Coordinated Address Space Management (CASM) Architecture

draft-li-opsawg-address-pool-management-arch-01

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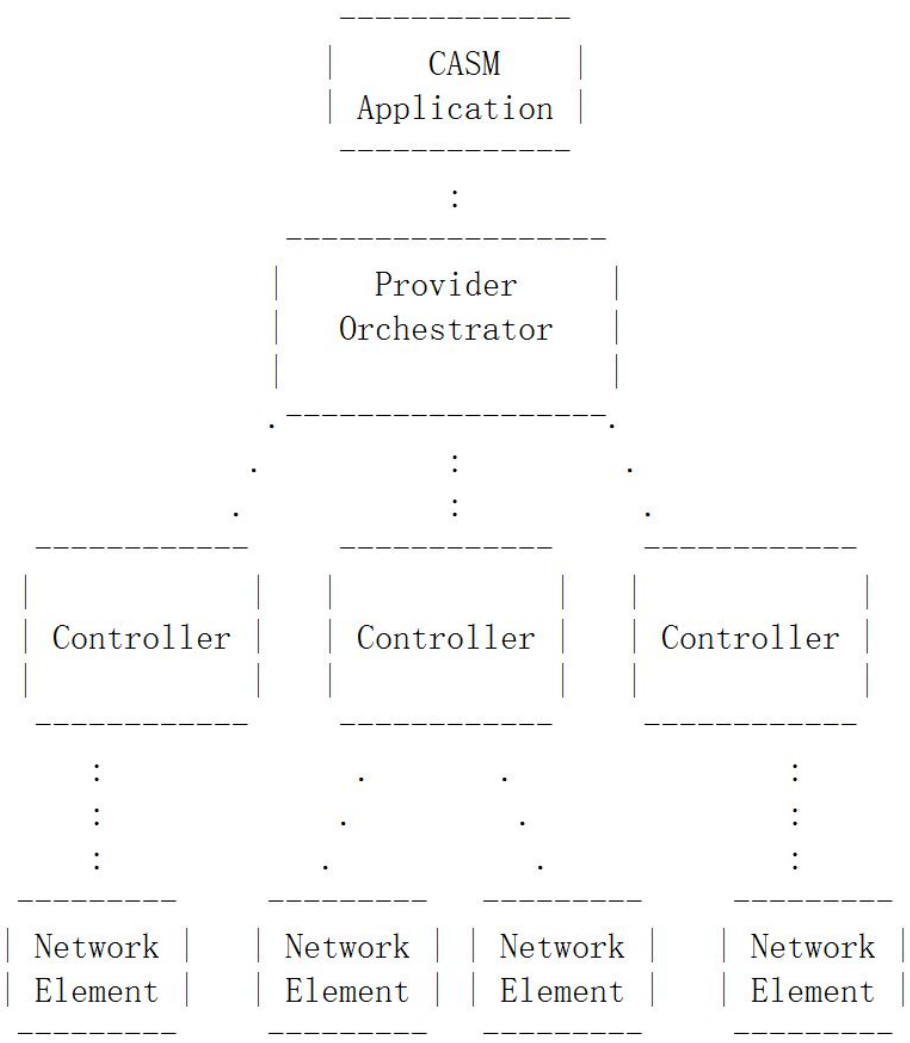
Progress

- “draft-li-opsawg-address-pool-management-arch-00” present at IE TF 101
- Comments around IETF 101
  - Some terminologies have been changed, such as “APMS” appeared in th e old version.
  - Expired drafts referenced were replaced with the latest ones
  - It is extended to handle containers, VLAN assignments, etc.
  - A number of enterprise operators that have a need for this type of solution
  - Other refinement
    - Correct several editorial errors
    - Components introduction is moved close to the reference architecture in section 3

New Use Case: Service SDN Management

- End-to-end services building in private or public clouds.
- The SDN Orchestrator deals with addressing of undelay network elements, manages IPv4, IPv6 addresses and also MAC addresses to assign to network interfaces.
- Service provisioning of L3VPN and L2VPN by the SDN orchestration level.



New Requirements from Enterprise operators

- Automatic coordination of address block and single address sho uld be supported
- User-friendly Interface to monitor and show address Usage, tec hnical detail of low-layer could be hidden.
- Manual and dynamic resource coordination are both supported
- IP address allocation can synchronize with other entities, such a s DNS server or SDN controller.

