

Common NFVI Telco Taskforce Paris Face-To-Face Sessions

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Reference Model Chapter 5
Reference NFVI SW profiles and configurations

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 THE **LINUX** FOUNDATION



Reference NFVI SW profiles and configurations

Agenda

- What is the scope of the chapter “Reference NFVI SW profiles and configurations”?
- What is the rationale to separate SW and HW profiles?
- Presentation of SW profiles and configurations per NFVI instance type

Reference NFVI SW profiles and configurations

Chapter 5

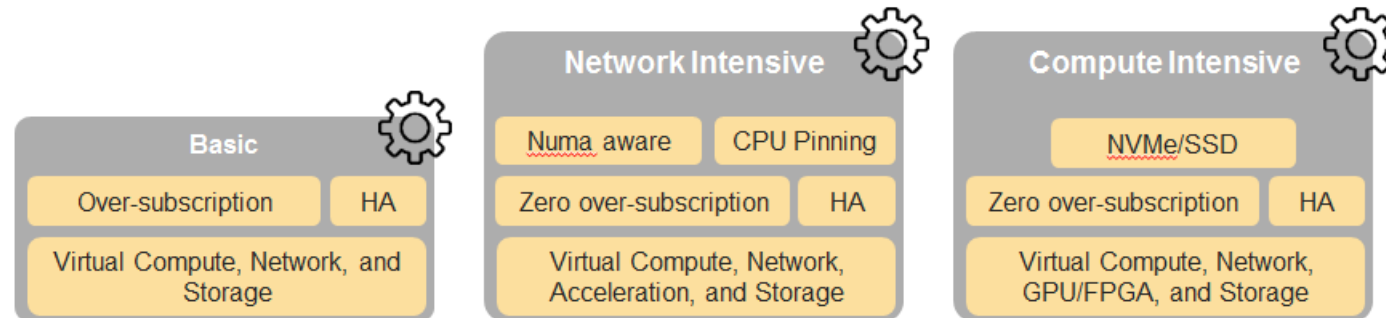
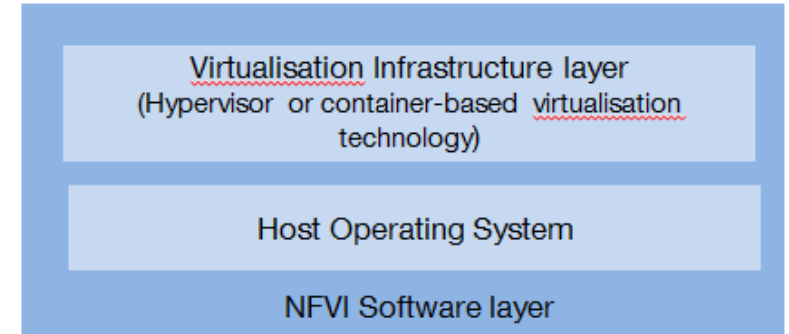
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 - 5.2.1 Virtual Compute features and configurations.
 - 5.2.2 Virtual Storage features and configurations.
 - 5.2.3 Virtual Networking features and configurations.

Reference NFVI SW profiles and configurations

Description and objective

- NFVI SW layer on top of HW layer allocates virtualised resources for VNFCs deployment
- NFVI SW layer encompasses host OS and the virtualisation Infrastructure layer
- Objective of NFVI SW profile and configuration
 - Depending on VNFs requirements
 - defines the behaviour, capabilities and metrics provided by an NFVI Software Layer
 - assigns a set of settings that are applied/mapped to **NFVI SW** deployment

