Common NFVI Telco Taskforce

Antwerp Face-To-Face Sessions

RM Chapter 06: APIs and Interfaces

RM Chapter 09: Infrastructure Operations and Life Cycle Management

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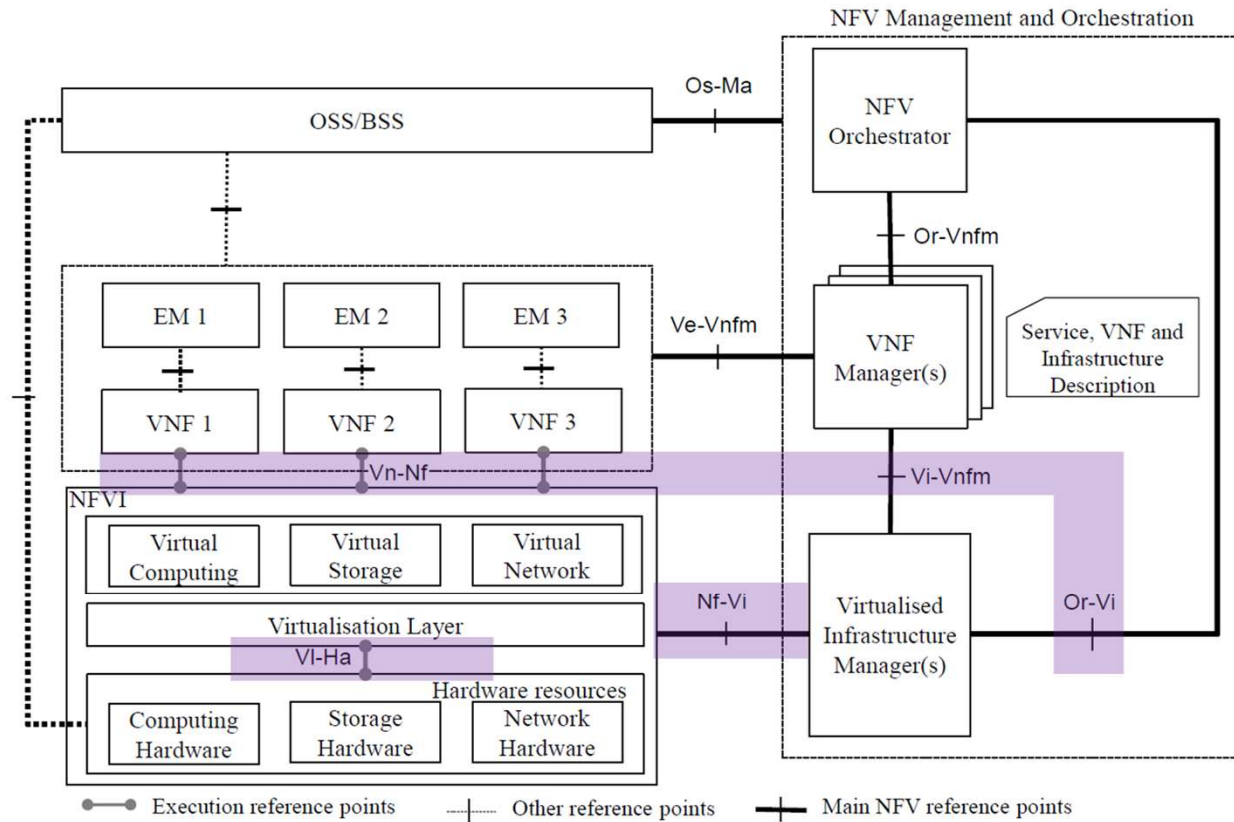
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September 2019

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RM Chapter 06: APIs and Interfaces

Application Programming Interfaces (API)