New comments in the mail list

Feedback to the comments of Tianran Zhou

- 1. There is a typo in section 1 “Another factor which drive this work is that tThe network architectures are rapidly changing with the migration to ward private and public clouds.” tThe->the
- *<Chen> delete t*
- 2. In section 1, you have "A series of use cases are defined in "Use Case Draft".“ But there is no reference to these use cases.
- Or how about use a section to include the use case within this draft?
- *<Chen> add the draft to the reference which is expired.* *https://www.ietf.org/archive/id/draft-xie-ps-centralized-address-management-02.txt*
- 3. In section 3, " 1) CASM Application "
- The figure 1 shows several CASM Applications. It's better to clarify how these applications may act differently.
- If only for different users, based on the reading of this part, it's better to have just one "CASM Client" in the figure.
- *<Chen> CASM Application refers to various address applications, such as address service management and address log management. Applica tion may be more appropriate than the client.*
- 4. In section 3, "2) CASM Coordinator“ Figure 1 shows two components "pool management" and "address management". It's better to clarify th ese two functional components in this section.
- *<Chen> the "pool management" is to manage an address block, and the "address management" is to manage address blocks and some specif ic addresses. "pool management" is a way to achieve "address management".*
- 5. In section 4, in the first procedure, how about enabling the operators to indicate the address allocation policies or so?
- *<Chen> “the address allocation policies should be added in later version. “*
- 6. In section 5, it's better to address how the required interfaces can map to the "pool management", "address management" and "address data base" as in the CASM Coordinator.
- *<Chen> we plan to write another draft about the YANG model of the interfaces mapping to the components mentioned in this draft .*
- 7. Section 6. What's the relationship between this use case and the mentioned use cases in section 1?
- *<Chen>* This is a new use case proposed by Telecom Italia. It will be put in a more suitable position in the next version

New comments in the mail list

Feedback to the comments of Mohamed Boucadair

- Page5, Q: What does that mean? (pointing to “maintain the CASM Coordinator”)
- *A: This paragraph clarifies the role and function of the CASM Application. CASM Application manages, maintains, and the oper ates address pool in the CASM coordinator.*
- Page6: Q: What is the difference between an address pool and addresses? (pointing to “address pools”)
- *A: Address pool is a bunch of addresses configured somewhere in the network for a common purpose, addresses means multi ple addressing units instead of a single one.*
- Page6: Q: How it knows this? (pointing to “the condition”)
- *A: The DA module in the device collects the utilization of the address resource. Under certain policy conditions, the address is a pplied to make up for the shortage of the address. Otherwise, the address resource is released when the address is redundant.*
- Page7: Q: That is? (pointing to “user plane devices”)
- *A: This is a statement about the device module. The BRAS consists of a user plane and a control plane. The user plane refers t o forwarding, user session in data plane, and the control plane refers to control functions, such as address management.*
- Page7: Q: Does this means that a permanent session is required to be maintained? (pointing to “When the connection of the C ASM Coordinator is lost or it needs the status information of certain applications, it may proactively query”)
- *A: Yes, It need to monitor the session. If the session fails, It need to get the status from the DA again to avoid data incomplete.*
- Page15: Q: What is the motivation for having this use case? Are there unique requirements that can be derived from it? (pointin g to “Services SDN Management Use Cases”)
- *A: This is a new use case from Telecom Italia. It describes End-to-end services building in private or public clouds. It will be disc ussed at this IETF meeting and decide what to do with it.*

New comments in the maillist

Feedback to the comments of You Lu

- 1. The draft mentioned the usage in carrier networks. Is the architecture able to support enterprise net works or data center networks,such as google?
- Xie: Yes, CASM architecture is designed to support enterprise and data center networks for their a utomatic resource coordination. we are looking forward to receiving requirments from you based on yo ur experience in google cloud.

- 2. Some of challenges in the draft are related to IPv4, is this work able to be applied to IPv6?
- Xie: As another kind of resource, IPv6 has been considered in CASM.

Acknowledgements

- Many thanks given to Mohamed Boucadair and Tianran Zhou,etc., for their contributions

Next Step

- Further refinement based on new comments
- Any contributions are welcome
- More inputs from enterprise operators
- Adopted as a WG doc ？

Thank you!
Q&A