

GeneRic Autonomic Signaling Protocol

draft - ietf - anima - grasp - 04

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Topics

- Main changes since draft-ietf-anima-grasp-01
- Prototype code
- Open issues
- Discussion, next steps

Main Changes (1)

- **draft-ietf-anima-grasp-02:**
 - Resolved issues according to WG discussions
 - Added optional error string to DECLINE Option
 - Redefined naming rule for Objectives so that PEN is one option among several others (MUST -> MAY)
 - Added FLOOD & SYNCH messages to simplify the message coding
 - Added initiator id to DISCOVERY, RESPONSE and FLOOD messages

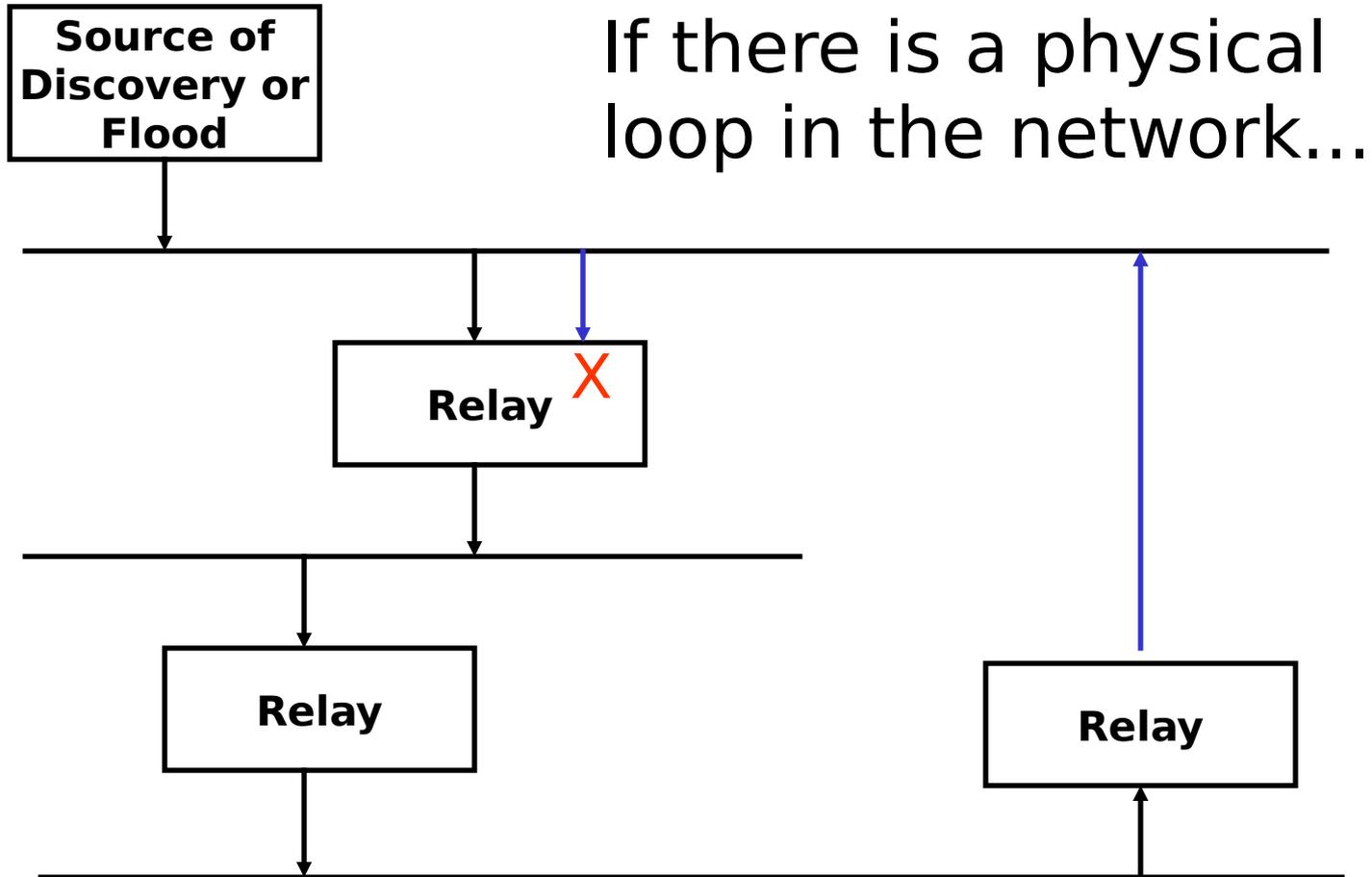
Main Changes (2)

- **draft-ietf-anima-grasp-03:**
 - Split REQUEST message into two (Request Negotiation + Request Synchronization) and updated other message names for clarity.
 - Removed initiator id from DISCOVERY, RESPONSE and FLOOD messages
- **draft-ietf-anima-grasp-04:**
 - Added initiator id to DISCOVERY, RESPONSE and FLOOD messages and finally made the loop detection for relayed multicasts correct.

