Autonomic IPv6 Edge Prefix Management in Large-scale Networks

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draft-ietf-anima-prefix-management-03

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Overview

- This is a chartered work item to validate the application and reusability of Anima components.
- If a prefix manager ASA needs more address space:
  - It discovers peers by GRASP Discovery message for the **`PrefixManager`** objective.
  - Then negotiates with a discovered peer for the needed address space using GRASP messages.
- In a single administrative domain, the network operator floods the **`PrefixManager.Params`** objective to announce default parameters.

Main Changes in 02 and 03 drafts

- Replaced Intent discussion by the **`PrefixManager.Params`** objective
- Small syntax correction to objective format

GRASP objectives (1)
in CDDL notation

```
objective = ["PrefixManager", objective-flags,
   loop-count, [PD-support, length, ?prefix]]

loop-count = 0..255              ; see GRASP spec

objective-flags /=               ; see GRASP spec

PD-support = true / false        ; indicates if sender
                                   supports PD

length = 0..128                  ; requested/offered
                                   prefix length

prefix = bytes .size 16          ; offered prefix in
                                   binary
```

GRASP objectives (2)
in CDDL notation

```
objective = ["PrefixManager.Params",
                 objective-flags, any]


loop-count = 0..255              ; see GRASP spec

objective-flags /=               ; see GRASP spec


; The ‘any’ object would be the relevant
   parameter values (format TBD)
```

Example parameters

JSON:

```
[
  [["role", "RSG"],["prefix_length", 34]],
  [["role", "ASG"],["prefix_length", 44]],
  [["role", "CSG"],["prefix_length", 56]]
   ]
```

An alternative would be to express the parameters in YANG using the YANG-to-CBOR mapping.

Next Steps

- Python “toy” prototype of this ASA exists (can negotiate prefixes as server or client, but does no real prefix assignments)
  https://www.cs.auckland.ac.nz/~brian/graspy/pfxm1.py
- Hackathon: Verbal report
- Need a volunteer to write a real prototype
- Ready for WGLC?