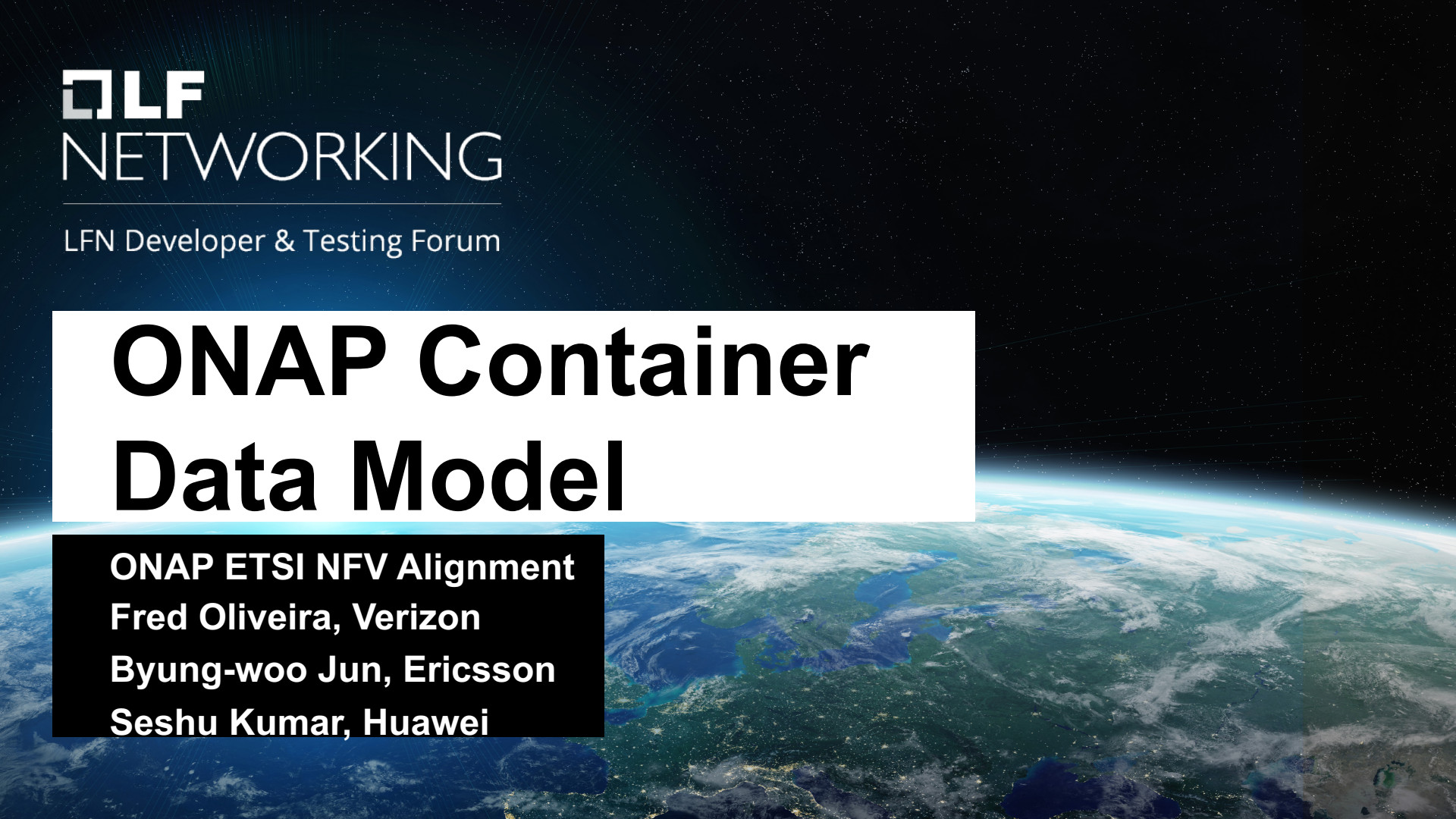
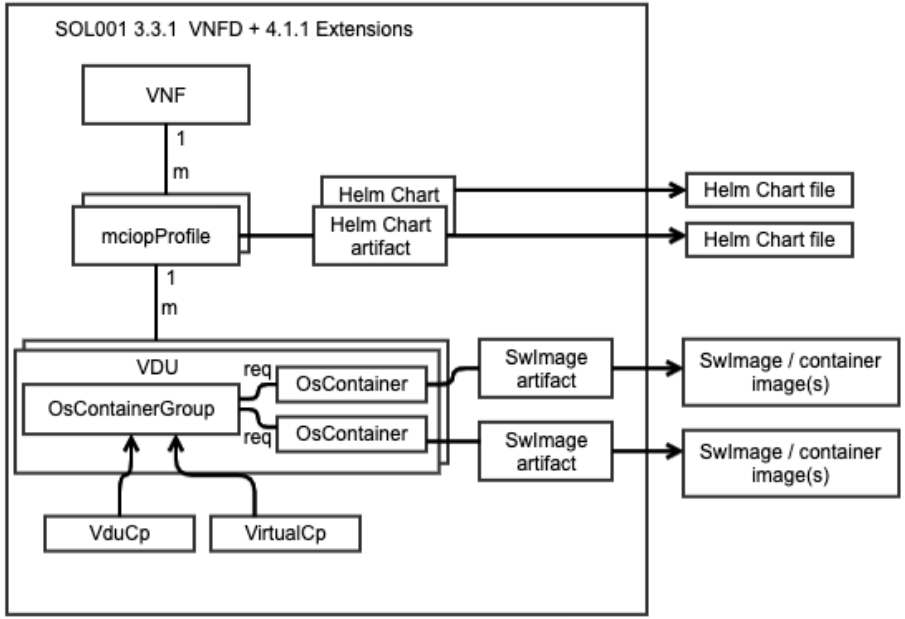


