Diameter Group Signaling

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draft-ietf-diameter-group-signaling-03

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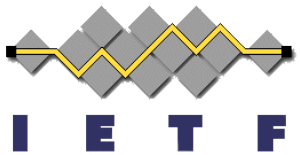
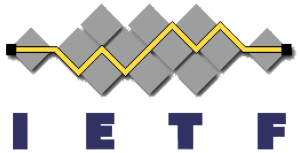


Two Problem Aspects

1. Managing group assignments
   - How to add or remove sessions from groups
   - Guidelines for modifying group assignments

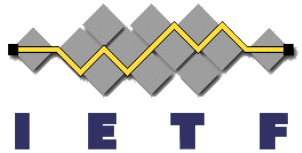
2. Manipulating groups of sessions
   - Defines new AVPs for commands to enable group operations

Summary of changes a per the 3rd revision



- Clarification of group ownership and the identification of a group owner
- Clarification about permission considerations
- Single section about protocol operation details
- Error handling for group commands
- Minor revision of flags in the Session-Group-Feature-Vector AVP
- Dedicated section about considerations when proxy agents are present
- Moved Authorization State Machine to the appendix as example

Group Ownership



- A Diameter node, which creates a new group and assigns an unambiguous identifier to that group, is considered as the group owner

- Group owner identified in the Session-Group-Id AVP
  - Default format must comply to the Session-Id AVP as per RFC6733
  - *DiameterIdentity* element identifies the node, which owns the session group

Permission Considerations

- Permission of a Diameter node..
  - ..to add/remove a session from a group
  - ..to release a session group ID (tear down a session group)

- This draft adopts the most flexible permission model
  - Any node can create a session group
  - Any node can add/remove a session to/from a group
  - Only restriction: Owner of a group can tear down a session group and release its group ID

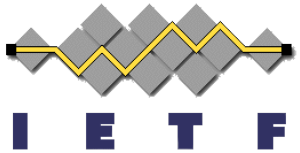
- More constraint permission considerations possible but out of scope of this specification

Protocol Description section

- Single section about detailed ‘Protocol Description’
  - combined Sec. 4 and Sec. 5 of previous draft

- Simplified protocol operation
  - Indication of Client- vs. Server-assigned session group removed from Session-Group-Feature-Vector AVP
  - Group owner identified in an element of the Session-Group-Id AVP
  - Low constraints on session grouping
    - Each node can add/remove sessions to/from one or multiple groups

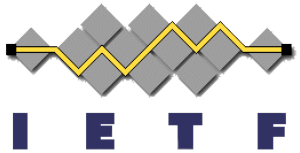
Error handling for group commands



- Error in processing a group command applies to all sessions of one or multiple group
  - → Appropriate protocol error must be returned to the sender
  - → Sender falls back to single-session processing
  - → All groups, for which the group command has been issued, must be closed (tear down)

- Error in processing a group command applies to some sessions of one or multiple session groups
  - → Result-Code AVP indicates DIAMETER_LIMITED_SUCCESS
  - → Each session, for which the command failed, must be identified in a Failed-AVP AVP

AVP Format



Session group identification and group control:

- Session-Group-Info AVP (grouped)
  - Session-Group-Feature-Vector (Unsigned32, interpreted as 32-bit flag field)
  - Session-Group-Id (OctetString)

Specified Session-Group-Feature-Vector values:

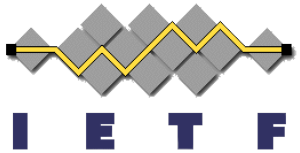
SESSION_GROUP_ALLOCATION_ACTION (0x00000001)

Identified session has been added to the session group (set) or is to be removed from the session group (cleared)

SESSION_GROUP_STATUS_IND (0x00000010)

Session group is active (set) or session group is to be released (cleared)

AVP Format



Treatment of Group Commands:

- Session-Group-Action AVP (Unsiged32)

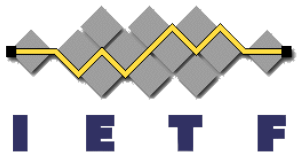
  ALL_GROUPS (1) – Follow up exchanges should be performed with a single message exchange for all impacted groups.

  PER_GROUP (2) – Follow up exchanges should be performed with a message exchange for each impacted group.

  PER_SESSION (3) – Follow up exchanges should be performed with a message exchange for each impacted session.

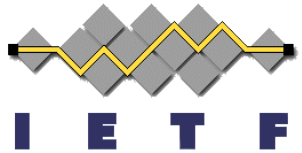
- Example:
  - Single ASR / ASA command applies to multiple groups
  - STR / STA to be performed per session (3) / per identified group (2) / once for all identified groups (1)

Presence of Proxy Agents
..current assumptions



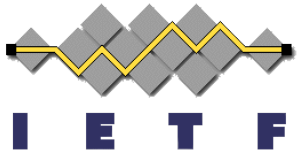
- Proxy Agent is group-aware
- Proxy Agent must reflect the state of each session according to the result of a group command
- In case the agent manipulates session groups, it MUST maintain consistency between client and server
  - E.g. Proxy and Server utilize session grouping, whereas the Client is not group aware

Open discussion items



- Synchronization of session groups between Diameter nodes
  - One Diameter node can solicit a list of all session groups, to which a session has been assigned
  - Should this be covered by the specification?
- Implicit capability discovery for group operations only as fallback in case no external capability discovery available
  - Minor editorial revision required
- Proxy Agents are present – Current assumptions sufficient?
  - Any considerations about stateless Proxy and Relay Agents?

Next Steps



- Solicit reviews and comments
- Enter open items in issue tracker
- Resolve issues and open items
- Target WG LC after IETF90