

Information Distribution over GRASP

(draft-liu-anima-grasp-distribution-01)

Bing Liu (speaker), Sheng Jiang

@Anima WG, ietf96, July 2016

Look back 00 version

- Technical requirements - Node behavior
 - Flooding behavior
 - loop avoidance
 - Selective Flooding
 - Point to Point exchange
- Technical requirements - Protocol
 - Indicate the distributed information
 - The autonomic nodes need to know which messages are to be distributed.
 - Indicate the selective flooding criteria
 - The node needs to be indicated which interfaces/addresses should be sent the distributed information.

01 version

- Technical requirements - Node behavior
 - Flooding behavior
 - loop avoidance *relevant mechanism added in GRASP-04*
 - Selective Flooding *relevant mechanism added in 01 version*
 - Point to Point exchange
- Technical requirements - Protocol
 - Indicate the distributed information
 - The autonomic nodes need to know which messages are to be distributed. *New “Flood Sync” message in GRASP-02*
 - Indicate the selective flooding criteria
 - The node needs to be indicated which interfaces/addresses should be sent the distributed information. *Added in 01 version*

Selective Flooding Mechanism

- Selective flooding criteria
 - Matching condition: which represents the criteria of the selection (*e.g.* "Device role=IPRAN_RSG")
 - Matching objective: the matching objective is either the node itself or the neighbors (*e.g.* "Neighbors")
 - Action: the action is either continuing the distribution or terminating it (*e.g.* "Distribute")
- Node behavior
 - 1) The distribution initial node includes the Selecting Criteria in the distributed information.
 - [Open Question] Include the criteria in the GRASP message or the distribution content?
 - 2) The receiving node does the matching indicated by the Selecting Flooding Criteria
 - Matching Objective="Neighbors": the node only distributes the information to the neighbors who match the Matching Condition.
 - Matching Objective="Self": if matched, the node terminates the distribution (not flooding it to any of the neighbor)

Open Issues (1/3)

- #1 Do we need selective flooding?
 - Pros
 - Avoid some unnecessary message amplification
 - Better security considerations in some scenarios
 - Cons
 - Additional complexity
 - Consideration
 - Selective flooding could be an advanced feature supported by the GRASP-Distribution-Function
 - Basic GRASP module doesn't need to support it

Open Issues (2/3)

- #2 Lifetime management
 - For short-term content, maybe it's good to include Lifetime?
 - For long-lived content, maybe just wait for the update?
- #3 Verification of Distributed Information
 - Information integrity verification
 - ACP only provides confidentiality
 - Digital signature of the content by the domain certificate?
 - Source authorization verification
 - Verify whether the source is privileged to distribute the content
 - Out of scope?

Open Issues (3/3)

- #4 Autonomic domain boundary
 - Michael B.: ACP has the boundary implication
 - Non-ACP mode out of scope
- #5 Arbitrary Injecting Point
 - Should every node support initial distribution or only part of them?
- #6 Confliction Handling
 - Handle it at the distribution content management level, out of scope of distribution behavior/protocol?
- #7 Verification of Distributed Information
 - Information integrity verification
 - Digital signature of the content?
 - Source authorization verification
 - Out of scope?

Comments?

Thank you!

IETF96, Berlin