

Resource Management for Dynamic Service Chain Adaptation

draft-lee-nfvrg-resource-management-service-chain-01

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Problem refined

- Resource scheduling is needed due to:
 - ~~Resource scheduling is needed due to~~
 - VNFs and VLS shared by multiple NFPs of different Network Services
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 - dynamic states of NFV resources
- ~~NFP update vs. VM scaling~~
 - ~~Focusing on NFP only~~
 - ~~NFP construct or update by selecting existing VNFs~~
 - NFP construct or update by selecting existing VNFs
 - ~~VM scaling or allocation is already covered in cloud computing~~
 - VM scaling or allocation is already covered in

+2 Use Cases

- Path optimization
 - Path optimization (or update) by selecting VN E-~~ns~~ and VEs considering processing power, b
NF construction (or update) by selecting, VN
and width, latency, etc.
For end-to-end, etc.

Applied to a SFC I-D

- draft-ww-sfc-control-plane-04
 - 5.4. Service Function Path Adjustment
 - Collect and monitor states and attributes of SFIs and overlay links
 - Evaluate SFIs and overlay links based on the monitoring results
 - Select SFIs to re-determine a SFP according to the evaluation results
 - Replace target SFIs (e.g., in a failure or overloaded) with newly selected ones
 - Enforce the updated SFP for upcoming SFC traversal to SFFs; or to the SFC Classifier Node

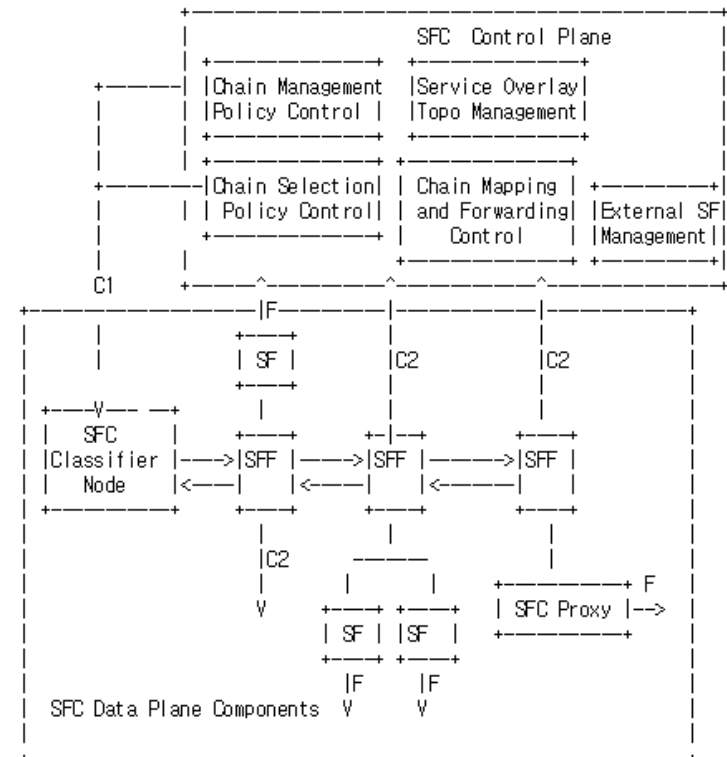


Figure 1: SFC Control Plane Overview

Issues

- Resource allocation is NP-hard
 - trying to address the problems with heuristic approaches in the draft
 - other contributors for detailed algorithms?
- Seamless VM migration at VNF-I replacement
- Document scope
 - target on architectural contribution
 - use cases & algorithms
 - contribution to SFC control plane
 - NFP update vs. VNF-FG update or VM scaling

Next Step

- Problem articulation from top to bottom
- Simulation results
- Prototyping within OPNFV and ODL
- Any other contributors?
- Adopt as RG draft