A day in the life of an autonomic function

P. Peloso, L. Ciavaglia

IETF 95th

draft-peloso-anima-autonomic-function-01

Motivations

Autonomics can improve network operations
Operators need unified management functions to use autonomics and gain confidence in it.

Common management functions of AF bring
- **trust in Autonomic Functions behavior**
- **capacity to control Autonomic Functions**
- **conflict avoidance mechanisms**

Changes in 01

-Enhanced split between ANIMA next phase items and current items

-Documented requested extensions to GRASP

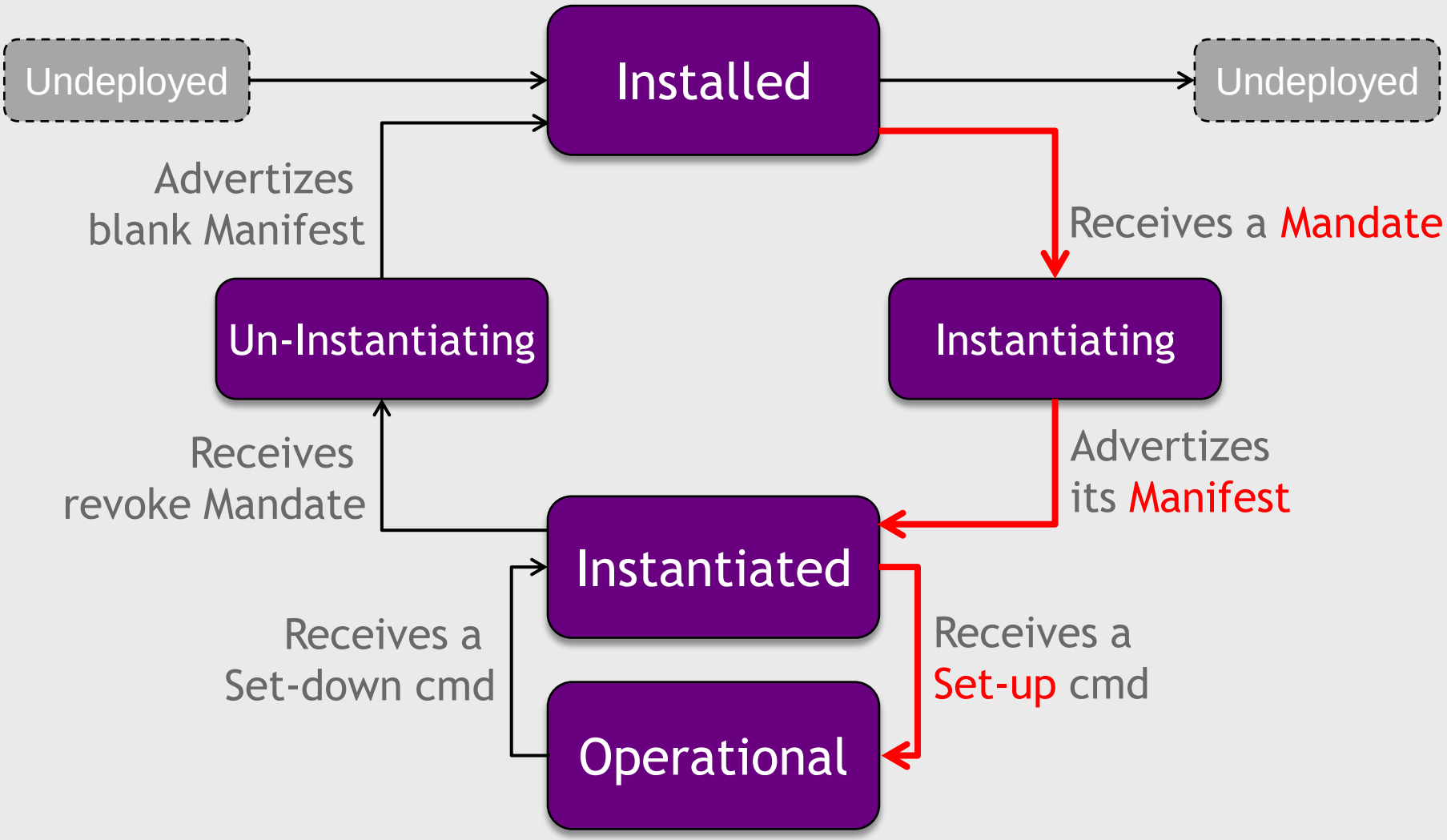
-Identified items for Reference Model

Controlling ASAs – Their life-cycle

