A Reference Model for Autonomic Networking

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Reference Model – High Level View

Autonomic Networking Infrastructure:
GRASP, Bootstrap, ACP, Naming, Addressing, Discovery

Autonomic Function A

Autonomic Function B

Registrar ASA

ASAs deployed as needed

Base infra: Every node must support

Network with autonomic functions
Summary

- **Main changes:**
  - Took out “constrained nodes” section for now.
  - Addressing: Focus on requirements here. The proposed scheme is now in `draft-behringer-anima-autonomic-addressing`
  - New section: “Functional overview”
  - Key concept: “Adjacency table”
  - Moved most on control loops out (out of scope right now)
  - Moved most of API out (out of scope right now)

- Work required in many sections
- But document structure is stable.
- Next step: Accept as WG document?
Adjacency Table

- Information about adjacent nodes
  - “Note down what you see” – no judgement yet!
- Used to control autonomic processes, such as constructing the ACP, bootstrapping, etc.

<table>
<thead>
<tr>
<th>Node-ID</th>
<th>i/f</th>
<th>Link address</th>
<th>ACP address</th>
<th>Domain</th>
<th>Certificate</th>
<th>Validity</th>
<th>Trust</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;UDI-1&gt;</td>
<td>Eth0</td>
<td>FE80:...</td>
<td>FD...</td>
<td>Example.com</td>
<td>&lt;cert-info&gt;</td>
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<tr>
<td>&lt;UDI-2&gt;</td>
<td>Eth1</td>
<td>FE80:...</td>
<td>-</td>
<td>Example1.com</td>
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<td>No</td>
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<td>2000:...</td>
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<tr>
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<td>Eth2</td>
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# Feeding the Adjacency Table

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Non-autonomic inputs:
- Configured adjacencies
- DHCP options for AN
- DNS based
- ... [draft-ietf-anima-bootstrapping-keyinfra-00 section-5.3 or Reference model ??]

AN discovery (local) → draft-ietf-anima-grasp
AN discovery (cloud redirect)
## Using the Adjacency Table

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### Node has no domain
- If response = “redirect”
  - Enter the redirect target into adjacency table; use this node to bootstrap.

### Node has domain
- And I have domain
  - Be a proxy to bootstrap that node
- And I don’t have domain
  - I bootstrap

### Node has same domain
- Build ACP
- Add ACP parameters to table

### Intent driven behaviour (tbd)

- ACP based functions, e.g., Intent distribution, negotiation, Synchronisation, etc.

- Outside scope for now.

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Section 3.2

draft-ietf-anima-bootstrapping-keyinfra-00

Section 3.1

draft-ietf-anima-bootstrapping-keyinfra-00

Chapter 5.1

draft-ietf-anima-autonomic-control-plane
Summary

- Structure is solid
- Content still needs work

- Adoption as WG document?