

Common NFVI Telco Taskforce

Technical F2F Work Shop – January 13-16, 2020

Infrastructure Description (Manifests) Validation

Facilitator: Sridhar Rao, ...

 THE **LINUX** FOUNDATION



Infrastructure Description

- › Machine-Readable Definition/Description of the infrastructure – Hardware and Software – using a specific schema (preferably standardized?).
- › The Infrastructure: Environment In/On which ‘ANY’/’Targeted’ VNFs (CNFs) runs.
- › Scope
 - › NFVI + SDN
 - › MANO
 - › Underlay/Fabric?
- › Consumers
 - › Primary: Installers.
 - › Secondary: Test and Verification Framework, Application designers, Management/Operations.
- ›

What really user can 'Describe'?

› These are organized by Installer-Specific Schema

GENERIC:

Management (location, owner, etc.), Strategy, Globals, Tooling, Versioning,

HARDWARE:

Vendor, Gen., BIOS, CPUs, Memory, Disks, NICs (PCI, MAC), etc.

PROFILES (HOST)

Name, Disks & Partitions, N/W->NIC Mapping, OS,

NETWORK

Names, vlans, cidr, routes, ip, g/w, speed, mtu, bonding, etc. cidrs for diff. n/ws, container n/w, SRIOV, etc.

NODES

profile-mapping, Networks and address, metadata.

SECRETS

Certificates, passphrases, publickeys, etc.

SOFTWARE

Software and nodes mapping, versions, registry,

ACTIONS

Bootactions- custom scripts, drivers, etc.

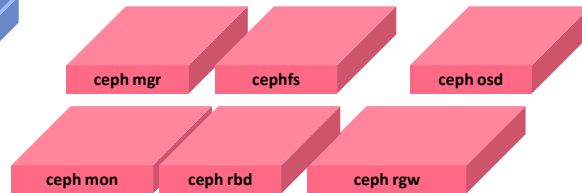
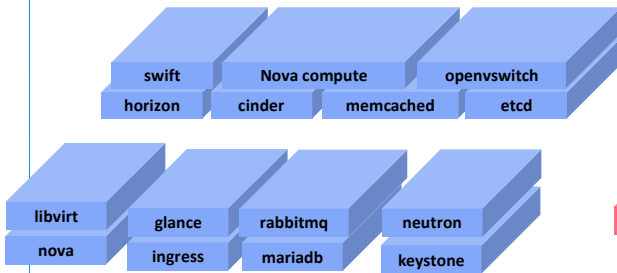
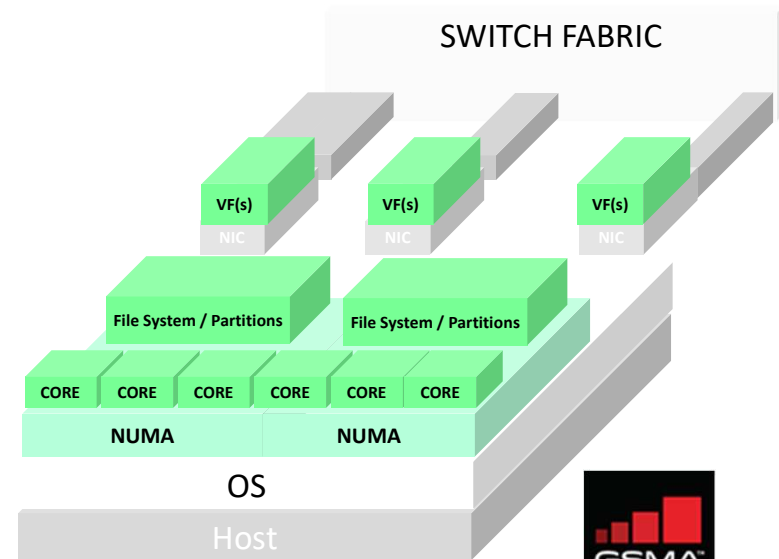
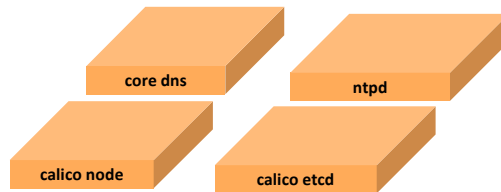
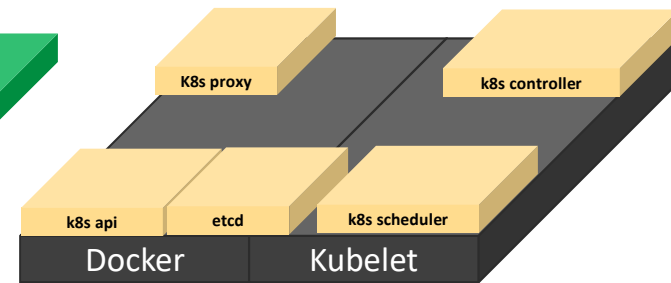
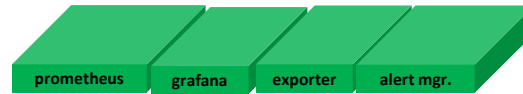
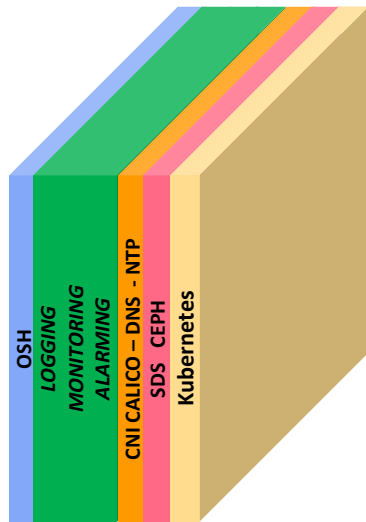
OTHERS