ONAP Container Data Model

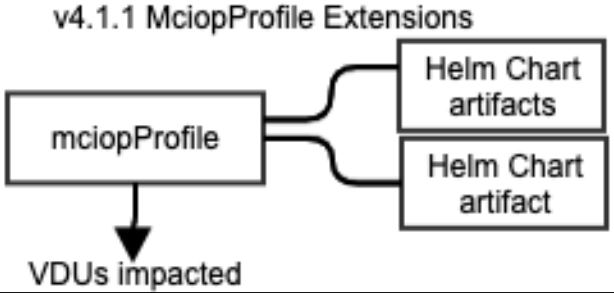
ONAP ETSI NFV Alignment
Fred Oliveira, Verizon
Byung-woo Jun, Ericsson
Seshu Kumar, Huawei

ETSI Aligned Container VNFD



- Based on ETSI SOL001 v3.3.1 + IFA011 v4.1.1 Enhancements
  - Added mciopProfile Type
  - Added Vdu.OsContainerGroup Node
  - Added Vdu.OsContainer Node
  - Added VirtualCp Node

mciopProfile

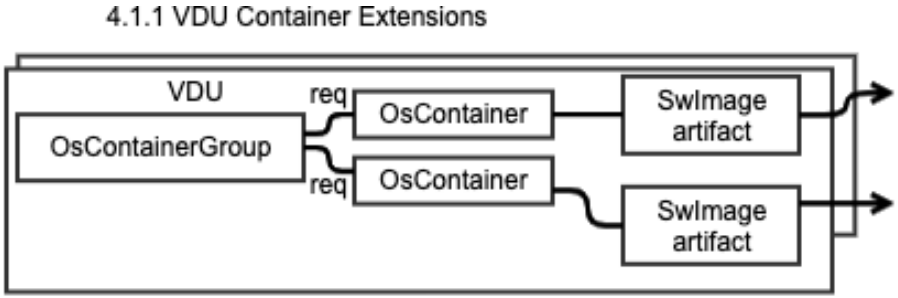


- Describes deployment artifacts
  - References the Helm Charts
  - Identifies the VDUs affected by each chart
  - Indicates the Deployment Order for the charts

tosca.datatypes.nfv.MciopProfile:
derived_from: tosca.datatypes.Root
description: describes a profile for instantiating VNFs of a particular NS DF according to a specific VNFD and VNF DF.

Id	Type	Cardinality	Constraints	Description
mciopId	String	1		Identifies the MCIOP in the VNF package.
deploymentOrder	Integer	0..1	greater_or_equal: 0	Indicates the order in which this MCIOP shall be deployed in relation to other MCIOPs. A lower value specifies an earlier deployment.
# affinityOrAntiAffinityGroupId	list of String	0..n		References the affinity or anti-affinity groups(s) the MCIOP belongs to.
associatedVdu	list of String	0..n		List of VDUs which are associated to this MCIOP and which are deployed using this MCIOP

Vdu.OsContainerGroup



- Analogous to Vdu.Compute
- Describes a Deployment Unit (K8S Pod)
  - Describes monitoring parameters and scaling
  - Describes boot parameters (Values.yaml)
  - Describes Persistent Storage
  - Requirement for the constituent OsContainers

tosca.nodes.nfv.Vdu.osContainerGroup:
derived_from: tosca.nodes.Root
description: Describes the aggregate of container(s) of a VDU which is a construct supporting the description of the deployment and operational behavior of a VNFC; Corresponds to a "Pod" in K8S; Can have multiple constituent containers.

