

Diameter Group Signaling

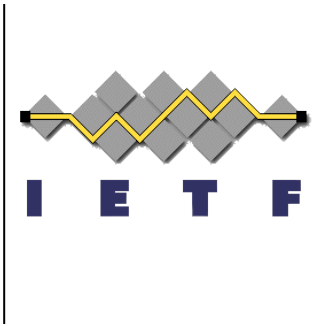
Thursday, August 02nd, 2013

draft-ietf-diameter-group-signaling-01

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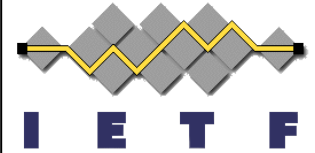
IETF 87
Berlin, Germany





Motivations

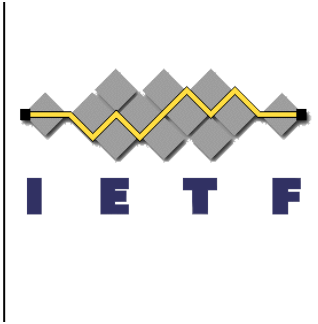
- Reduce signaling in those use cases that require many Diameter sessions to be modified or terminated at the same time
- Add group signaling to existing Diameter applications with minimal impact and ambiguity
- Describe the problem space in an application neutral fashion (guidelines) to aid other SDOs in tackling this problem



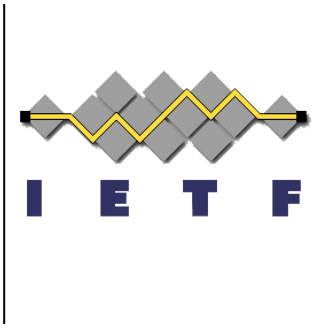
Two Problem Aspects

1. Managing group assignments
 - How to add or remove sessions from groups
 - Guidelines for modifying group assignments
2. Manipulating groups of sessions
 - Defines new formatting of commands for group operations
 - Defines rules how group operations can be applied to session state machines

Document history & work item status



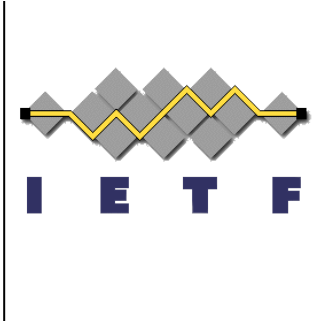
- draft-ietf-dime-group-signaling-00 published in June 2012 (Expired)
- First revision published in July 2013
 - Adopts the WG's current view on how group signaling and operations can be accomplished
 - Move from dedicated bulk commands to re-use of existing commands



SUMMARY OF 1ST REVISION

..AND ADOPTED MECHANISMS FOR DISCUSSION

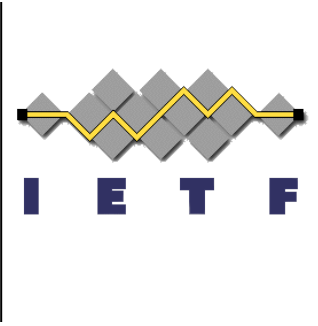
Document intended status and scope



- Document targets Proposed Standard
 - Adds two new AVPs

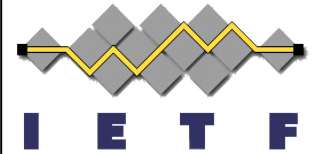
- Provides Guidelines and Examples

Section: Introduction



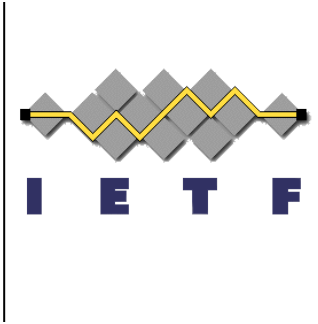
- Revised Introduction, pointing to adopted features
 - Minimal impact to existing applications
 - Extensions of existing commands' CCF with optional AVPs to enable grouping
 - Fallback to single session operation
 - Implicit discovery of capability to support grouping and group operations

Section: Grouping User Sessions



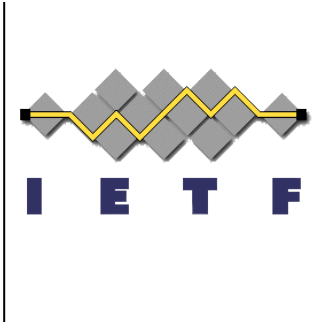
- Group Assignment at Session Initiation
 - Either Diameter peer can assign a session to a group
 - Client can assign session to one or multiple client-assigned group IDs
 - Client can explicitly request server to assign new session to one or multiple server-assigned group IDs
 - Server can accept the one or multiple client-assigned group IDs
 - Server may assign a new session to one or multiple server-assigned group IDs if not requested by a client
 - Overrides Client-assigned group ID(s)
 - Server should assign a new session to one or multiple Server assigned group IDs if requested by a client

Section: Grouping User Sessions



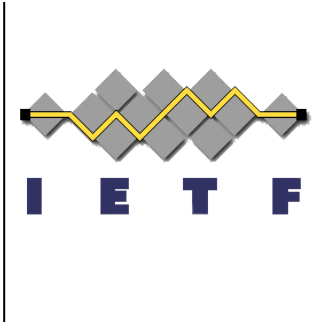
- Mid-session group assignment modifications
 - Either Diameter peer can modify the membership of an active Diameter session
 - Re-Authentication initiated by Client or Server
 - Re-Authentication process performs exchange of previous and new group ID(s)
- More details/text needed about group modifications and removing sessions from groups

