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Use Case and Requirement of Service Function Chaining Nesting
draft-liu-sfc-nesting-use-case-00

Abstract

This document proposes use case and requirement of service function chain.

Requirements Language

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC 2119 [RFC2119].

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of BCP 78 and BCP 79.

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1. Scenario

This section discuss a deployment scenario of service function chaining. The scenario discussed in this section is called service function chaining nesting. As shown in figure 1, there are two types of service function chains. The first type is SFC1. There are two sub-type service function chains of SFC1, SFC1_1 and SFC1_2. SFC1_1 and SFC1_2 belongs to the same type of service function chain type SFC1. The second type of service function chain is SFC2. There are two sub-type service function chains of SFC2, namely SFC2_1 and SFC2_2. There are two more types of service function chain of sub-type SFC2_1, namely SFC2_1_1 and SFC2_1_2. For service function chain SFC2, there is one sub-type of service function chain called SFC2_2.

The deployment scenario discussed above is an abstraction example of nesting type of service function chain. A more concrete example is as follows:

- There are two tenants in a public cloud. All of the first tenant's traffic is identified as SFC1 and all of the second tenant's traffic is identified as SFC2. A more concrete example is that the first tenant is social networking service and the second tenant is online gaming service.

- For the social networking service traffic SFC1, the first sub-type of SFC1 is the traffic between users and it is identified as SFC1_1. The second sub-type of SFC1 is the traffic for advertisement and it is identified as SFC1_2. The traffic of both SFC1_1 and SFC1_2 belong to the same social networking service tenant but it may have different policies. For example, the

traffic between users may have higher priority compared with the traffic for advertisement.

- For the online gaming service SFC2, the first sub-type of SFC2 is the traffic of gaming interaction and it is identified as SFC2_1. There two more sub-type of SFC2_1, the first sub-type is the traffic that belongs to VIP users and it is identified as SFC2_2_1. The other sub-type is the traffic that belongs to normal user and it is identified as SFC2_1_2. Both the traffic of SFC2_1_1 and SFC2_1_2 belong to online gaming interaction traffic but it may have different policy. For example, the traffic of SFC2_1_1 may have higher priority compared with the traffic of SFC2_1_2.

- The second sub-type of online gaming service is user payment traffic and it is identified as SFC2_2. Both of traffic SFC2_1 and SFC2_2 belong to the online gaming service tenant but it may have different policies. For example, the online gaming interaction traffic may have higher priority compared with the payment traffic.

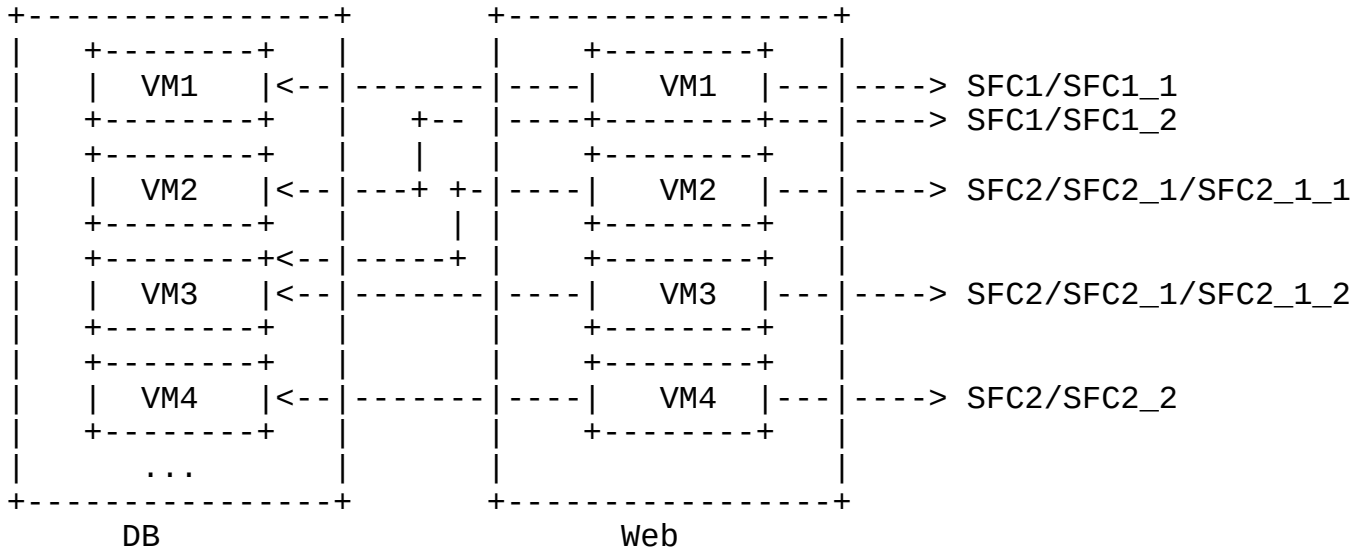

Figure 1: Service Function Chain Nesting Scenario

2. Requirement of Service Function Chain Nesting

Figure 2 shows the concept of service function chain nesting.

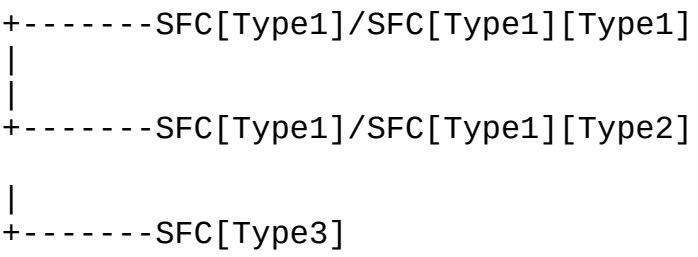

Figure 2: Service Function Chain Nesting Concept

The requirement of service function chain nesting is:

- The service function chain may have hierarchical structure.
- One service function chain type may have multiple sub-type of service function chain.
- One sub-type of service function chain should be identified which upper layer service function chain it belongs to.
- The number of levels of the hierarchical structure of a service function chain should not be limited.

3. IANA Considerations

This document makes no request of IANA.

Note to RFC Editor: this section may be removed on publication as an RFC.

4. Security Considerations

TBD

5. Acknowledgements

6. References

6.1. Normative References

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6.2. Informative References

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