Service Function Chaining Use Cases

draft-liu-service-chaining-use-cases

IETF 88 Vancouver, 7 November 2013
BoF Meeting on Service Function Chaining (SFC)

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Introduction

• Two use cases will be addressed, there are more others
  – (S)Gi-LAN
  – NFV
SGi-LAN

- SGi-interface is the 3GPP reference point between P-GW and PDN, such interface is called G-interface in 3G network.
- PDN(Packet Data Network) includes Internet and operators’ service enablers, which reside in SGi-LAN.
- Typical network services functions here includes: firewalls, DPI, video optimization, TCP optimization, HTTP header enrichment, NAT, load balancers, caching, etc.
A service function chain is a different path from normal forwarding or routing, where traffic is steered according to service characters.

Traffic must be steered through service functions in a specific sequence:
- Service function chain 1: default path
- Service function chain 2: http video traffic
- Service function chain 3: https
(S)Gi-LAN ctd.

• **Current common approach**
  – Hard-wired, static IP routing, policy routing etc. are used
  – Continuously increase of manual configuration complexity
  – Tightly coupled service function chain and underlying LAN topology

• **What are expected from operators**
  – Automatic service provisioning
  – Simple, instant and flexible chain configuration
  – Expandable service functions and chains
  – Supporting virtualized service functions
NFV -- Virtualized Service Functions

NFV requires chaining service functions (VNFs) in a certain sequence.

Each colored line identifies a service function chain.

SFC must be decoupled with underlying network topology, to support VM migration and inter-location deployment.

One service function may be reused for different SFCs, where identifying each SFC coming from the same service function by the forwarding plane is prerequisite.

Figure source: ETSI GS NFV 001, Network Functions Virtualisation (NFV) Use Cases
Summary

• We presented two representative use cases to illustrate the high level motivation for the work
  – There are many more other use cases

• Propose to have a set of representative use cases driving problem statement