To be kept in mind for future work

ASA life-cycle

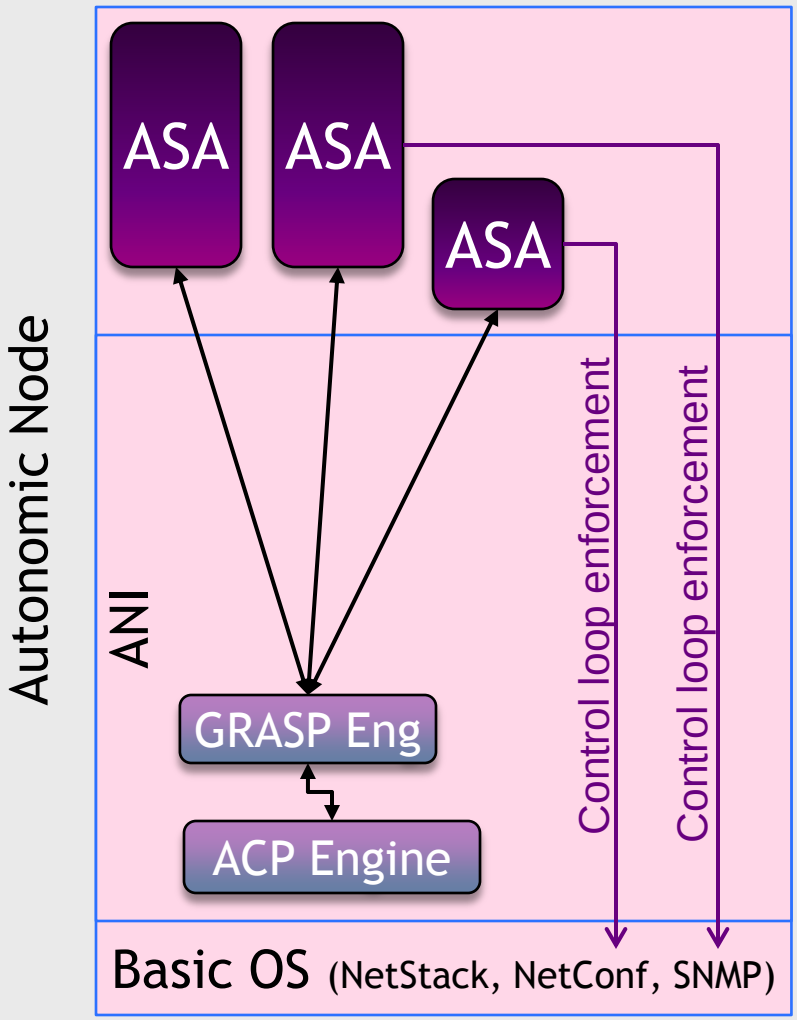
3 states + 2 transit ones



Controlling ASAs – Minimal control

Filling holes in current solution

Autonomic Networking Infrastructure — The toolbox



Current ANIMA picture

- GRASP preferably uses ACP
- ASA use GRASP signaling in-between them
- ASA monitor the equipment and modify its state directly using either NetConf, SNMP, call to Basic OS API…

Legend

Protocol engine

Minimal control of ASA

Control when it runs
(and how it runs)

Know what it does to the network

~~**Decide which equipments are under the ASA control**~~
~~(Or vice-versa which ASAs control an equipment)~~

