

Unifying Carrier and Cloud Networks: Problem Statement and Challenges

[draft-unify-nfvrg-challenges-00](#)

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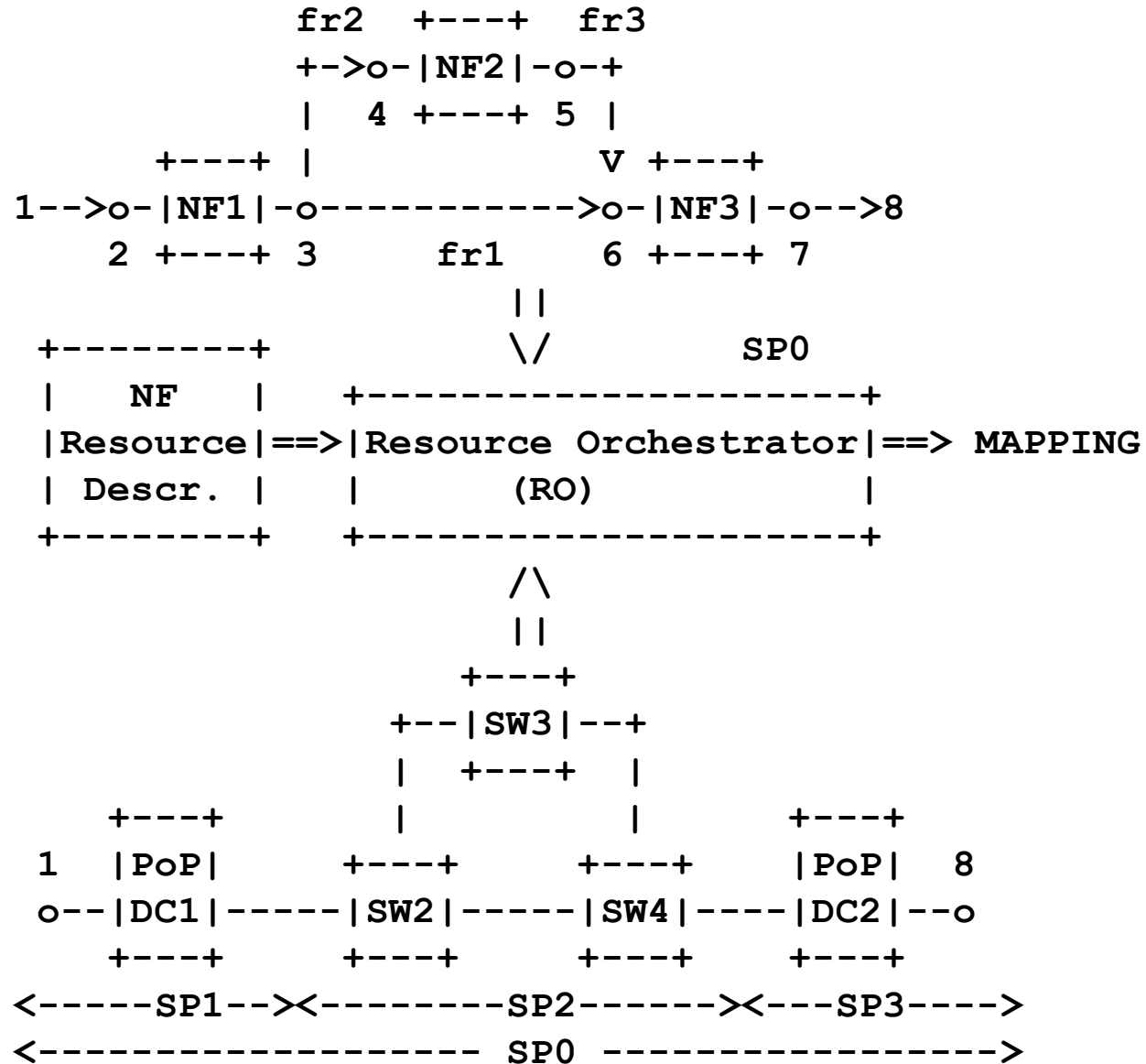
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Why?