Current message names

- Discovery (link-local multicast)
Discovery Response
- Request Synchronization
Synchronization
- Flood Synchronization (link-local multicast)
- Request Negotiation
Negotiation
Confirm Waiting
Negotiation End
- No Operation Message (only for practical)
Unicast except where noted

Multicast relaying (1)



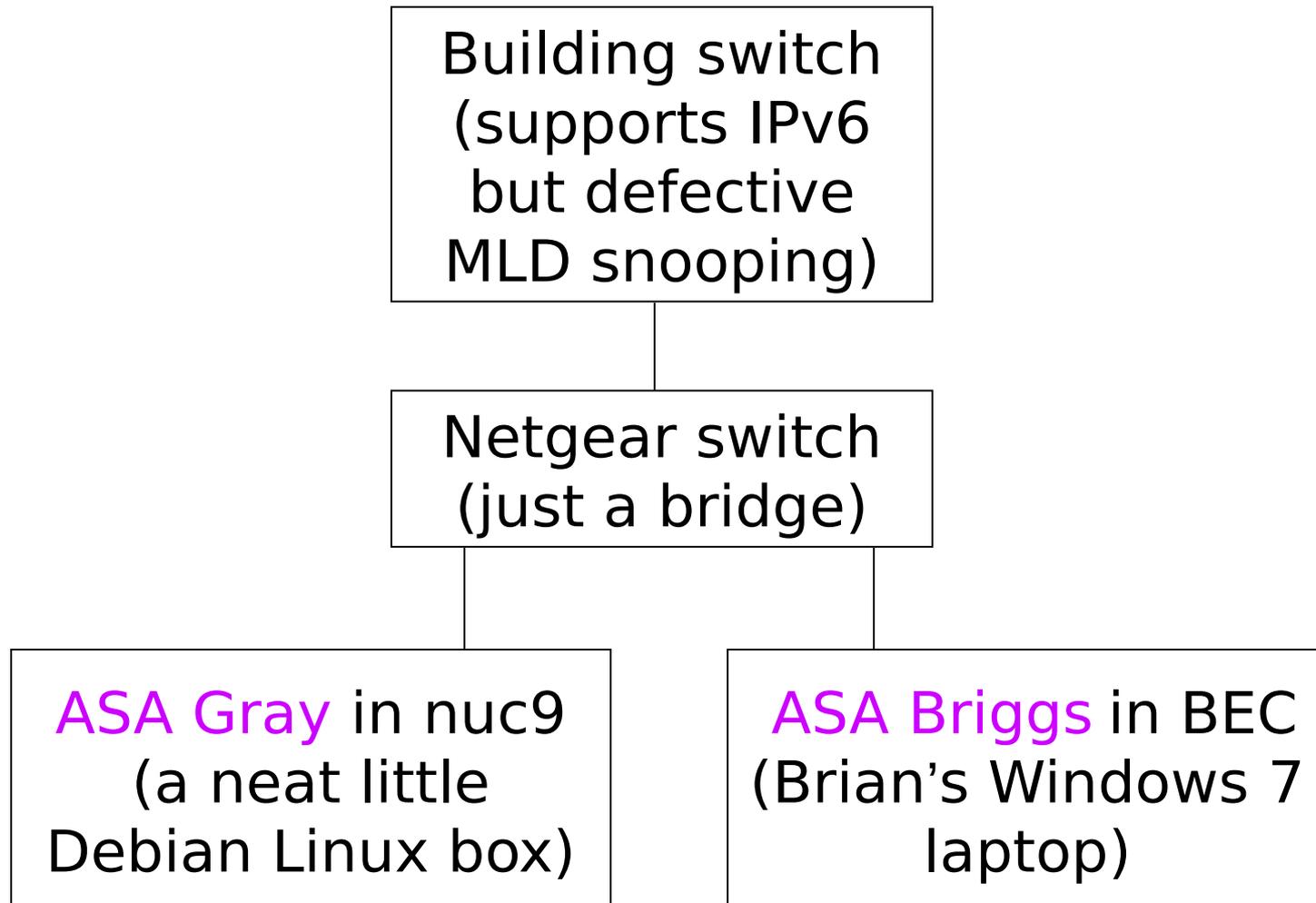
Multicast relaying (2)

- To detect such a loop and kill it:
 - the message carries a unique ID (Session ID + Initiator ID)
 - each relay MUST cache the ID when it relays a link-local multicast
 - each relay MUST check the cache when it receives a link-local multicast
 - clear the cache after a suitable timeout (at least GRASP_DEF_TIMEOUT)
- Worst case:
 - the looped message arrives later than the cache timeout
- The GRASP_LOOP_COUNT will act as a backup

Python prototype

- A Python 3 implementation of GRASP as a module **grasp.py**
 - About 1100 lines of code
- A test suite to exercise as many code paths as possible, **grasptests.py**
- Two toy ASAs to test operation across the network, **Briggs.py** and **Gray.py**
- <https://www.cs.auckland.ac.nz/~brian/graspy/>

Tests (they worked!)



Open Issues

- 7. Cross-check against other ANIMA WG documents for consistency and gaps.
- 43. Rapid mode is currently limited to a single objective for simplicity. A future consideration is to allow multiple objectives in rapid mode for greater efficiency.
- 48. Should the Appendix "Capability Analysis of Current Protocols" be deleted before RFC publication?
- Should the Reference Model talk about multiple instances of GRASP (e.g. an insecure instance as well as the secure instance)?

Discussion + next steps

- We need more reviews of the draft.
- We need people to think about implementation issues. Either play with the prototype or write your own!
- GRASP API
 - draft-liu-anima-grasp-api
 - <https://www.cs.auckland.ac.nz/~brian/graspy/graspy.pdf>
 - <https://github.com/liubingpang/IETF-Anima-Signaling-Protocol/blob/master/README.md>

