GeneRic Autonomic Signaling Protocol

draft-ietf-anima-grasp-01

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IETF 94
November 2015

Topics

- Changes since draft-carpenter-anima-gdn-protocol-04
- Open issues
- Discussion, next steps

Changes

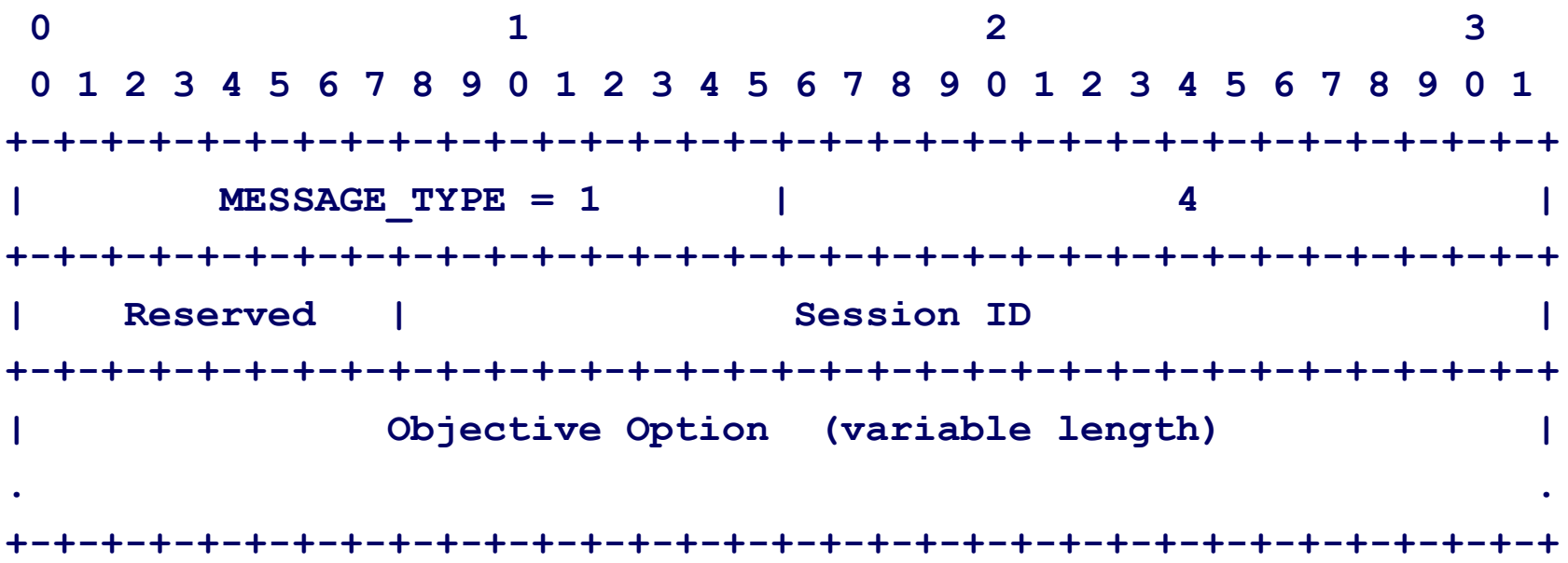
- **draft-ietf-anima-grasp-00:**
  - Changed protocol name
  - Added URL locator type
- **draft-ietf-anima-grasp-01:**
  - Updated requirements
  - Changed from TLV to CBOR format - many detailed changes, added co-author
  - Tightened up loop count and timeouts
  - Noted that GRASP does not provide transactional integrity
  - Various clarifications and editorial fixes

Change to CBOR (1)

- Required reading:
  - Concise Binary Object Representation [RFC7049]
  - CBOR data definition language (CDDL) [draft-greevenbosch-appsawg-cbor-cddl]

Change to CBOR (2)

- Old TLV description of discovery message:



Change to CBOR (3)

- New CBOR description in CDDL:

```
discovery-message =
        [M_DISCOVERY, session-id, objective]
M_DISCOVERY =     ; a defined constant
session-id =    0..16777215
objective /=    ; defined below
```

- Easy to represent in programming languages and to extend or modify.
- Essentially no change in payload size.

Change to CBOR (4)

- Objective description in CDDL:

```
objective /= generic-obj
generic-obj = [objective-name,
      objective-flags, loop-count, ?any]
objective /= vendor-obj
vendor-obj = [{"PEN":pen}, objective-name,
      objective-flags, loop-count, ?any]
```

Open Issues (discovery)

- **(No.18) How to handle multiple discovery responses?**
  - E.g. GRASP choose by default/random
  - E.g. expose list of responses to ASA; ASA decides according to some criteria
- **(24) Do we need "fast withdrawal" of discovery responses?**
  - Situation differs: some response might be valid permanently; some might be imperial
  - Consider add TTL for the Response cache?
- **(new*) Clarify if/when discovery needs to be repeated.**
  - E.g. no response within a certain time (say, 1 min)
- **(30) Random delay in discovery responses to mitigate amplification attacks?**

* *new issues will be numbered in next draft*

Open Issues (security)

- **(new) Mandatory for running in ACP?**
  - Really a challenge to do security without ACP
  - But ACP also needs signalling
- **(27) Security of link-local multicasts (Unsolicited Response).**
  - If GRASP runs in ACP, no worry about this
  - If not in ACP, then need to handle the authentication and authorization of the flooded information
- **(new) Expand discussion of security boundary when running with no ACP.**
  - Might rely on the local PKI infrastructure
- **(new) State that role-based authorization of ASAs is out of scope for GRASP.**
  - GRASP doesn't't recognize/handle any “roles”

Open Issues (general 1)

- **(29) Private Enterprise Number(PEN) is used to distinguish vendor options. Would a domain name be better?**
  - PEN might not make sense for autonomic networking?
  - Domain name might be more beneficial. E.g. for authentication/authorization processing?
- **(new) Reconsider CBOR definition for PEN syntax**
- **(31) Anything else needed for sleeping nodes?**
  - Already specified repeats for failed discovery etc.
  - Force to do Sync when awake from sleeping?
- **(new) Are URL locators really needed?**
  - Renumbering considerations prefer URL

Open Issues (general 2)

- **(new) Is Session ID sufficient to identify relayed responses?**
  - Isn't the originator's address needed too?
- **(new) Clarify that a node will contain one GRASP instance supporting multiple ASAs**
- **(new) Add a "reason" code to the reject option?**
  - E.g. "requirement not fulfilled"
  - Might be useful for human auditing/analysis?
- **(new) Do we need selective flooding to a subset of nodes? (see draft-liu-anima-grasp-distribution)**
  - E.g. flood to nodes support a certain objective
  - E.g. flood to nodes belongs to a specific role or hierarchy

Discussion + next steps

- Next version will settle as many of the open issues as possible.
  - Almost all the “new” issues came from one excellent review by Joel Halpern
- We need more reviews of the draft.
- We need people to think about implementation issues.