Key Management for OSCORE Groups in ACE

draft-ietf-ace-key-groupcomm-oscore-10

Marco Tiloca, RISE
Jiye Park, Universität Duisburg-Essen
Francesca Palombini, Ericsson

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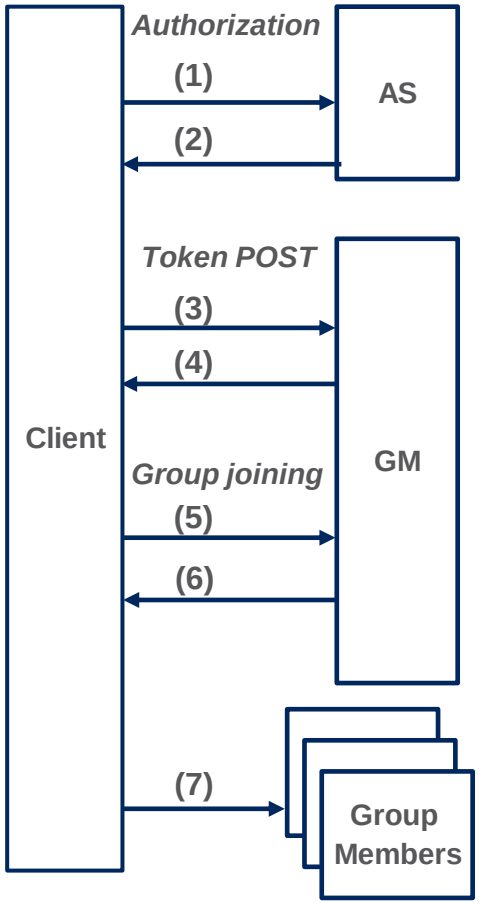
Recap

- Message content and exchanges for:
  - Provisioning keying material to joining nodes and groups (rekeying)
  - Joining an OSCORE group through its Group Manager (GM)
  - More operations for current members at the GM
- Builds on *draf-ietf-ace-key-groupcomm*
  - Agnostic of the ACE transport profile used by C and GM
- Out of Scope:
  - Authorizing access to resources at group members
    - *draft-tiloca-ace-group-oscore-profile*
  - Actual secure communication in the OSCORE group
    - *draft-ietf-core-oscore-groupcomm*



Updates from -10

Aligned with *ace-key-groupcomm*-11 :

- Adopted new format of the '*get_pub_key*' parameter
  - Already added to the Californium implementation
- Improved error handling, using also the new error types
  - Registered error type 7 ("Group currently not active")
  - Additional error situations are handled and replied to, e.g. :
    - Do certain operations when the group is not active
    - Do certain operations that are not admitted for the current role
    - The Group Manager has no available Sender IDs to assign upon request

Updates from -10

Aligned with *ace-key-groupcomm*-11 :

- Possible usage of the extended scope format
  - Registered integer identifier in the “ACE Scope Semantics” registry
- In the Joining Request, ‘control_path’ → ‘control_uri’
- Editorial improvement and renumbering of requirements

Aligned with *core-oscore-groupcomm*-11 :

- The Group Manager can recycle Sender IDs, under a same Group ID
- Removed moot group policies on synchronization of sequence numbers

Open point – Redundant information

- Recent updates to the Group OSCORE security context
  - The COSE capabilities of the used Key Type are now stated only once

- In this document, those capabilities are stated and sent twice
  - We can remove this redundancy here as well. Objections?

General format	OLD CONTENT	NEW CONTENT	
sign_info_entry = [			
…			
sign_parameters : [any],	→ [[+sign alg capab], [+sign_key_type_capab]]	→ [+sign alg capab]	
sign_key_parameters : [any],	→ [+sign_key_type_capab]	[+sign_key_type_capab]	Response from /authz-info
…]			
ecdh_info_entry = [			
…			
ecdh_parameters : [any],	→ [[+ecdh alg capab], [+ecdh_key_type_capab]]	→ [+ecdh alg capab]	
ecdh_key_parameters : [any],	→ [+ecdh_key_type_capab]	[+ecdh_key_type_capab]	
…]			
key = {			
…			
cs_params : [+item],	→ [[+sign alg capab], [+sign_key_type_capab]]	→ [+sign alg capab]	Joining Response
cs_key_params : [+item],	→ [+sign_key_type_capab]	[+sign_key_type_capab]	
… }			

Next steps

- Align with *core-oscore-groupcomm*
  - Remove redundancy about key type capabilities
  - Recycling of Group IDs → Additional logic at the Group Manager
  - Signing keys and Diffie-Hellman keys
    - Comment from Ben [1][2] about the pairwise mode of Group OSCORE; required DH keys are now (derived from) the identity signing keys
    - (a) proof of correctness; or (b) separate provisioning of DH keys
    - Ongoing work on (a); option (b) would need to be in this document

- while (*ace-key-groupcomm* != ready) {
  align with updates in *ace-key-groupcomm ;*
  }

[1] https://mailarchive.ietf.org/arch/msg/core/ujj_I-LlqW9fq__quh-YqKS0fF0/
[2] https://mailarchive.ietf.org/arch/msg/core/YRNXvtiFmHLk5YkXK8-uJg-t3NU/

Thank you!

Comments/questions?

https://github.com/ace-wg/ace-key-groupcomm-oscore