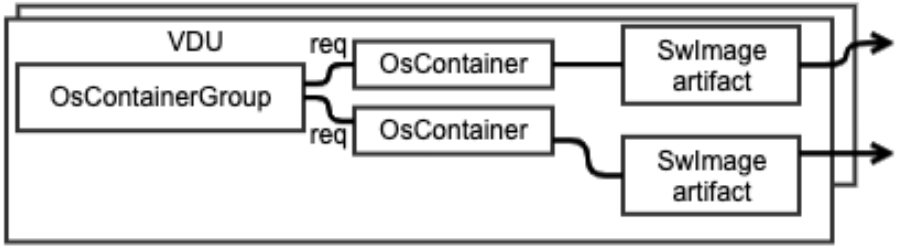
Id	Type	Cardinality	Description
name	String	1	Human readable name of the VDU
description	String	1	Human readable description of the VDU
nfvi_constraints	map of String	0..n	Describes constraints on the NFVI for the VNFC instance(s) created from this VDU. This property is reserved for future use in the present document.
monitoring_parameters	list of tosca.datatypes.nfv.VnfcMonitoringParameter	0..n	Describes monitoring parameters applicable to a VNFC instantiated from this VDU; Per Container on IFA011 v4.1.1 but more relevant at the VDU (Pod) Level
#configurable_properties	tosca.datatypes.nfv.VnfcConfigurableProperties	0..1	# derived types are expected to introduce configurable_properties with its type derived from tosca.datatypes.nfv.VnfcConfigurableProperties
vdu_profile	tosca.datatypes.nfv.VduProfile	1	Defines additional instantiation data for the Vdu.OsContainerGroup node
boot_data	tosca.datatypes.nfv.BootData	0..1	Contains the information used to customize a container compute resource at boot time. The bootData may contain variable parts that are replaced by deployment specific values before being sent

capabilities:
virtual_binding:
type: tosca.capabilities.nfv.VirtualBindable
occurrences: [1, UNBOUNDED]

requirements:
- virtual_storage:
capability: tosca.capabilities.nfv.VirtualStorage
relationship: tosca.relationships.nfv.AttachesTo
occurrences: [0, UNBOUNDED]
- container_grouping:
capability: tosca.capabilities.nfv.ContainerGroupable
relationship: tosca.relationships.nfv.GroupsTo
occurrences: [1, UNBOUNDED]

Vdu.OsContainer

4.1.1 VDU Container Extensions



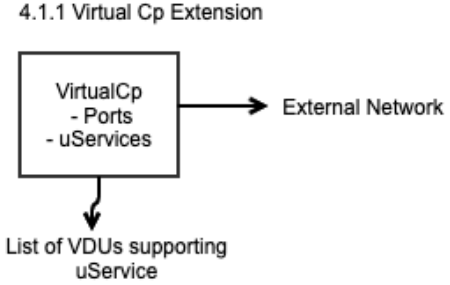
- Describes a Container
  - CPU, Memory, Storage Request and Limit
  - Supports a SwImage artifact that references the container image(s)
  - Groupable capability to OsContainerGroup

tosca.nodes.nfv.Vdu.osContainer:
derived_from: tosca.nodes.Root
description: Describes the resources of a single container within a VDU

Id	Type	Cardinality	Description
name	String	1	Human readable name of the Container
description	String	1	Human readable description of the Container
logical_node	map of tosca.datatypes.nfv.LogicalNodeData	0..n	Describes the logical node requirements
requested_additional_capabilities	map of tosca.datatypes.nfv.RequestedAdditionalCapability	0..n	Describes additional capabilities to host this container
requestedCpuResources	integer	0..1	Number of milli-Cpus
CpuResourcesLimit	integer	0..1	Limit (Max) Number of milli-Cpus
requestedMemoryResources	scalar-unit.size	0..1	Amount of Memory requested
MemoryResourcesLimit	scalar-unit.size	0..1	Limit (Max) Memory
requestedEphemeralStorageResources	scalar-unit.size	0..1	Amount of Ephemeral Storage Requested
ephemeralStorageResourcesLimit	scalar-unit.size	0..1	Limit on Ephemeral Storage

capabilities:
ContainerGroupable:
type: tosca.capabilities.nfv.ContainerGroupable
occurrences: [1, UNBOUNDED]

