An Auto-deployment Mechanism for Resource-based Network Services

draft-ietf-anima-network-service-auto-deployment-01

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Recall: Problem statement & Overview

- The core goal of this draft is to establish a set of automatic negotiation mechanism to achieve the negotiation and distribution of network resources in the domain network between the service client and the network.

The target of the draft:
- Ensure the QoS requirements for service.
- Multiple rounds of negotiations improves the success rate of service deployment.
- The network resources can be used more efficiently.
Major Changes from IETF112 season

• We updated objectives options and added options for service description.

• The draft add an auto-deployment mechanism to release or increase resources when the SI change its need. Details in sections 6.4 and 6.5 of the draft.

• We add topology ASCII pictures to express the case more easier to understand.

• Editorial changes to make the text more organized.
Auto-deployment Process

Requesting ResourceManager ASA

Discovery stage

Negotiation stage
decide at each round how large resource need to offer

Providing ResourceManager ASA

Discovery

M_RESPONSE

Multiple rounds of negotiations by using "ResourceManager" GRASP Objectives.

After Negotiation

responses how large resource they can offer

Removed the acceptable resource from its resource pool and Reserved negotiation resources hop-by-hop.
GRASP Objective Options Update

objective = ["ResourceManager", objective-flags, loop-count, ?objective-value]

- ResourceManager Objective are GRASP Objective options and it is based on CBOR.
- The objective-value include two part:
  - Service-information
  - Resource-information
- Different types can be described in an objective option.

n-s-deployment-value
  + service-information
    + source-ip-address
    + destination-ip-address
  + service-tag
  + resource-information
    + resource-requirement-pair
      + resource-type
      + resource-value
Example of Negotiation Process

[0,10] → bandwidth 10 Mbit/s
But ASA can only provide bandwidth 8 Mbit/s.

Auto-deployment Negotiation

Data Packet Transmission

Reserved negotiation resources hop-by-hop

IP_A, Service_tag
An example of changing resource requirements

**Providing ResourceManager ASA**
- Resource pool have more resource

**Requesting ResourceManager ASA**
- Tell resource change (can use synchronization message)
- Renegotiate resource requirements

- Removed the acceptable resource from its resource pool and Reserved negotiation resources hop-by-hop.
- Change data packet
Next Step

• Further rework the draft (structure and application examples)
• Circulate outcome on the mailing list for further discussion
• Welcome to comment, contribute or co-author it!