Jumphosts-Defn., Network Services (NTP, DNS, etc)

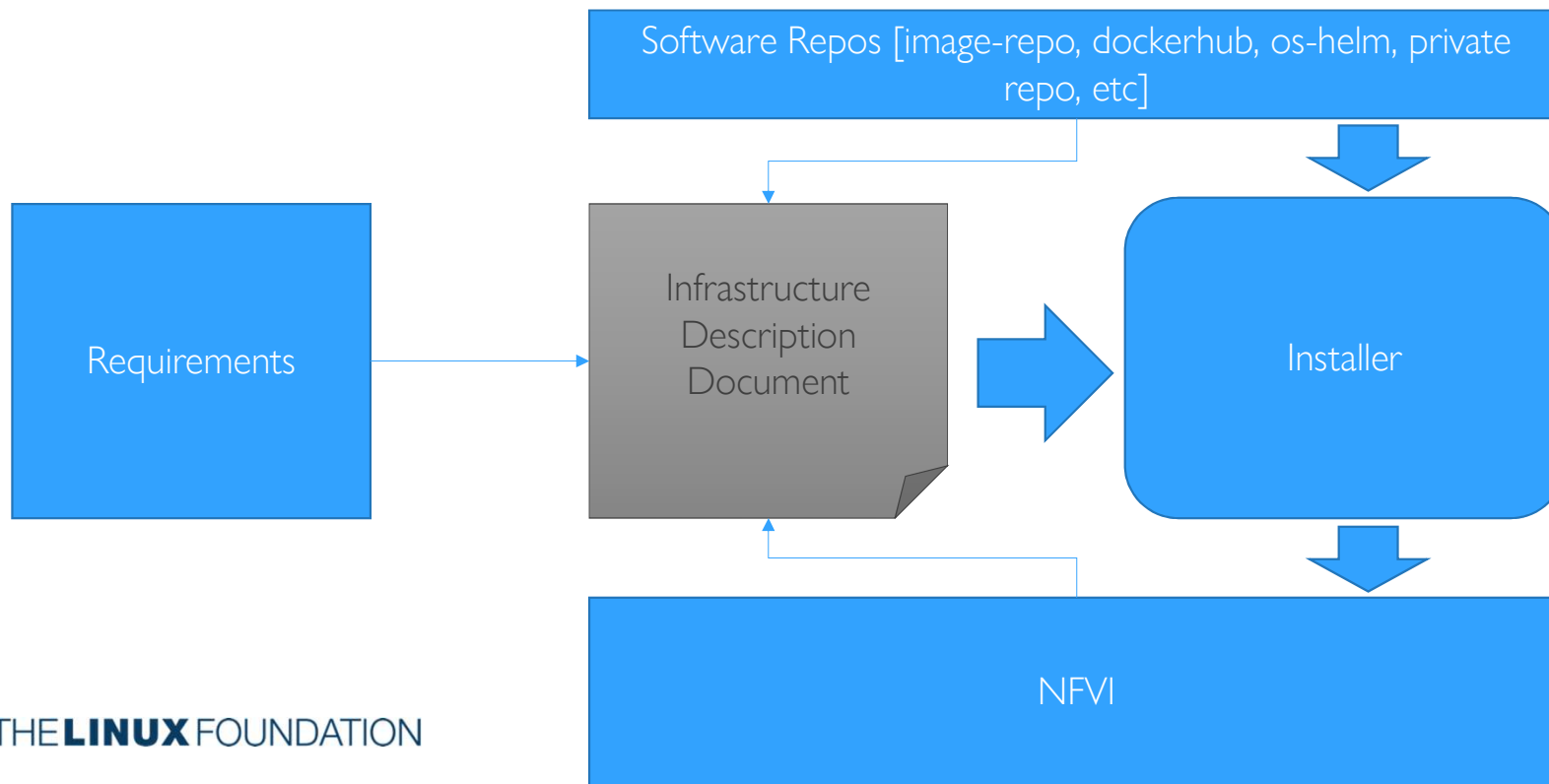
Infrastructure Description

- › Example Works
 - › Airship Treasuremap Manifests
 - › OPNFV PDF/IDF
 - › TripleO Heat Templates
 - › Kayobe's YAML files.
 - › Fuel Configuration in OPNFV-IDF.
 - › GUI-Based configuration in compass.
 - › OPNFV Apex's - inventory, network and deploy settings.
 - › Kubernetes CRDs

Infrastructure Description: Example (Airship)



Infrastructure Description: Manifests



Validating Manifests

- › When?
 - › Pre-Deployment
 - › Post-Deployment
- › Why?
 - › Post-installation checks for RI,
 - › Hand-off criteria for RC
- › How?
 - › Manual
 - › Automated: Scripts
 - › Testing: X-Testing, Performance-Benchmarking (chapter-2)

Requirements (chapter-5)

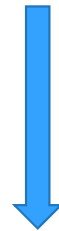
Requirement	Basic	NI	CI	POD-10
Number of CPU (Sockets)				
Number of Cores per CPU				
NUMA				
Simultaneous Multithreading/Hyperthreading (SMT/HT)				
GPU				
Local Storage HDD				
Local Storage SSD				
NIC Ports				
Port Speed				
PCIe slots				
PCIe speed				
PCIe Lanes				
Cryptographic Acceleration				
SmartNIC				
Compression				

Requirements (chapter-2)

- › Categories
 - › Opensource
 - › Cloudnativeness
 - › Scalability
 - › Resilience
 - › Availability
 - › Compute
 - › Storage
 - › Network
 - › Acceleration
 - › General
 - › API
 - › Automated Deployment
 - › CI/CD⁺
 - › Integration⁺
 - › Monitoring
 - › Zoning
 - › Compliance
 - › Networking*

› Requirement-Level

- › Must
- › Should
- › May



› Pod-10 (ex. Validation)



Microsoft Excel
Worksheet

Validation Approach & Classification of Requirements

Validation Approach	Requirement Type
Testing Framework	
Automation Scripts	
Manual	

Thanks

Appendix

 THE **LINUX** FOUNDATION



OOK - Options



OpenStack on K8s
(OOK)

 THE **LINUX** FOUNDATION



TRIPLEO
an OpenStack Community Project



Containerized OpenStack
(CO)

Red Hat OpenStack
Platform is based on
this

