/Security …
  – Unsecured & group-OSCORE-secured
  – Definition of group types & Secure group configuration
Overview of -05 updates

› Removal of Multi-ETag Option → existing ETag Option seems ok & simpler

› Section added (1.3) to clarify in detail what is Updated / Obsoleted in former RFCs – was #20

› Detailed (2.2.1) how Application Group can be named in Group URI or in CoAP request #28 – pending WG review & approval!
Application Group Naming #28

› Application Group (AG) Name: any string, (integer) number, or URI
› MAY be encoded in Group URI

coap://[COAP_GROUP_ADDR]/g/Group1/light → In path: RECOMMENDED
coap://[COAP_GROUP_ADDR]/light?Group1 → In query
coap://[COAP_GROUP_ADDR]/light?g=Group1
coap://[COAP_GROUP_ADDR]/light?foo=bar&gp=Group1

coap://Group1.example.com/light → In host (part of CoAP Group)
coap://[COAP_GROUP_ADDR]:43210/light → In port (part of CoAP Group)
coap://[COAP_GROUP_ADDR]/light → Not in group URI: can be in a CoAP Option, or implicit
Overview of -05 updates

› Detailed (2.2.3) what kinds of group discovery are possible using CoAP Discovery #29 – pending WG review & approval!

› Stronger advice (4 / 6.1: “NOT RECOMMENDED”) on unsecured group communications – was #22 – ok for WG?

› Editorial improvements & fixes
  (e.g. group relations fix, explain forward/backward security, 6.3 amplification risk, ... )
Non-RD Group Discovery #29

› Discover all AGs part of a CoAP Group ‘CG1’ and CG1 members
   coap://CG1/.well-known/core?href=/g/*  Example

› Discover all realm-local members of AG ‘Group1’
   coap://[ff03::fd]/.well-known/core?href=/grp/Group1  Example

› Discover all AGs of a particular type ‘Type1’ in the mesh and members
   coap://[ff03::fd]/.well-known/core?rt=Type1  Example

(One more example in the I-D. All this: application-specific, i.e. examples only.)
Next steps

› More reviews of the updated parts (diff)!
  – If all’s well we can close #28, #29

› More reviews of entire document? As part of WGLC?
  – Promised @IETF 108: Christian, Francesca

› All review comments (John, Christian) now addressed
  – Current version -05 may be ready for WGLC.
Thank you!

Comments/questions?

https://github.com/core-wg/groupcomm-bis/
Motivation (backup slide)

› RFC 7390 was published in 2014
  – CoAP functionalities available by then were covered
  – No group security solution was available to indicate
  – It is an Experimental document (started as Informational)

› What has changed?
  – More CoAP functionalities have been developed (Block-Wise, Observe)
  – RESTful interface for membership configuration is not really used
  – Group OSCORE provides group end-to-end security for CoAP

› Practical considerations
  – Group OSCORE clearly builds on RFC 7390 normatively
  – However, it can refer RFC 7390 only informationally