Information Distribution in Autonomic Networking
(draft-liu-anima-grasp-distribution-09)

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Reminder

• Information distribution is a function to handle different patterns of information exchange between autonomic nodes
  – Using GRASP as bearing protocol

• Two basic patterns
  – Instant distribution (Synchronous)
    • Point-to-Point (one to one)
    • Flooding/Selective Flooding (one to many)
  – Asynchronous distribution
    • Sub/Pub (one to one/one to many)
    • Distributed Storage (one to one/one to many)
Recall: IETF102

GRASP Extensions:

• Un-solicited Synchronization Message (A new GRASP Message)
• Selective Flooding Option
• Subscription Objective Option
• Un_Subscription Objective Option
• Publishing Objective Option
Revisit: Information Distribution in ANI

Specific ASAs

Function APIs

Common Functions

Other Functions

Information Distribution

Selective Flooding
Event Queue
Data Storage

GRASP APIs (WG Item)

GRASP Extension:
Bulk Transport

GRASP Extensions: Unsolicited Sync/Sub-Pub

GRASP: Discovery/Negotiation/Sync (WG Item)

GRASP Protocol Stack

This draft
Update of 09 version

• Described how Information-Distribution fits into ANI (as previous page)
• Described the “Distributed Storage” function as PUT and GET operations and corresponding messages
Distributed Storage: PUT “Information”

1. PUT (“DATA”)
2. PROJECT (“DATA”) \(\mapsto\) #nodeID
3. Negotiation_Request (Size, SrcID, …) \(\mapsto\) #nodeID
4. Negotiation_Response (“Accept”, …) \(\mapsto\) #SrcID, IF “Rejected”, goto 7
5. Transfer (“DATA”, ...) \(\mapsto\) #nodeID (GRASP Bulk Transport might be needed)
6. Write (“DATA”, ...)
7. Negotiation_Request(Size, SrcID, ...) \(\mapsto\) #nodeID'

GRASP APIs
Distributed Storage: GET “Information”

1. GET (“DATA”)
2. Map (“DATA”) $\rightarrow$ KEY $\equiv$ #nodeID
3. Request (KEY, SrcID, ...) $\rightarrow$ #nodeID
4. Read (“DATA”, ...)
5. Response (“Found”, DATA) $\rightarrow$ #SrcID, IF “NOT Found”, goto 7
6. GET_ACK (“Found”, DATA)
7. Request (KEY, SrcID, ...) $\equiv$ #nodeID’
Next Step

• Request the WG to consider adopting it as a WG item after re-charting
• Make the protocol/option designs more comprehensive
Thank you!

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