Control when an ASA runs

NEED

- On request Start and Stop the execution of ASA

SOLUTION

- Send a START command
- Send a STOP command

Control when an ASA runs

NEED

- On request Start and Stop the execution of ASA

SOLUTION

- Send a START command
- Send a STOP command

IN ANIMA

- Add to GRASP imperative commands type of message

- Suggested form:

```
imperative-message =
  [M_IMPERATIVE, session-
  id, initiator,
  objective]
```

Know what an ASA does to the network

NEED

- Know which network resources are modified by ASA control loop
- Know which network resources are monitored by ASA control loop

SOLUTION

- Disclose an ASA Manifest at ASA bootstrap time

Know what an ASA does to the network

NEED

- Know which network resources are modified by ASA control loop
- Know which network resources are monitored by ASA control loop

SOLUTION

- Disclose an ASA Manifest at ASA bootstrap time

IN ANIMA

- Disclose Manifest with GRASP Discovery messages
- 2 options:
  - Whole manifest disclosed in a single discovery message
  - Each manifest entry disclosed in an independent discovery message

WG/GRASP designers to provide guidance there

Control when it runs

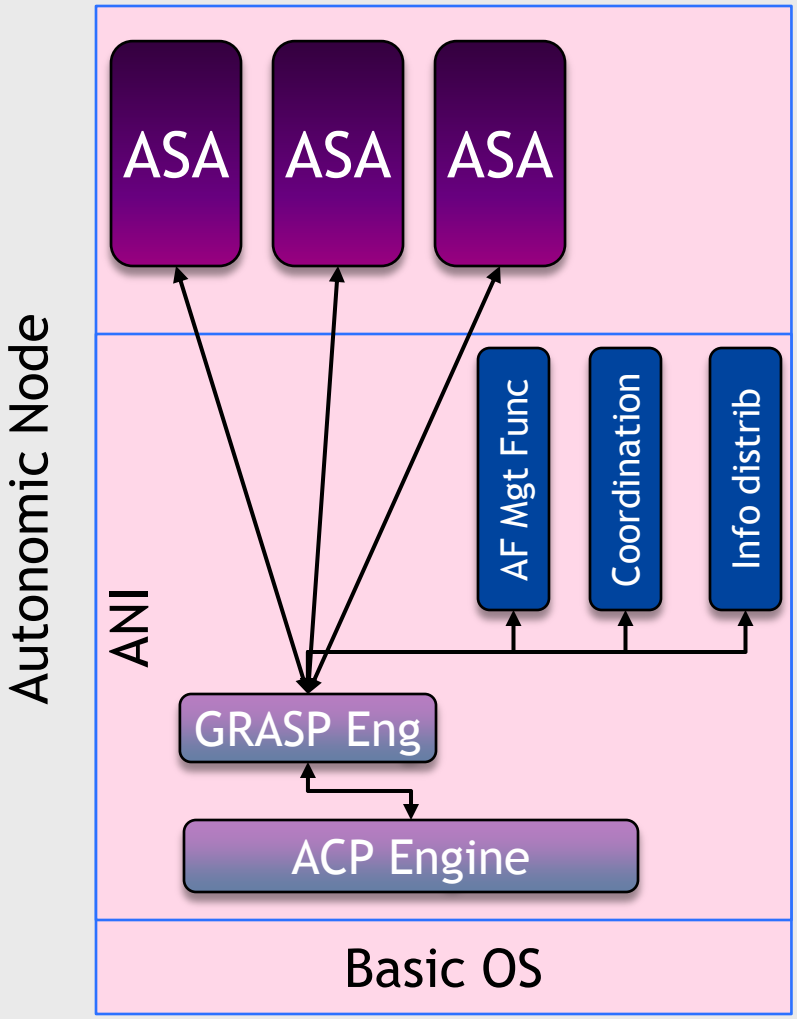
Start/Stop

Know what it does to the network

Manifest

Conclusion

Can we design a solution that oversees the operators trust in it ?



Simplest option to control ASAs:

- Same as before
- Plus use GRASP signaling between ASAs and AF Control Agents (Coordination, AF Mgt, Info Distribution)
- Hence multiple type of GRASP clients

Legend

Protocol engine

ANI function (serving ASAs)