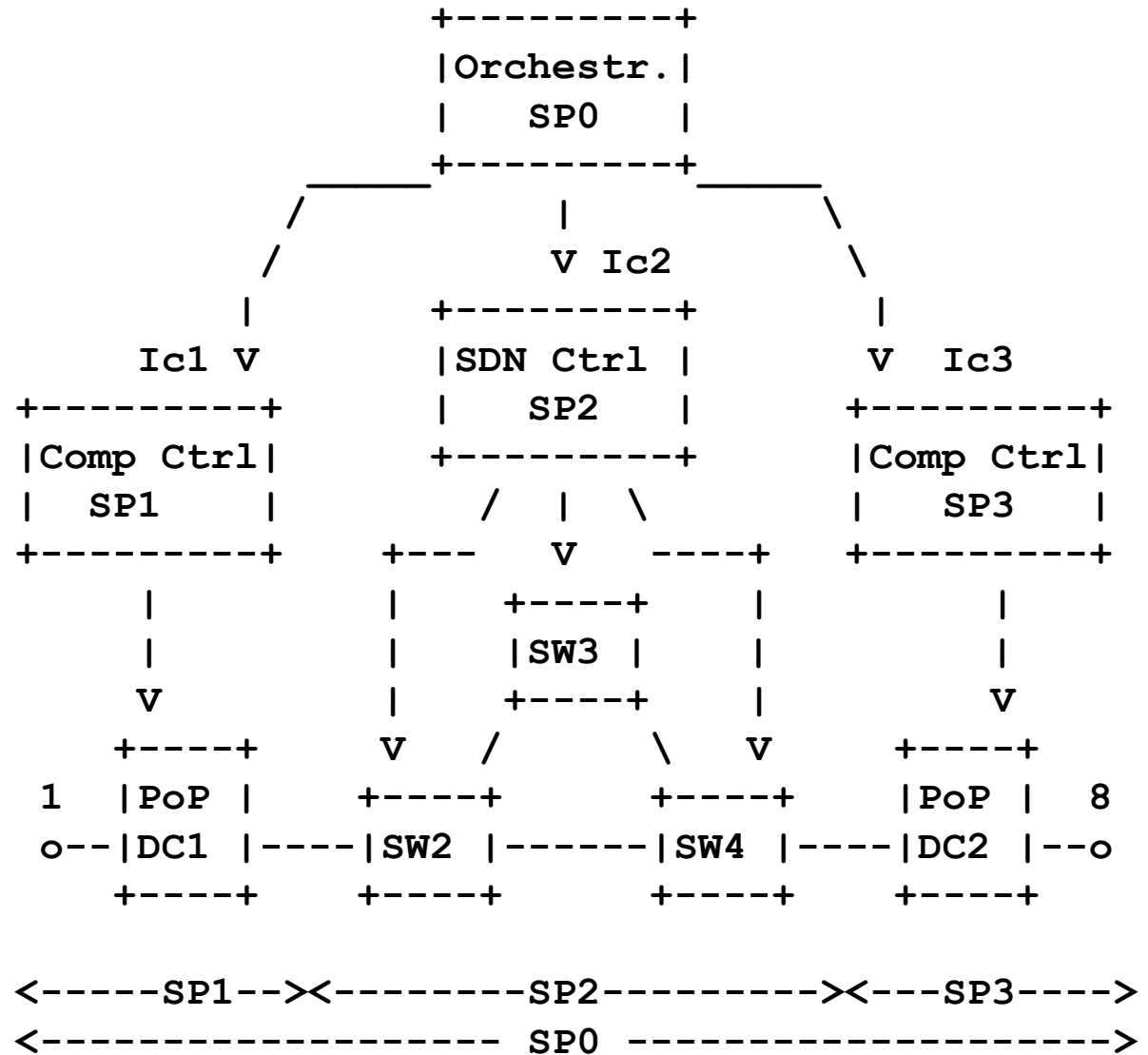
- Softwarization of Network Functions (NFs)
 - Where to place software resources?
- Assumptions
 - Software resources are distributed in the network infrastructure
- Value Proposition
 - Orchestrate software NFs across the distributed software resources