VirtualCp



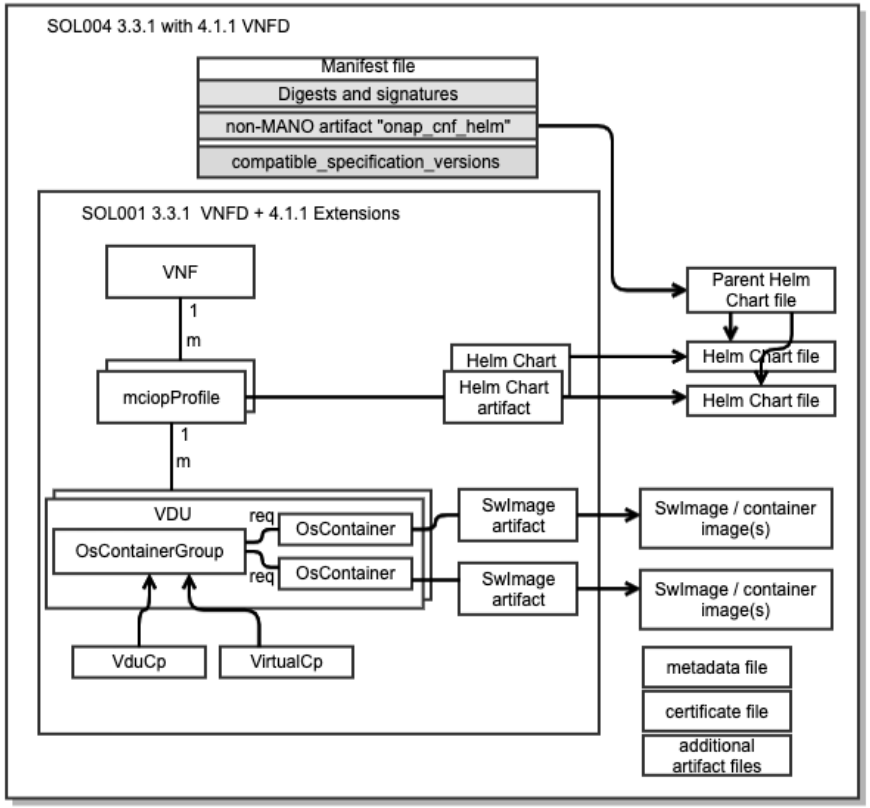
- Describes IP:Port to Service mapping
  - List of Ports/uServices
  - Target references the service VDU(s)
  - Link to External CP (Ingress Gateway IP)
  - Not supported in Honolulu

tosca.nodes.nfv.VirtualCp:
derived_from: tosca.nodes.nfv.Cp
description: Describes a virtual connection point allowing the access to a number of VNFC instances (based **on** their respective VDUs).

Id	Type	Cardinality	Description
additionalServiceData	list of tosca.datatypes.nfv.AdditionalServiceData	1	References the VDU(s) which implement this service

requirements:
- target:
  capability: tosca.capabilities.Node
  relationship: tosca.relationships.DependsOn
  occurrences: [1, UNBOUNDED]
- virtual_link:
  capability: tosca.capabilities.nfv.VirtualLinkable
  relationship: tosca.relationships.nfv.VirtVirtualLinksTo
  occurrences: [1, 1]

Common SOL004 Package for ETSI and Direct Path



- Additional SOL004 Non-MANO artifact “onap_cnf_helm”
  - https://nfvwiki.etsi.org/index.php?title=Non_MANO_artifact_sets
  - Reference to top-level “parent” helm chart
  - Parent Helm Chart can provide overall sequencing of the individual helm charts
  - **Reuse of individual helm charts**
- SwImages can be in the package or reference to external CIR
  - ETSI Catalog Manager can upload package images to ONAP CIR
- VNF Descriptor could be optional
  - SDC could create internal VNFD from Helm
  - ONAP SO could interpret Helm for resources and parameters

Reference Info

- ONAP CNF DM - https://wiki.onap.org/pages/viewpage.action?pageId=93003033
- Model contributed to ETSI NFV SOL WG for inclusion into SOL001 v4.x
  - Expect Stable Draft by end of Q1/21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