Section: Protocol Description



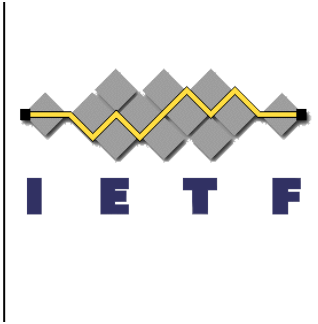
- Session Grouping and implicit Capability Discovery
 - If Diameter client assigns the new session to a group, the Diameter client adds one or multiple Session-Group-ID AVPs
 - Value identifies the group
 - One Session-Group-ID AVP for each group
 - If Diameter client does not assign the new session to a group it must add a single Session-Group-ID AVP with value = 0 to announce its capability to perform group operations to the server
 - If Diameter client does not assign the new session to a group but wants the server to assign the new session to a group it must add a single Session-Group-ID AVP with value = 0 and request server-assigned grouping by a flag in the Session-Group-ID AVP

Section: Protocol Description



- Session Grouping and implicit Capability Discovery
 - If a Diameter server assigns the new session to a group, the Diameter server adds one or multiple Session-Group-ID AVPs
 - Value identifies the group
 - One Session-Group-ID AVP for each group
 - If a Diameter client sends a request to a server with an added Session-Group-ID AVP but receives a response which has no Session-Group-ID AVP added, the Diameter client keeps a log to remember that the server does not support group operations
 - Same procedure for the server to discover that client does not support group operations

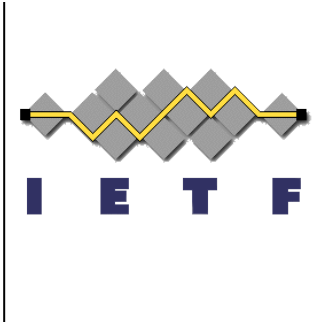
Section: Protocol Description



- Formatting of group commands
 - CCF of existing and new applications re-used
 - Enable group operations by adding one Session-Group-ID AVP per group
 - CCF's mandatory Session-ID AVP must identify a single session being associated with at least one group identified in the added Session-Group-ID AVP
- Single Session Fallback
 - Group-specific AVPs can be ignored or omitted
 - Command is processed solely for the single group identified in the Session-ID AVP

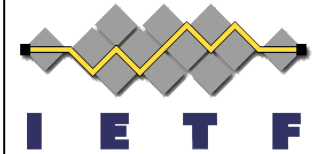
Section:

Attribute-Value-Pairs



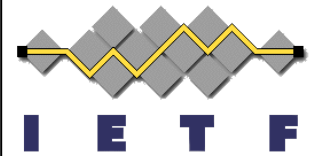
- New AVPs
 - Session-Group-ID AVP
 - Value identifies group
 - Flag identifies explicit request to server to assign new session to group(s)
 - Session-Group-Action AVP
 - Indicates to receiver of a group command how to execute (per-group, per-session)
- Format still to be done

Section: Commands Formatting



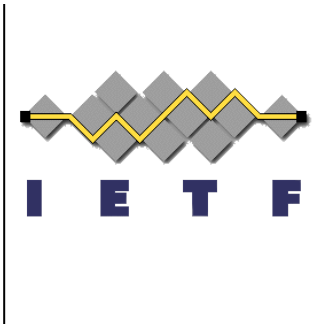
- Example: Group Re-Authentication

```
<RAR> ::= < Diameter Header: 258, REQ, PXY >  
        < Session-Id >  
        { Origin-Host }  
        { Origin-Realm }  
        { Destination-Realm }  
        { Destination-Host }  
        { Auth-Application-Id }  
        { Re-Auth-Request-Type }  
        [ User-Name ]  
        [ Origin-State-Id ]  
        * [ Proxy-Info ]  
        * [ Route-Record ]  
        * [ Session-Group-Id ]  
        [ Session-Group-Action ]  
        * [ AVP ]
```



Open items ..

- Alternative group operations capability discovery proposed by Lionel
 - Supported-Features AVP
- New section '*Guidelines how to treat existing and new Diameter applications*'
 - Impact to M-bit for Group-specific AVPs
- New section '*Inter-working with stateful proxies*'
 - Avoid that single group shared by multiple proxies.
 - Server as common control entity
 - Server may overrule client assignment of group ID
 - Details to be clarified

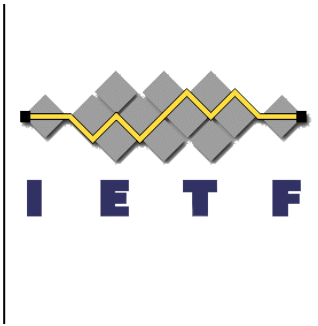


Open items ..

- Do we need something like..

Group Masquerading ?

- Temporarily exclude one or multiple sessions from group
 - Request re-authentication of sub-group without re-building group
 - Positive response to re-authentication request only for sub-group



Next Steps

- Discuss and converge on open items
 - Mailing list
 - Phone conference(s)
- Converge on document scope, structure and technical details asap
 - Please review current version and comment
- Compile and publish 2nd revision
 - Target: mid of September (2013!)
- Progress draft to mature state before Vancouver IETF