Orchestration



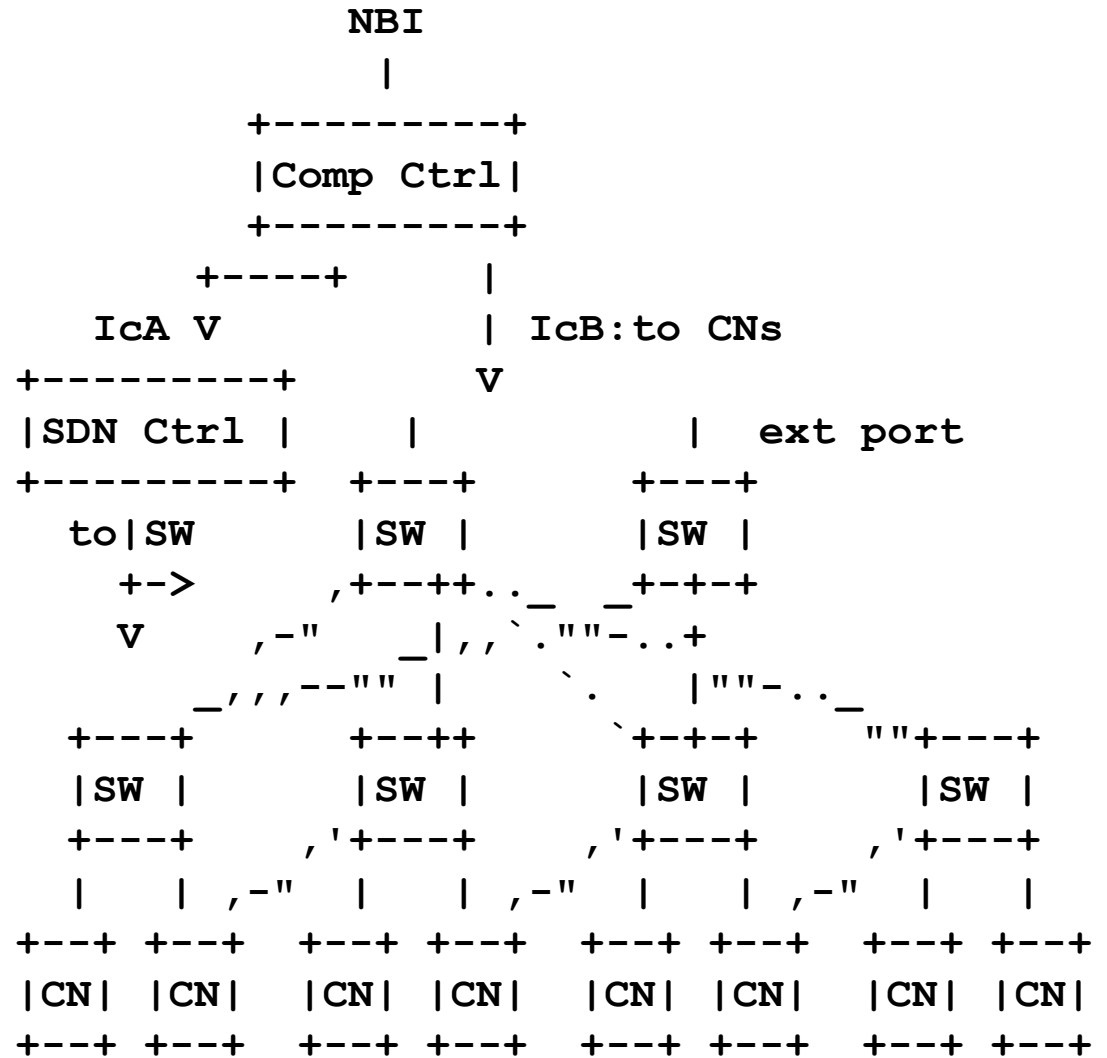
Switch (SW)
 Compute Node (CN)
 PoP DC = SW + CN

Software and Network?



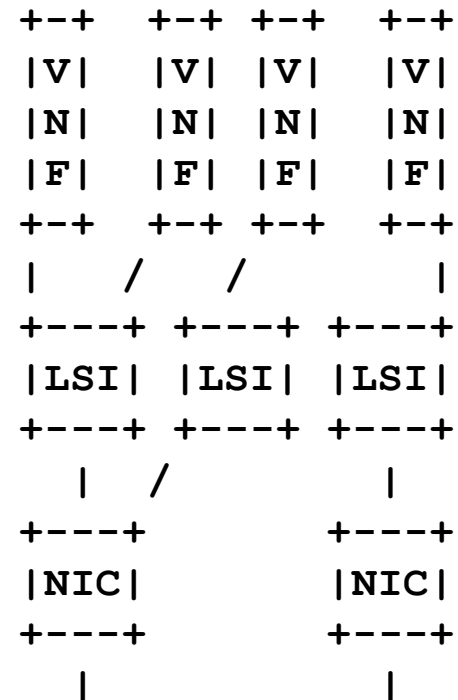
Switch (SW)
 Compute Node (CN)
 PoP DC = SW + CN

PoP DC



Switch (SW)
 Compute Node (CN)

Compute Node



Logical Switch Instance (LSI)

Problem Statement

- Given the **multi-level virtualization** of compute, storage and network domains, **automation of** the corresponding **resource provisioning needs a recursive programmatic interface:**
 - Existing **separated compute and network programming interfaces cannot provide** such **recursions** and cannot satisfy key requirement for multi-vendor, multi-technology and multi-provider interoperability environments.
 - Need for a **recursive programmatic interface for joint compute, storage and network provisioning.**

Summary

- Assumptions
 - software resources distributed across the network
- Orchestration
 - Works over multi-level virtualization
 - Needs joint programmatic interface for software and network resources
- References
 - [draft-unify-nfvrg-challenges-00](#)
 - [“UNIFYing carrier and cloud networks: mixing SDN and NFV”](#)
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