A Reference Model for Autonomic Networking

draft-ietf-anima-reference-model

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Reference Model – High Level View

Autonomic Function B

Autonomic Function A

Registrar

ASAs deployed as needed

Base infra: Every node must support

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

Network with autonomic functions

* not current WG item
Intent (out of scope for current WG charter)

1. Encode
2. Ingest
3. Flood
4. Split and Distribute to ASAs

ASAs deployed as needed
Base infra: Every node must support

Intent

Network with autonomic functions

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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>
<td>valid</td>
<td>Full (In domain)</td>
</tr>
<tr>
<td>&lt;UDI-2&gt;</td>
<td>Eth1</td>
<td>FE80:...</td>
<td>-</td>
<td>Example1.com</td>
<td>&lt;cert-info&gt;</td>
<td>valid</td>
<td>No</td>
</tr>
<tr>
<td>&lt;UDI-3&gt;</td>
<td>-</td>
<td>2000:...</td>
<td>FD...</td>
<td>Example.com</td>
<td>&lt;cert-info&gt;</td>
<td>Valid</td>
<td>Full (in domain)</td>
</tr>
<tr>
<td>&lt;UDI-4&gt;</td>
<td>Eth2</td>
<td>FE80:...</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
State Machine: ANIMA Device

- Factory default
- Auto-conf interfaces
  - This is BRSKI, as seen from pledge; see separate state machine
- Open items: see BRSKI draft
- Device has a domain certificate

- Bootstrapping
  - If not successful
- Enrolled
  - ANIMA Neighbor discovered (mDNS)
  - Decision needed on mDNS / GRASP
- In ACP
  - ACP “up”
  - GRASP Discovery an ACP: Registrar found
  - Need to specify GRASP message format
- Proxy Mode
  - Stop bootstrap proxy
    - Registrar lost
  - Start bootstrap proxy
  - This is BRSKI, as seen from proxy
  - MUST send discovery messages (because the pledge MAY send)

- More work needed

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