

Service Function Chaining (SFC) BoF

IETF 88

Vancouver, British Columbia

BOF Chairs:

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Note Well

This summary is only meant to point you in the right direction, and doesn't have all the nuances. The IETF's IPR Policy is set forth in BCP 79; please read it carefully.

The brief summary:

- ❖ **By participating with the IETF, you agree to follow IETF processes.**
- ❖ **If you are aware that a contribution of yours (something you write, say, or discuss in any IETF context) is covered by patents or patent applications, you must disclose that fact.**
- ❖ **You understand that meetings might be recorded, broadcast, photographed, and publicly archived.**

For further information, talk to a chair, ask an Area Director, or review the following:

BCP 9 (on the Internet Standards Process)

BCP 25 (on the Working Group processes)

BCP 78 (on the IETF Trust)

BCP 79 (on Intellectual Property Rights in the IETF)

Agenda

- Agenda Bashing
- BOF Scope and Purpose
- Overview: Problem Statement
- Overview: Use Cases and Requirements
- Overview: Architecture/Framework
- Draft Charter (for a possible SFC WG)
- Obvious Questions
- Discussion (all)
- Summary and Closure

Agenda (Detailed)

- **Introduction** (BOF-chairs) - [10 minutes]
- **Problem statement discussion** (BOF-chairs + presenter) - [20 minutes]
 - **Problem statement review** (Navindra Yadav, Insieme Networks) - [10 minutes]
 - <http://datatracker.ietf.org/doc/draft-quinn-nsc-problem-statement>
 - **Problem statement Q&A** (open-mic) - [10 minutes]
- **SFC use case discussion** (presenter + open-mic) - [20 minutes]
 - **SFC use cases** (Hongyu Li, Huawei) - [10 minutes]
 - <http://datatracker.ietf.org/doc/draft-liu-service-chaining-use-cases>
 - **Use case Q&A** (open-mic) - [10 minutes]
- **SFC architecture & framework discussion** - [20 minutes]
 - **Architecture & framework review** (Ron Parker, Affirmed Networks & Paul Quinn, Cisco) - [10 minutes]
 - <http://datatracker.ietf.org/doc/draft-boucadair-sfc-framework>
 - <http://datatracker.ietf.org/doc/draft-quinn-sfc-arch>
 - <http://datatracker.ietf.org/doc/draft-jiang-sfc-arch>
 - <http://datatracker.ietf.org/doc/draft-beliveau-sfc-architecture>
 - <http://datatracker.ietf.org/doc/draft-dunbar-sfc-legacy-l4-l7-chain-architecture>
 - **Architecture & framework Q&A** (open-mic) - [10 minutes]

Agenda (Detailed – cont)

- **Charter text discussion** (BOF-chairs) - [25 minutes]
 - **Charter text review** (BOF-chairs) - [10 minutes]
 - <http://datatracker.ietf.org/wg/sfc/charter/>
 - **Charter Q&A** (open-mic) - [15 minutes]
- **Evaluation of required & existing ID's** (BOF-chairs + presenters) – [10 minutes]
- **General Q&A** (open-mic) – [20 minutes]
- **Closing** (BOF-chairs) - [5 minutes]
 - Actions & Next Steps

BoF Scope and Purpose

- This is a “Working Group forming BoF”
 - Does **not** mean a WG will automatically be formed
 - Need to convince the IESG that a WG is warranted
- Key elements
 - Consensus there is work to be done
 - Clear identification of and focus around work topics
 - Work is “within scope” of IETF
 - Critical mass commits to do work
 - Rough consensus on a (direction for) draft charter

SFC Background

- Berlin IETF meeting:
 - One-hour non-WG forming BoF
 - Presentation of use cases by Service Providers
 - 250+ persons in the BoF
 - Strong support to do work in space
- Since Berlin:
 - Drafts: on problem statement (quinn-sfc-problem-statement) , use cases, architecture, encapsulation, ...
 - Proposed charter: problem statement, architecture, requirements, encap, management
 - Good list discussion
- Today: WG Forming BoF

Service Function Chaining (SFC)

- Today, a “composite” network service is built from a set of cooperating applications/entities interconnected by Service Nodes (FWs, LBs, SSL accelerators etc.)
- A Service Function Chain (SFC) is structured as an ordered set of service functions
- Instantiation of an SFC into the network is called a Service Function Path (SFP)
- Today, deployments achieved by:
 - Physically placing SNs on data path of underlay, or
 - Changing the forwarding of the underlying network to "steer" packets through a service chain
- Increasingly inflexible/painful deployment model:
 - Requires changing forwarding behavior of underlay, or
 - Requires physical placement of SF on data path

Service Function Chaining (cont.)

- SFC is about enforcing differentiated traffic forwarding policies that best accommodate complex services
 - Thereby optimizing service delivery and operation
 - Decouple the "steering" function from the underlay
 - Use special encapsulation to tunnel from one SF to another
 - Encapsulation also carries additional meta data in data packets for SF use
- Rest of session goes into the details

BoF Presentations

Proposed Charter Work Items

- Problem Statement & Use cases
 - [draft-quinn-sfc-problem-statement](#)
- Architecture
 - Relationships between key building block components
 - Interactions between components identify protocol work areas
- Generic Service Function Chaining Encapsulation
 - Requirements
 - Encapsulation format
- Control Plane/Management mechanisms
 - Requirements and Framework
- Manageability
 - Requirements and Framework

Use Case Considerations

- Purpose of Use Cases:
 - Help motivate/justify the problem statement
 - Provide requirements for solutions
- Expectation is that a small number of use cases will cover the above
- No need for an exhaustive set, but OK to have one for more involved scenarios
- WG will need to decide what documents are needed

SFC Charter Milestones

- April 2014 - Submit to IESG Informational document(s) defining the problem statement and core use cases for SFC
- May 2014 - Consult with OPS Area on possible charter modifications for management and configuration of SFC components
- Jan 2015 - Submit to IESG Informational document defining the architecture for SFC
- Jan 2015 - Submit to IESG requirements for a generic service function chaining encapsulation protocol.
- Aug 2015 - Submit to IESG Standards Track document specifying the generic service function chaining header encapsulation.

Questions For BoF

- Berlin show of hands (from minutes):
 - “Is this [area] important?” Yes: a lot. No: none.
 - “Should the IETF work towards creating a WG?”
Yes: slightly fewer but still a lot. No: a couple
- Question for today:
 - Is there support to form a WG with the posted charter?

Q&A Time

Remaining Time

- **Evaluation of required & existing ID's** (BOF-chairs + presenters) - [20 minutes]
 - SFC requirements (Ron Parker, Affirmed Networks) - [10 minutes]
 - <http://datatracker.ietf.org/doc/draft-boucadair-sfc-requirements>
- **General Q&A** (open-mic) - [10 minutes]
- **Closing** (BOF-chairs) - [5 minutes]
 - Actions & Next Steps