ETSI NFVI and VIM Interfaces

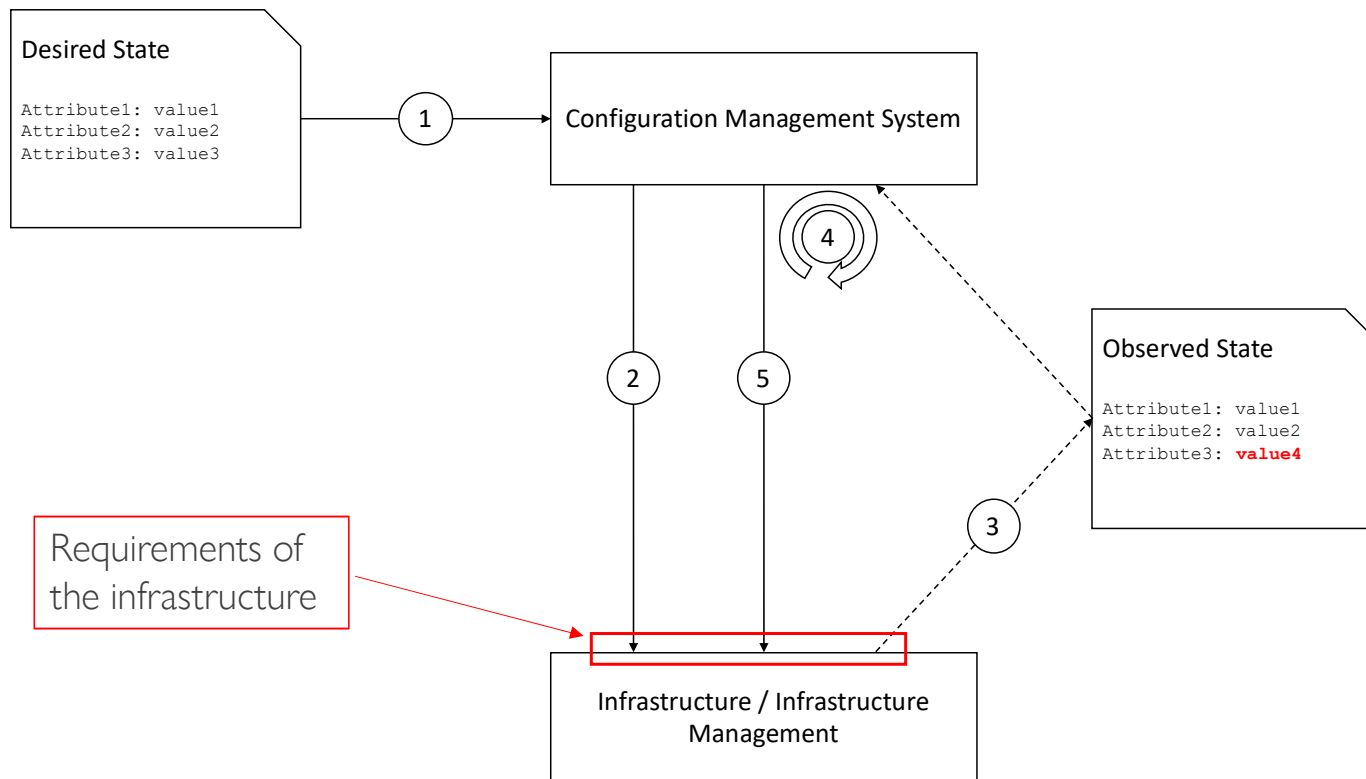| Interface Point	NFVI Exposure	Interface Between	Description
Vi-Ha	Internal NFVI	Software Layer and Hardware Resources	1. Discover/collect resources and their configuration information 2. Create execution environment (e.g., VM) for workloads (VNF)
Vn-Nf	External	NFVI and VM (VNF)	Here VNF represents the execution environment. The interface is used to specify interactions between the VNF and abstract NFVI accelerators. The inetrafecs can be used to discover, configure and manage these acceleartors and for the VNF to register/deregister for receiving acceleartor events and data.
NF-Vi	External	NFVI and VIM	1. Discover/collect physical/virtual resources and their configuration information 2. Manage (create, resize, (un) suspend, reboot, etc.) physical/virtualised resources 3. Physical/Virtual resources configuration changes 4. Physical/Virtual resource configuration.
Or-Vi	External	VNF Orchestrator and VIM	Software Image Management; Virtualized Resources (Capacity, Change, Reservations, Performance and Fault) Management; Policy Management; Network Forwarding Path (NFP) Management (only VNF Orchestrator and VIM (Or-Vi))
Vi-Vnfm	External	VNF Manager and VIM	

Hardware Acceleration Interfaces

› ETSI GS NFV-IFA 002 defines a technology and implementation independent virtual accelerator, the accelerator interface requirements and specifications that would allow a VNF to leverage a Virtual Accelerator.

› ETSI ETSI (Ref: NFV IFA 019 v03101p) has defined a set of technology independent interfaces for acceleration resource life cycle management.

› Section 6.2.2. Consolidates these interfaces into a table for convenience

* Footnote text

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RM Chapter 09: Infrastructure Operations and Life Cycle Management

Configuration and Lifecycle Management

Desired State

```
Attribute1: value1
Attribute2: value2
Attribute3: value3
```

(1) → **Configuration Management System**

(4)

(2)   (5)

Observed State

```
Attribute1: value1
Attribute2: value2
Attribute3: value4
```

(3)

Requirements of the infrastructure

Infrastructure / Infrastructure Management

Interface Standards for Configuration Management
*Configuration is **set**, or it is **observed***

Component	Interface Standard
Infrastructure Management	…
Infrastructure Software	…
Infrastructure Hardware	DMTF Redfish

Assurance requirements for the infrastructure

› Data collection from all components, e.g.
  › The ability to collect data relating to events (transactions, security events, physical interface up/down events, warning events, error events, etc.)
  › The ability to collect data relating to component status (up/down, physical temperature, disk speed, etc.)
  › The ability to collect data relating to component performance (total CPU used, storage throughput, network bandwidth in/out, API transactions, transaction response times, etc.)

› Capabilities of the Infrastructure Management Software to allow for in-service maintenance of the Infrastructure Software and Hardware under its management, e.g.
  › The ability to mark a physical compute node as being in some sort of "maintenance mode" and for the Infrastructure Management Software to ensure all running workloads are moved off or rescheduled on to other available nodes (after checking that there is sufficient capacity) before marking the node as being ready for whatever maintenance activity needs to be performed
  › The ability to co-ordinate, automate and allow the declarative input of in-service software component upgrades - such as internal orchestration and scheduler components in the Infrastructure Management Software

Capacity Management requirements of the infrastructure

› Data collection requirements covered by Assurance

› Configuration and Lifecycle Management covers the "make changes" stage of Capacity Management

› All other Capacity Management processes do not place additional requirements on the infrastructure

Appendix