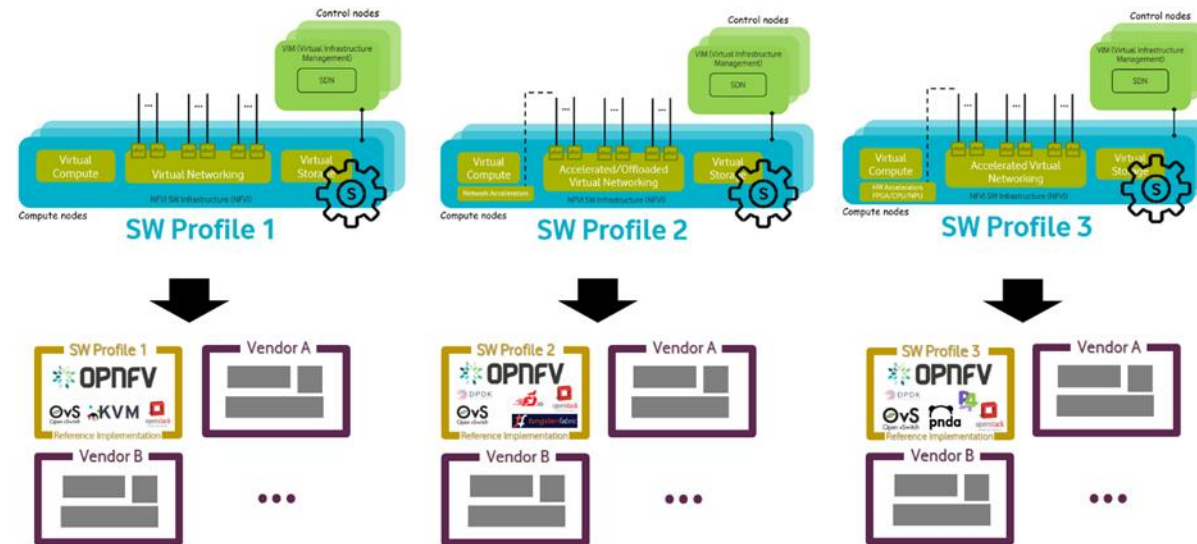


Reference NFVI SW profiles and configurations

Rationale SW/HW

Rationale for decorrelating SW profile to HW profile

- Characterise SW and HW components and configuration separately
- Identify SW capabilities against SW suppliers solutions
- Identify specific metrics for SW profiles and allow certification and verification by open source communities with a given HW profile



Reference NFVI SW profiles and configurations

SW profiles related to virtual compute resource

Feature	Type	Basic	Network Intensive	Compute Intensive
Support of flavours	Yes/No	Y	Y	Y
CPU partitioning	value			
CPU allocation ratio	value	1:4	1:1	1:1
NUMA awareness	Yes/No	N	Y	Y
CPU pinning capability	Yes/No	N	Y	Y
Huge Pages	Yes/No	N	Y	Y

For discussion:
Are there missing features or wrong configurations?

Reference NFVI SW profiles and configurations

SW profiles related to virtual storage resource

Feature	Type	Basic	Network Intensive	Compute Intensive
Catalogue storage Types	Yes/No	Y	Y	Y
Storage Block	Yes/No	Y	Y	Y
Storage Object	Yes/No	Y	Y	Y
Storage with replication	Yes/No	N	Y	Y
Storage with encryption	Yes/No	N	N	Y

Feature	Type	Basic	Network Intensive	Compute Intensive
Storage IOPS oriented	Yes/No	N	Y	Y
Storage capacity oriented	Yes/No	N	N	Y

For discussion:
Are there missing features or wrong configurations?

Reference NFVI SW profiles and configurations

SW profiles related to virtual networking resource (1/2)

Feature	Type	Basic	Network Intensive	Compute Intensive
vNIC interface	IO virtualisation	virtio1.1	virtio1.1, i40evf (Intel driver for VF SR-IOV)	virtio1.1, i40evf (Intel driver for VF SR-IOV)
Overlay protocol	Protocols	VXLAN, MPLSoUDP, GENEVE, other	VXLAN, MPLSoUDP, GENEVE, other	VXLAN, MPLSoUDP, GENEVE, other
NAT	Yes/No	Y	Y	Y
Security Group	Yes/No	Y	Y	Y
SFC support	Yes/No	N	Y	Y
Traffic patterns symmetry	Yes/No	Y	Y	Y
Horizontal scaling	Yes/No	Y	Y	Y

For discussion:
Are there missing features or wrong configurations?

Reference NFVI SW profiles and configurations

SW profiles related to virtual networking resource (2/2)

Feature	Type	Basic	Network Intensive	Compute Intensive
vSwitch optimization	YeS/No and SW Optimization	N	Y, DPDK	Y, DPDK
Support of HW offload	YeS/No	N	Y, support of SR-IOV and SmartNic	Y, support of SR-IOV and SmartNic
Crypto acceleration	Yes/No	N	Y	Y
Crypto Acceleration Interface	Yes/No	N	Y	Y

For discussion:
Are there missing features or wrong configurations?

Q & A